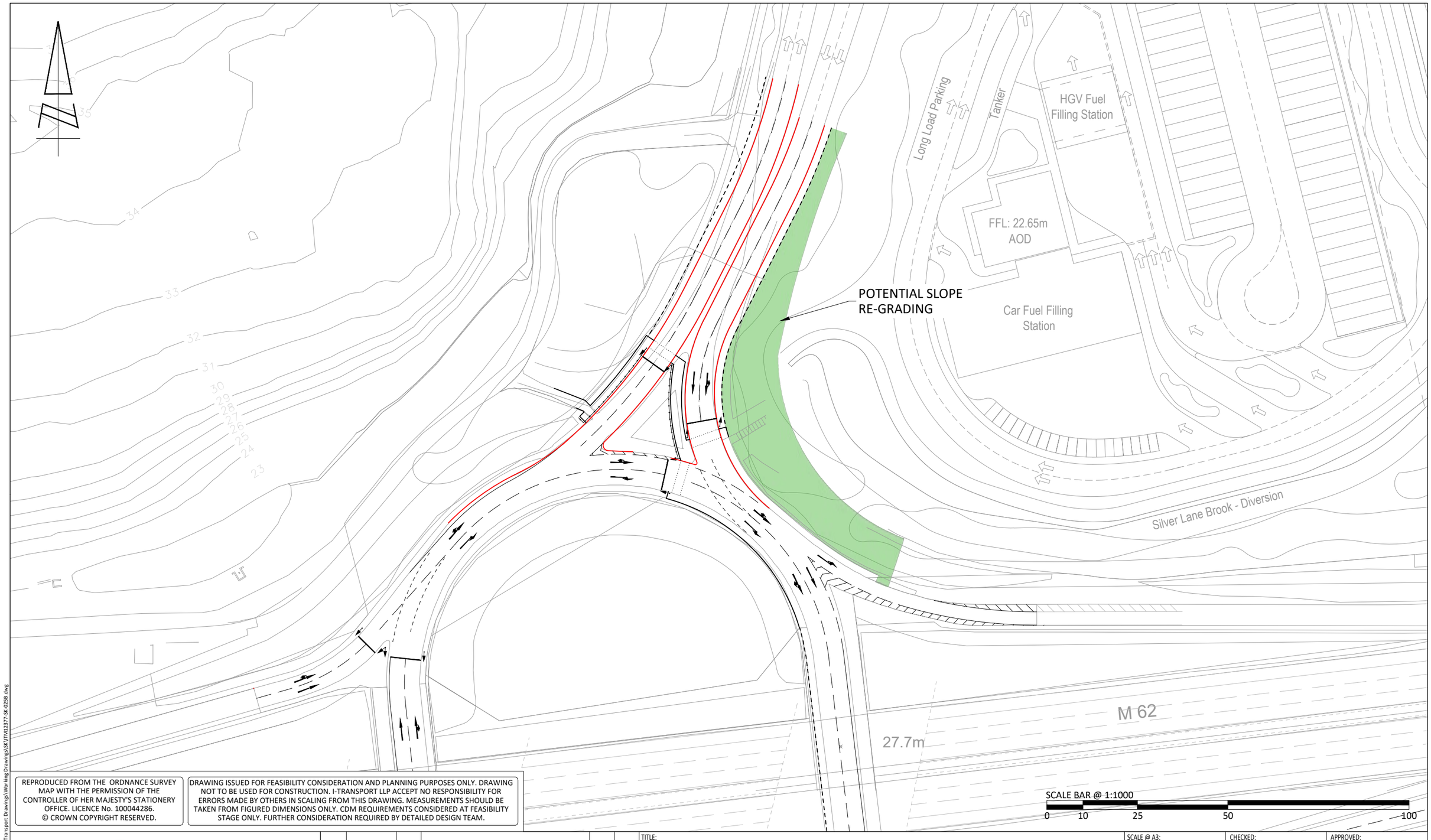
ES Part 1 Appendix 7



i-Transport

Centurion House, 129 Deansgate
Manchester, M3 3WR

Tel: 0161 830 2172
Fax: 0161 830 2173

www.i-transport.co.uk

REV	DATE	BY	DESCRIPTION	CHK	APD
B	25.07.19	PH	UPDATED SITE LAYOUT	GJ	GJ
A	05.06.19	JB	UPDATED ROUNDABOUT LAYOUT	GJ	GJ

STATUS: FOR INFORMATION

TITLE: PRELIMINARY SITE ACCESS LAYOUT

PROJECT: WARRINGTON MSA, JUNCTION 11 M62

CLIENT: EXTRA MSA GROUP

SCALE @ A3:	CHECKED:	APPROVED:
1:1000	JH	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	19.03.19

DRAWING No: ITM12377-SK-025

PROJECT No: ITM12377

REV: B

Z:\Projects\12377ITM M62 Warrington MSA\Tech\AcadU-Transport Drawings\Working Drawings\SK\ITM12377-SK-025B.dwg

ES Part 1 Appendix 8

N

LEGEND

- APPLICATION SITE BOUNDARY
- EXISTING WOODLAND / TREE
- GAS MAIN
- EXISTING POND
- EXISTING WATERCOURSE
- EXISTING DEVELOPMENT
- PERMISSIVE BRIDLEWAY
- PERMISSIVE FOOTPATH
- PUBLIC FOOTPATH

PROPOSED DEVELOPMENT STRATEGY

- NEW STRATEGIC GREEN LINK
- AMENITY BUILDING
- FUEL FILLING STATION / ELECTRIC CHARGING STATION
- CHILDREN'S PLAY AREA

LANDSCAPE PROPOSALS

- PROPOSED AREA OF MIXED WOODLAND / TREE AND SHRUB PLANTING
- ROUGH GRASSLAND
- WILDFLOWER MEADOW
- AMENITY GRASSLAND WITHIN MSA
- FLOWER RICH ACID GRASSLAND WITHIN MSA
- DIVERTED SILVER LANE BROOK, MARGINS AND/ MARSHY ACID GRASSLAND

EXTRA

SLR global environmental solutions
ASPECT HOUSE
ASPECT BUSINESS PARK
BENNERLEY ROAD
NOTTINGHAM. NG6 8WR
T: 01159 647280
F: 01159 751576
www.slrconsulting.com

WARRINGTON MSA J11/M62

INDICATIVE WIDER LANDSCAPE

LANDSCAPE CONTEXT

LC-1

Scale 1:5,000 @A2

Date AUG 2019

190812-403.08062.00001_Warrington MSA_LM-1-LC-1-LC-2.dwg

LEGEND

- APPLICATION SITE BOUNDARY
- EXISTING WOODLAND / TREES
- PUBLIC RIGHT OF WAY (OFF SITE)
- PERMISSIVE ROUTE ON RESTORED LANDFILL
- GAS MAIN

PROPOSED DEVELOPMENT AREAS

- FACILITY BUILDING
- FUEL FILLING STATION / ELECTRIC CHARGING STATION
- CHILDREN'S PLAY AREA

PROPOSED LANDSCAPE SCHEME

- TREE AND SHRUB PLANTING
- AMENITY GRASSLAND
- FLOWER RICH ACID GRASSLAND
- DIVERTED SILVER LANE BROOK, MARGINS AND/ MARSHY ACID GRASSLAND
- PUBLIC RIGHT OF WAY (DIVERTED)
- PERMISSIVE FOOTPATH (WITHIN SITE)

EXTRA

SLR global environmental solutions

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ASPECT BUSINESS PARK
BENNERLEY ROAD
NOTTINGHAM. NG6 8WR
T: 01159 647280
F: 01159 751576
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WARRINGTON MSA J11/M62

INDICATIVE LANDSCAPE MASTERPLAN

LANDSCAPE MASTERPLAN

LM-1

Scale	Date
1:2,500 @ A3	AUG 2019

190812-403.08062.00001_Warrington MSA_LM-1-LC-1-LC-2.dwg

LEGEND

APPLICATION SITE BOUNDARY

MOTORWAY SERVICE AREA (MSA)

PUBLIC RIGHT OF WAY DIVERTED (PLANINGS)

PERMISSIVE FOOTPATH (GRASS)

WIDER LANDSCAPE

PUBLIC FOOTPATH (GRASS)

PERMISSIVE BRIDLEWAY (PLANINGS)

PERMISSIVE FOOTPATH (PLANINGS)

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T: 01159 647280
F: 01159 751576
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WARRINGTON MSA J11/M62

INDICATIVE WIDER SITE CONTEXT

RECREATIONAL ACCESS

RA-1

Scale: 1:5,000 @ A3

Date: AUG 2019

190812-403.08062.00001_Warrington MSA_LM-1-LC-1-LC-2.dwg

ES Part 1 Appendix 9

1:1250

0 25 50 125 m

N

KEY

Application Boundary

NOTES:

The site boundary is based on Wardell Armstrong drawing no SH11739-006 with amendments discussed with Wardell Armstrong, Shoosmiths, Spawforths and i-transport and approved by Extra.

This red line boundary is to be used for planning purposes only.

Site and surrounding information based on Ordnance Survey Plan Information supplied by Spawforths. Licence no. 100022432.

Area of restored landfill site amended to reflect current site conditions.

This drawing is indicative and the plan, elevation, massing and detailing are all subject to change within the bounds of the parameter drawings submitted as part of this application.

Rev:	Date:	Description:	By:	Rvw:
P9	26.07.19	Outline Planning Issue	JLR	TW
P8	25.07.19	FFL's updated	JLR	TW
P7	19.07.19	Building plan updated. Additional colour and detail attached	JLR	TW
P6	16.07.19	Site plan updated in accordace with comments from highway engineer	JLR	TW
P5	11.07.19	New site layout to incorporate peat habitat zone	JLR	TW
P4	22.05.19	Planning Draft For Review	TW	NAB
P3	02.05.19	Play area moved in line with HSE comments. Parking adjusted to accomodate revised play area. Bus stop added following public consultation in line with Extra instruction. Pedestrian link from car parking to PROW added in line with Spawforths comments.	TW	TW
P2	11.04.19	Context coordination. FFS update	JLR	TW
P1	20.03.19	i-Transpoty access plan added, amenity building updated	TW	TW

architecture 519

a. The Studio, Candle House, 1 Wharf Approach, Granary Wharf, Leeds, LS1 4GH
e. Leeds@architecture519.com
w. www.architecture519.com
t. 0113 213 5656

Client:

EXTRA MSA GROUP

Project No:	Project Name:
2562	WARRINGTON MOTORWAY SERVICE AREA, J11 M62

Document Reference:

Project - Originator - Volume - Level - Type - Role - Number

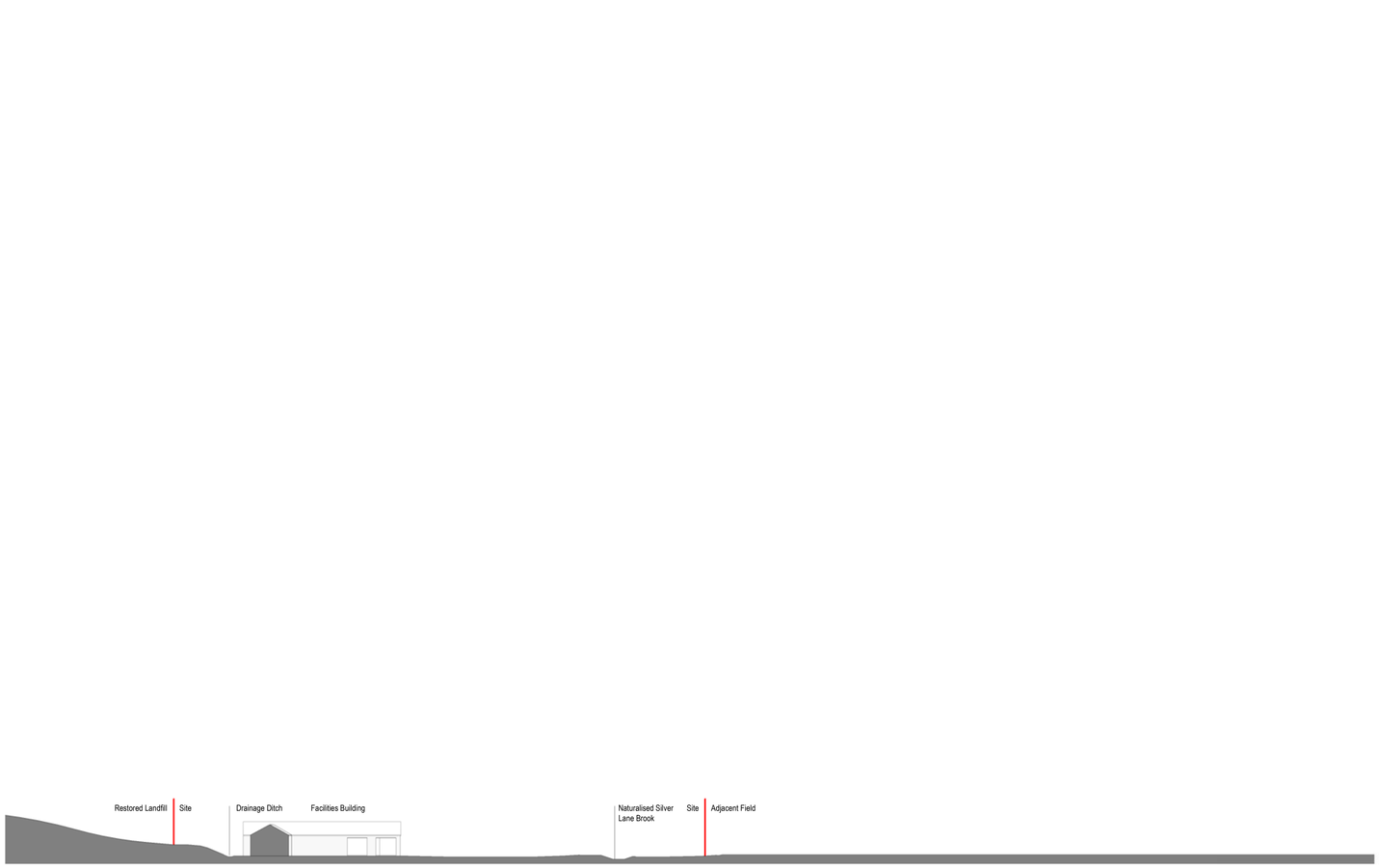
RMS - 519 - ZZ - XX - DR - A - 0751

INDICATIVE SITE PLAN

Status: Code: Suitability description

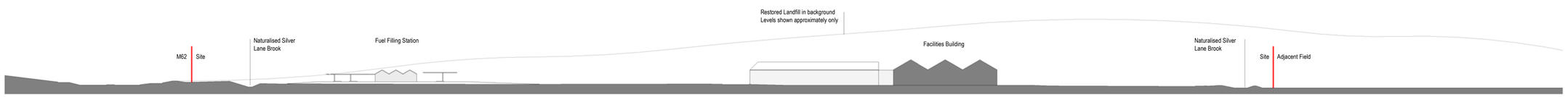
Revision: Code: **P9** Revision status: Planning

Created By:	Reviewed By:	Date:	Scale at A1:
JLR	TW	01.04.19	1 : 1250



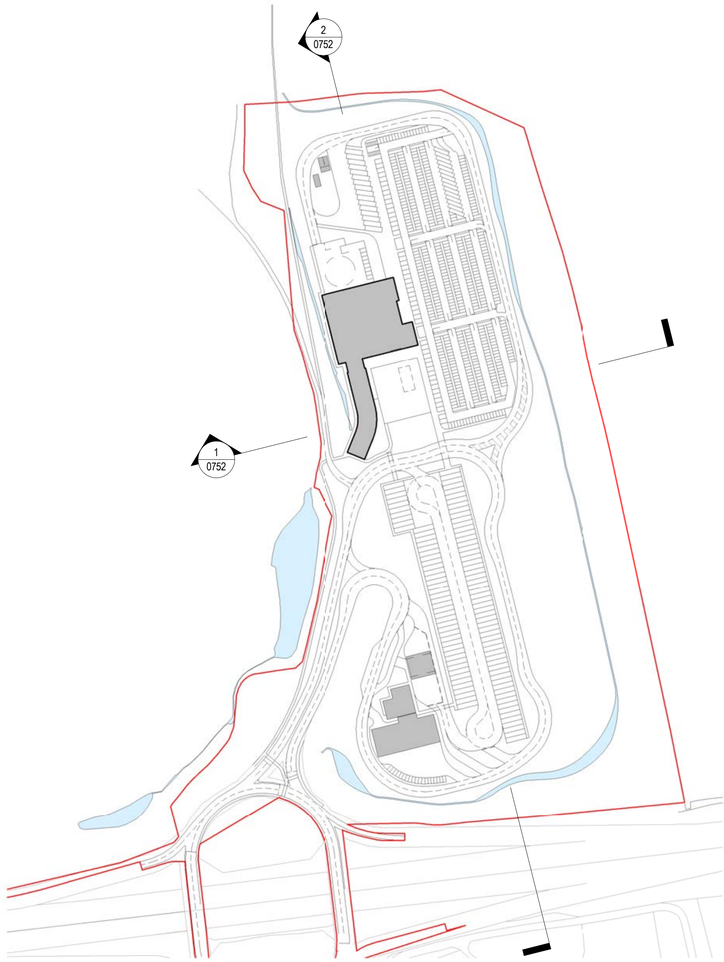
INDICATIVE SITE SECTION 01

1 : 1250



INDICATIVE SITE SECTION 02

1 : 1250



INDICATIVE SECTION KEY PLAN

1 : 2500

1:2500

0 50 100 250 m

1:1250

0 25 50 125 m

N

KEY

Application Boundary

NOTES:

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Site and surrounding information based on Ordnance Survey Plan Information supplied by Spawforths. Licence no. 100022432.

Area of restored landfill site amended to reflect current site conditions.

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Rev:	Date:	Description:	By:	Rvw:
P2	26.07.19	Outline Planning Issue	JLR	TW
P1	22.05.19	Planning Draft For Review	TW	NAB

architecture 519

a. The Studio, Candle House, 1 Wharf Approach, Granary Wharf, Leeds, LS1 4GH
e. Leeds@architecture519.com
w. www.architecture519.com
t. 0113 213 5656

Client:

EXTRA MSA GROUP

Project No: 2562

Project Name: WARRINGTON MOTORWAY SERVICE AREA, J11 M62

Document Reference:

Project - Originator - Volume - Level - Type - Role - Number

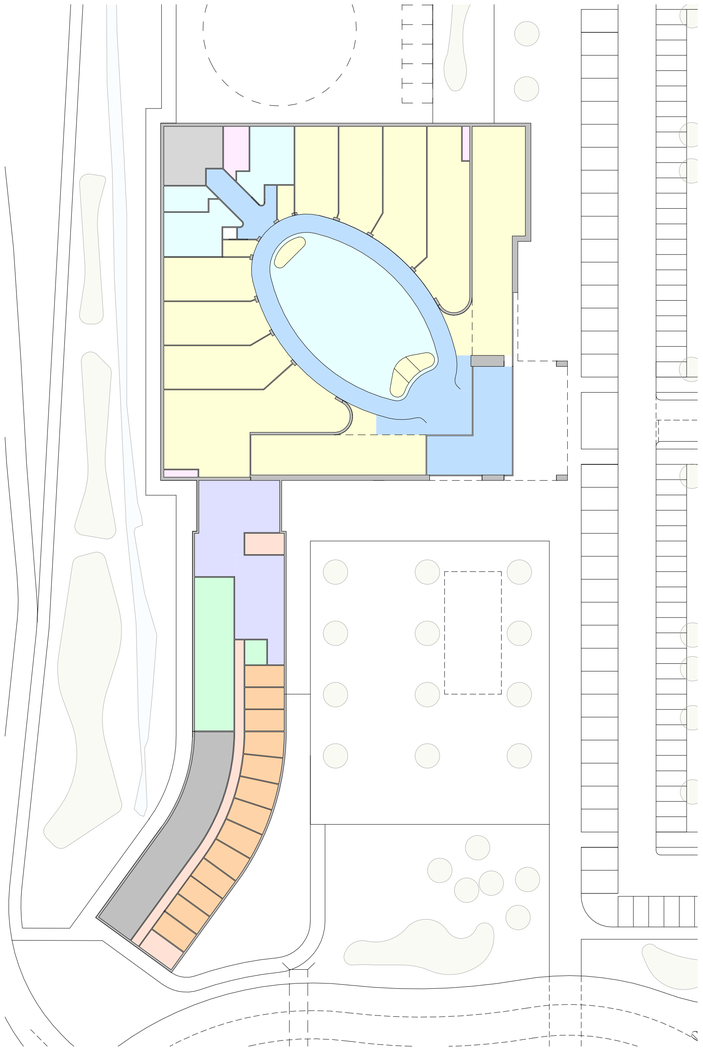
RMS - 519 - ZZ - XX - DR - A - 0752

INDICATIVE SITE SECTIONS

Status: Code: Suitability description:

Revision: Code: P2 Revision status: Planning

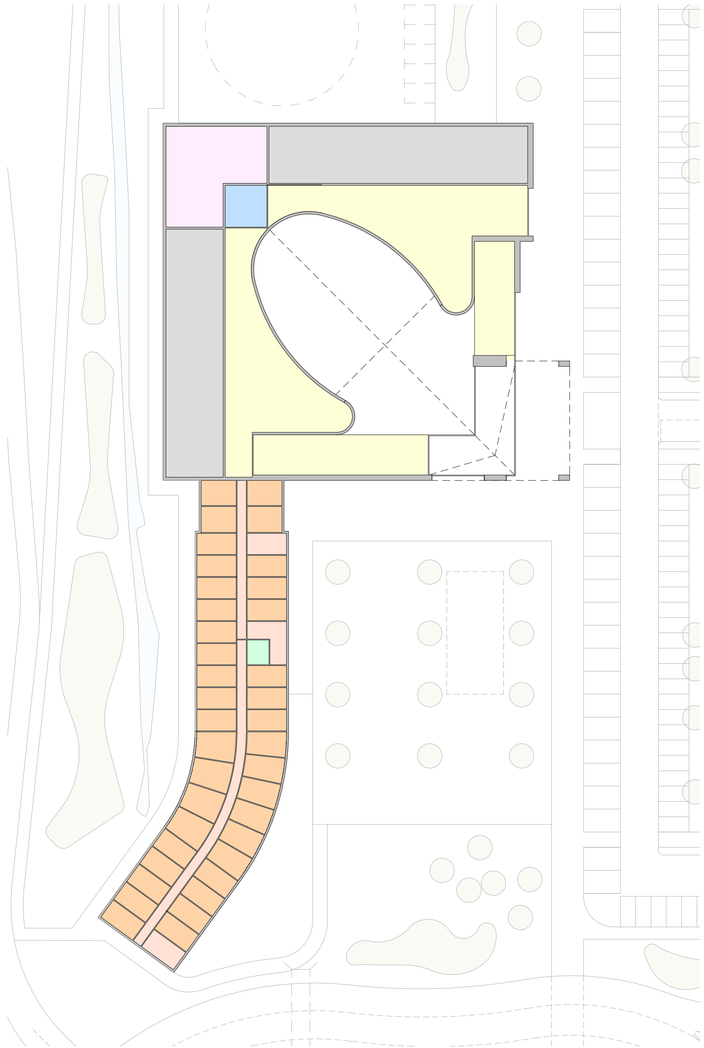
Created By:	Reviewed By:	Date:	Scale at A1:
JLR	TW	01.04.19	As indicated



INDICATIVE GROUND FLOOR PLAN

1 : 500

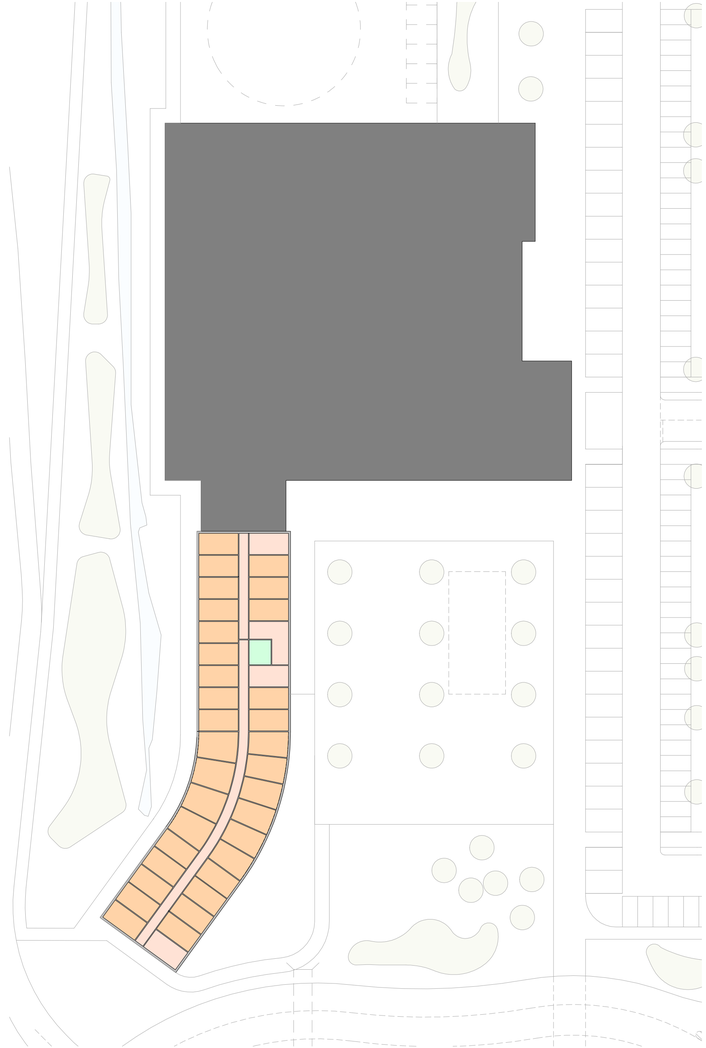
- Facilites - Back of House
- Facilities - Public Facility
- Facilities - Lettable Area
- Facilities - Plant
- Facilities - Public Circulation
- Hotel - Back Of House
- Hotel - Bedrooms
- Hotel - Circulation
- Hotel - Front Of House
- Hotel - Plant



INDICATIVE FIRST FLOOR PLAN

1 : 500

- Amenity - Lettable Area
- Facilites - Back of House
- Facilities - External Plant
- Facilities - Lettable Area
- Facilities - Public Circulation
- Hotel - Back Of House
- Hotel - Bedrooms
- Hotel - Circulation



INDICATIVE SECOND FLOOR PLAN

1 : 500

- Hotel - Back Of House
- Hotel - Bedrooms
- Hotel - Circulation

1:500

0 25 50 m

N

NOTES:

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Site and surrounding information based on Ordnance Survey Plan Information supplied by Spawforths. Licence no. 100022432.

Area of restored landfill site amended to reflect current site conditions.

This drawing is indicative and the plan, elevation, massing and detailing are all subject to change within the bounds of the parameter drawings submitted as part of this application.

Rev:	Date:	Description:	By:	Rvw:
P2	26.07.19	Outline Planning Issue	JLR	TW
P1	22.05.19	Planning Draft For Review	TW	NAB

architecture 519

a. The Studio, Candle House, 1 Wharf Approach, Granary Wharf, Leeds, LS1 4GH
e. Leeds@architecture519.com
w. www.architecture519.com
t. 0113 213 5656

Client:

EXTRA MSA GROUP

Project No:	Project Name:
2562	WARRINGTON MOTORWAY SERVICE AREA, J11 M62

Document Reference:

Project - Originator - Volume - Level - Type - Role - Number

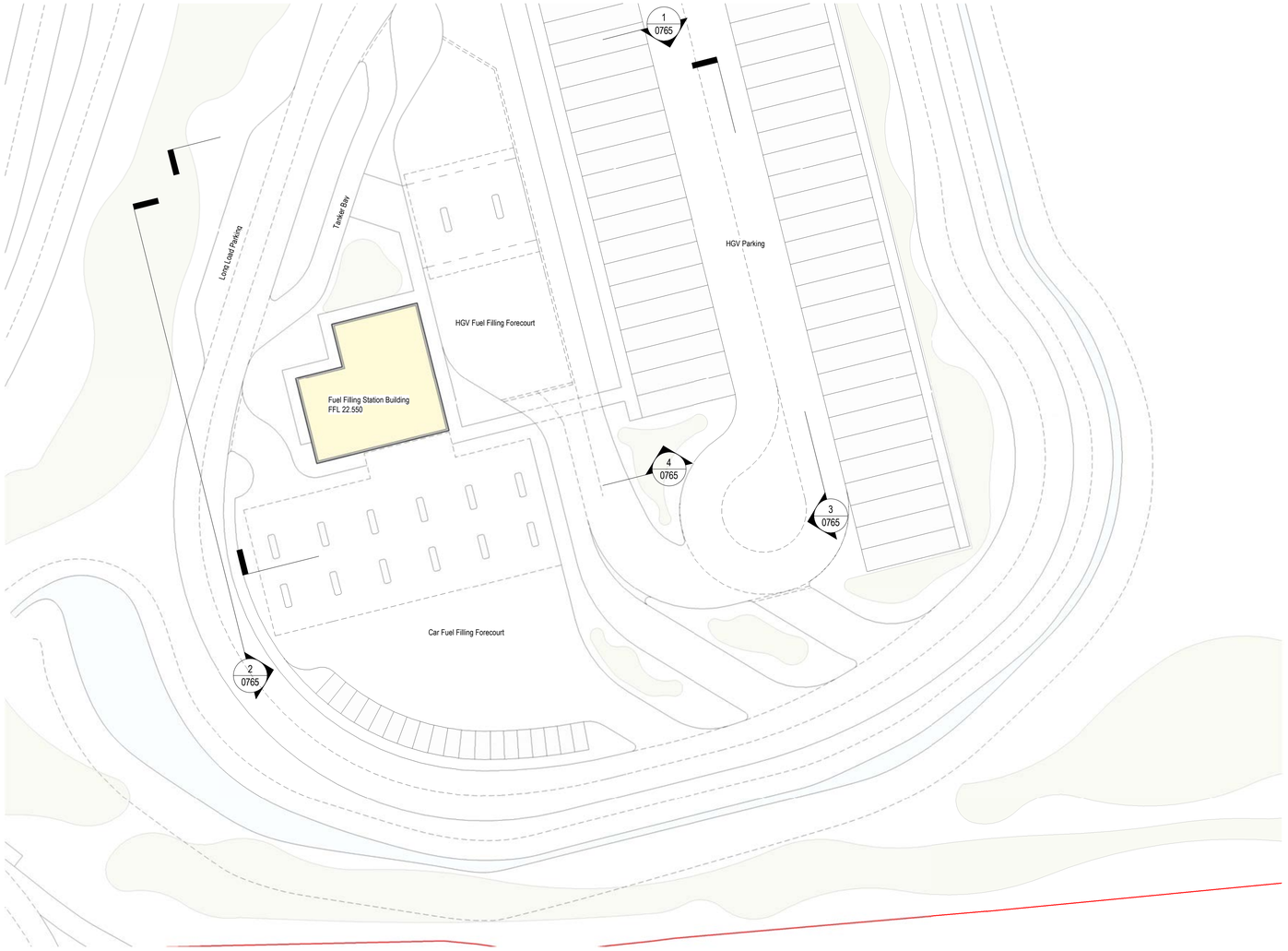
RMS - 519 - ZZ - XX - DR - A - 0760

INDICATIVE FLOOR PLANS

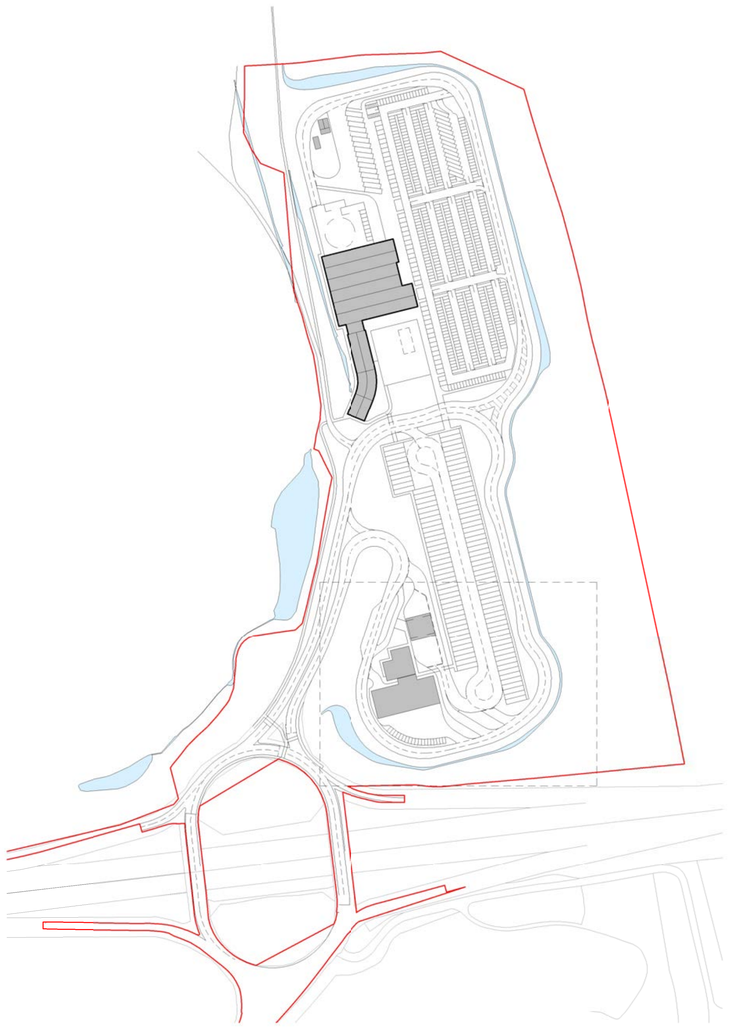
Status: Code: Suitability description:

Revision: Code: P2 Revision status: Planning

Created By:	Reviewed By:	Date:	Scale at A1:
TW	TW	21.03.19	1 : 500



INDICATIVE FUEL FILLING STATION GROUND FLOOR PLAN
1 : 500



INDICATIVE FUEL FILLING STATION KEY PLAN
1 : 2500

01 - FFS INDICATIVE NORTH MASSING ELEVATION
1 : 500

02 - FFS INDICATIVE WEST MASSING ELEVATION
1 : 500

03 - FFS INDICATIVE EAST MASSING ELEVATION
1 : 500

04 - FFS INDICATIVE SOUTH MASSING ELEVATION
1 : 500

1:2500

0 50 100 250 m

1:500

0 25 50 m

N

KEY

Application Boundary

NOTES:

The site boundary is based on Wardell Armstrong drawing no SH11739-006 with amendments discussed with Wardell Armstrong, Shoosmiths, Spawforths and i-transport and approved by Extra.

This red line boundary is to be used for planning purposes only.

Site and surrounding information based on Ordnance Survey Plan Information supplied by Spawforths. Licence no. 100022432.

Area of restored landfill site amended to reflect current site conditions.

This drawing is indicative and the plan, elevation, massing and detailing are all subject to change within the bounds of the parameter drawings submitted as part of this application.

Rev:	Date:	Description:	By:	Rvw:
P2	26.07.19	Outline Planning Issue	JLR	TW
P1	22.05.19	Planning Draft For Review	TW	NAB

architecture 519
a. The Studio, Candle House, 1 Wharf Approach, Granary Wharf, Leeds, LS1 4GH
e. Leeds@architecture519.com
w. www.architecture519.com
t. 0113 213 5656

Client:
EXTRA MSA GROUP

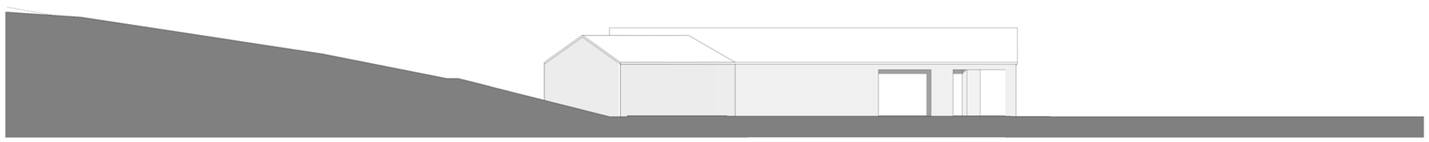
Project No:	Project Name:
2562	WARRINGTON MOTORWAY SERVICE AREA, J11 M62

Document Reference:
Project · Originator · Volume · Level · Type · Role · Number
RMS - 519 - ZZ - XX - DR - A - 0765
INDICATIVE FUEL FILLING STATION PLANS AND ELEVATIONS

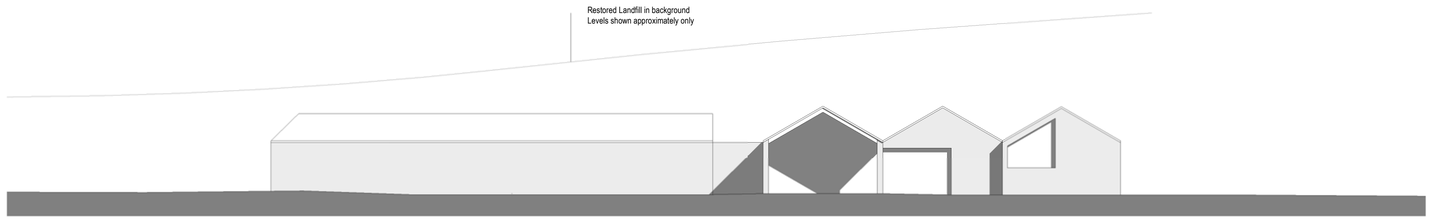
Status: Code: Suitability description:

Revision: Code: **P2** Revision status: Planning

Created By:	Reviewed By:	Date:	Scale at A1:
TW	NAB	22.05.19	As indicated

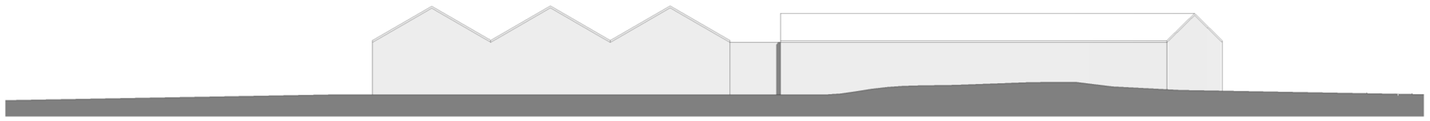


01 - INDICATIVE SOUTH MASSING ELEVATION
1 : 500



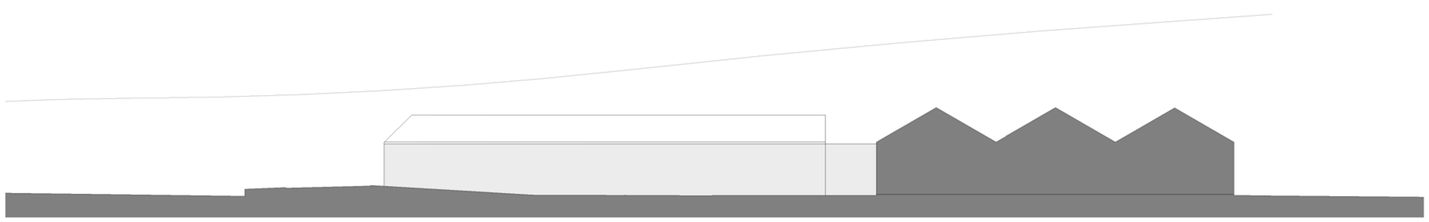
02 - INDICATIVE EAST MASSING ELEVATION
1 : 500

03 - INDICATIVE NORTH MASSING ELEVATION
1 : 500

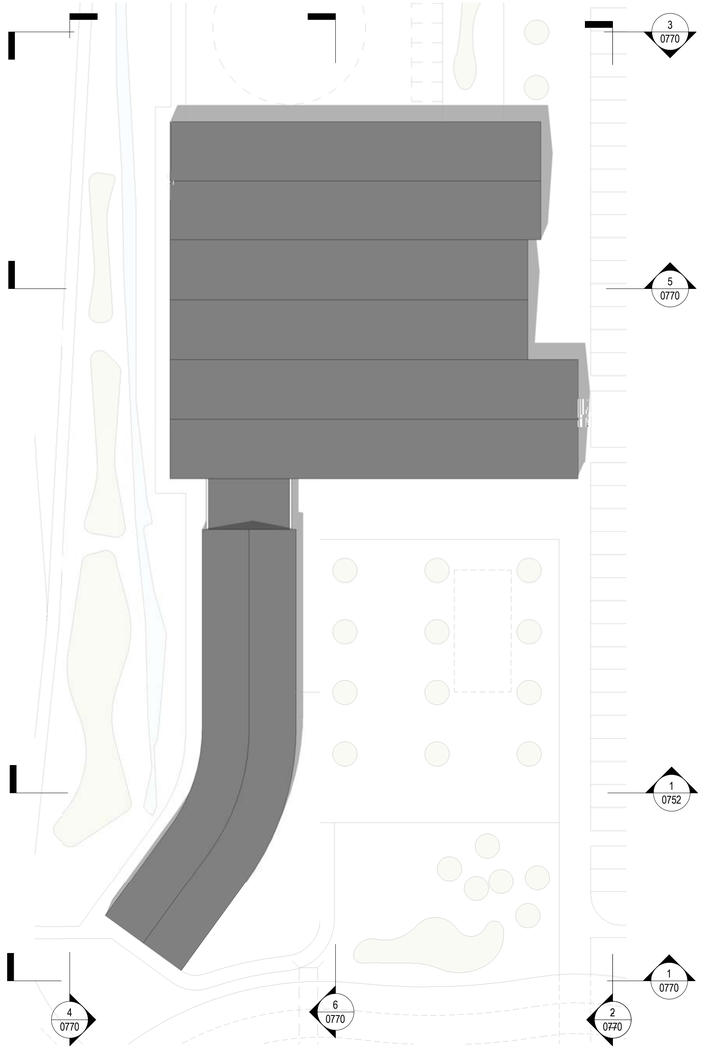


04 - INDICATIVE WEST MASSING ELEVATION
1 : 500

05 - INDICATIVE SECTION 05
1 : 500



06 - INDICATIVE SECTION 06
1 : 500



INDICATIVE ROOF PLAN
1 : 500

1:500

0 25 50 m

N

NOTES:

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This red line boundary is to be used for planning purposes only.

Site and surrounding information based on Ordnance Survey Plan Information supplied by Spawforths. Licence no. 100022432.

Area of restored landfill site amended to reflect current site conditions.

This drawing is indicative and the plan, elevation, massing and detailing are all subject to change within the bounds of the parameter drawings submitted as part of this application.

Rev:	Date:	Description:	By:	Rvw:
P2	26.07.19	Outline Planning Issue	JLR	TW
P1	22.05.19	Planning Draft For Review	TW	NAB

architecture 519
a. The Studio, Candle House, 1 Wharf Approach, Granary Wharf, Leeds, LS1 4GH
e. Leeds@architecture519.com
w. www.architecture519.com
t. 0113 213 5656

Client:
EXTRA MSA GROUP

Project No: 2562

Project Name: WARRINGTON MOTORWAY SERVICE AREA, J11 M62

Document Reference:
Project - Originator - Volume - Level - Type - Role - Number
RMS - 519 - ZZ - XX - DR - A - 0770

INDICATIVE MASSING ELEVATIONS, SECTIONS AND ROOF PLAN

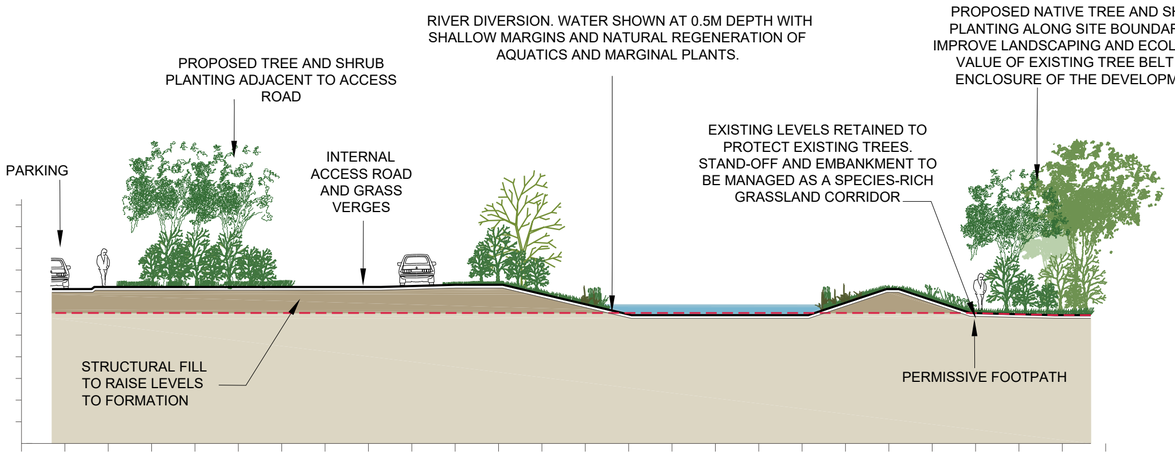
Status: Code — Suitability description

Revision: Code **P2** — Revision status Planning

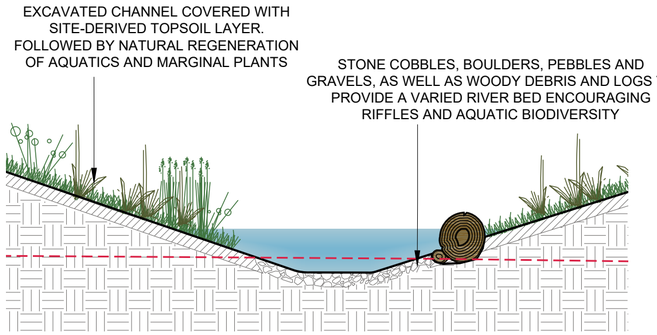
Created By:	Reviewed By:	Date:	Scale at A1:
TW	TW	21.03.19	1 : 500

ES Part 1 Appendix 10

1) NORTHERN CHANNEL



ILLUSTRATIVE INSET TO CHANNEL BASE (1:50)



NOTES

THE PROPOSED DIVERSION AND ENHANCEMENT OF THE SILVER LANE BROOK INCORPORATES MEASURES TO INCREASE TREE COVER AND PUBLIC ACCESS TO CONTRIBUTE POSITIVELY TO THE OBJECTIVES OF THE MERSEY FOREST.

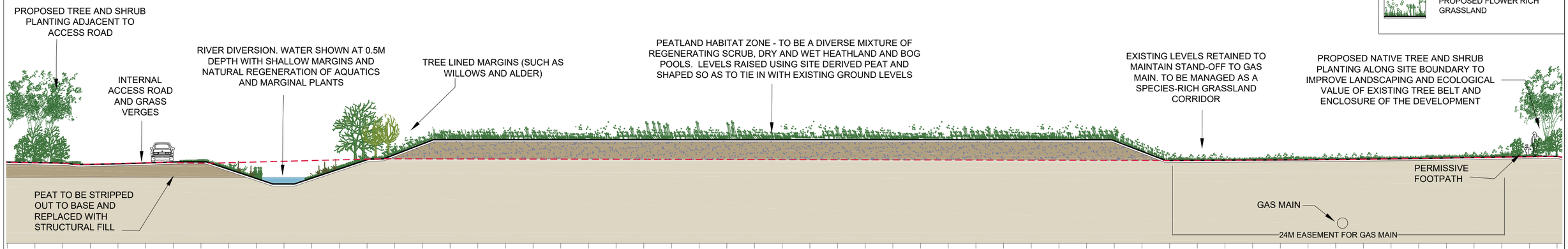
THESE SECTIONS ARE NOT BASED ON PRECISE LOCATIONS, BUT THEY AIM TO DEMONSTRATE THE OVERALL APPROACH IN TERMS BIODIVERSITY AND LANDSCAPE ENHANCEMENT OF THE DIVERTED RIVER CORRIDOR.

ENGINEERED DETAILS, CROSSING POINTS AND DRAINAGE CONNECTIONS ARE NOT SHOWN AND ARE TO BE DETERMINED.

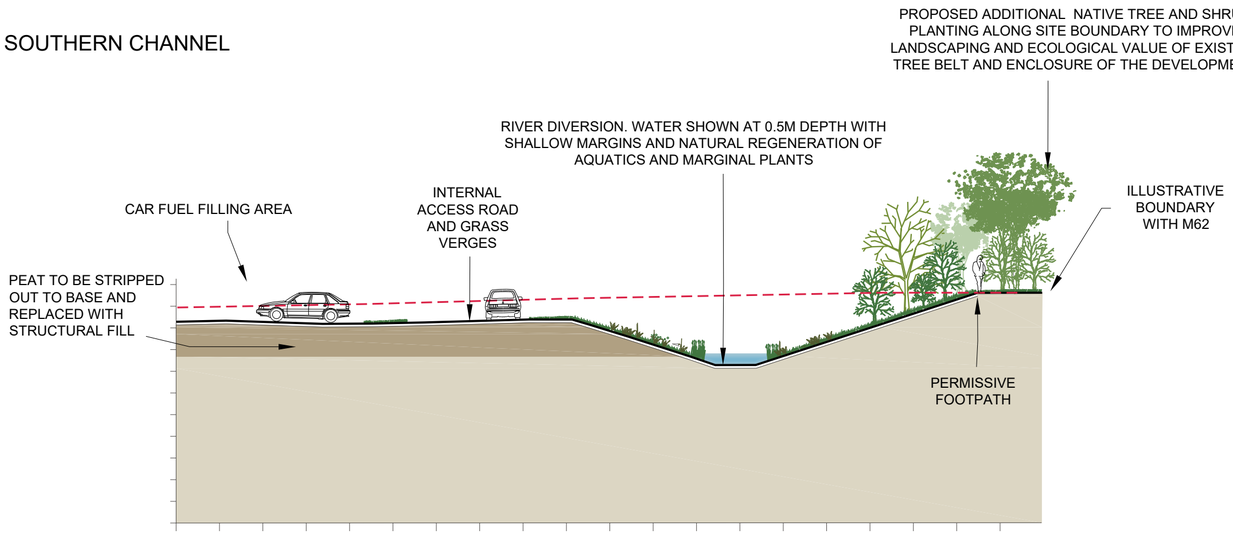
LEGEND FOR SECTIONS

- EXISTING GROUND LEVEL PROFILE
- PROPOSED GROUND LEVEL PROFILE
- IN-SITU GROUND / AREA OF FILL
- EXISTING TREE / SHRUB
- PROPOSED NATIVE TREE / SHRUB PLANTING
- PROPOSED TREE LINED MARGINS (ALDER / WILLOW)
- PROPOSED AMENITY GRASSLAND
- PROPOSED FLOWER RICH GRASSLAND

2) EASTERN CHANNEL

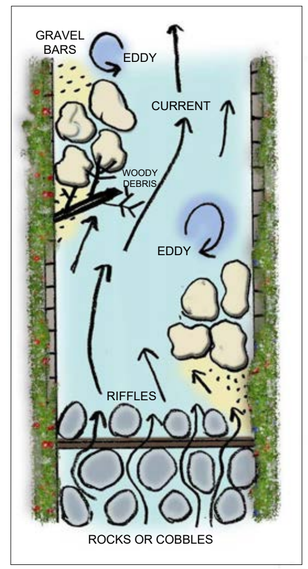


3) SOUTHERN CHANNEL



SKETCH PLAN VIEW

PROPOSED IN-CHANNEL FEATURES TO IMPROVE ECOLOGICAL AND LANDSCAPE VALUE



EXTRA

SLR global environmental solutions
ASPECT HOUSE
ASPECT BUSINESS PARK
BENNERLEY ROAD
NOTTINGHAM. NG6 8WR
T: 01159 647280
F: 01159 751576
www.slrconsulting.com

WARRINGTON MSA J11/M62

SILVER LANE BROOK DIVERSION

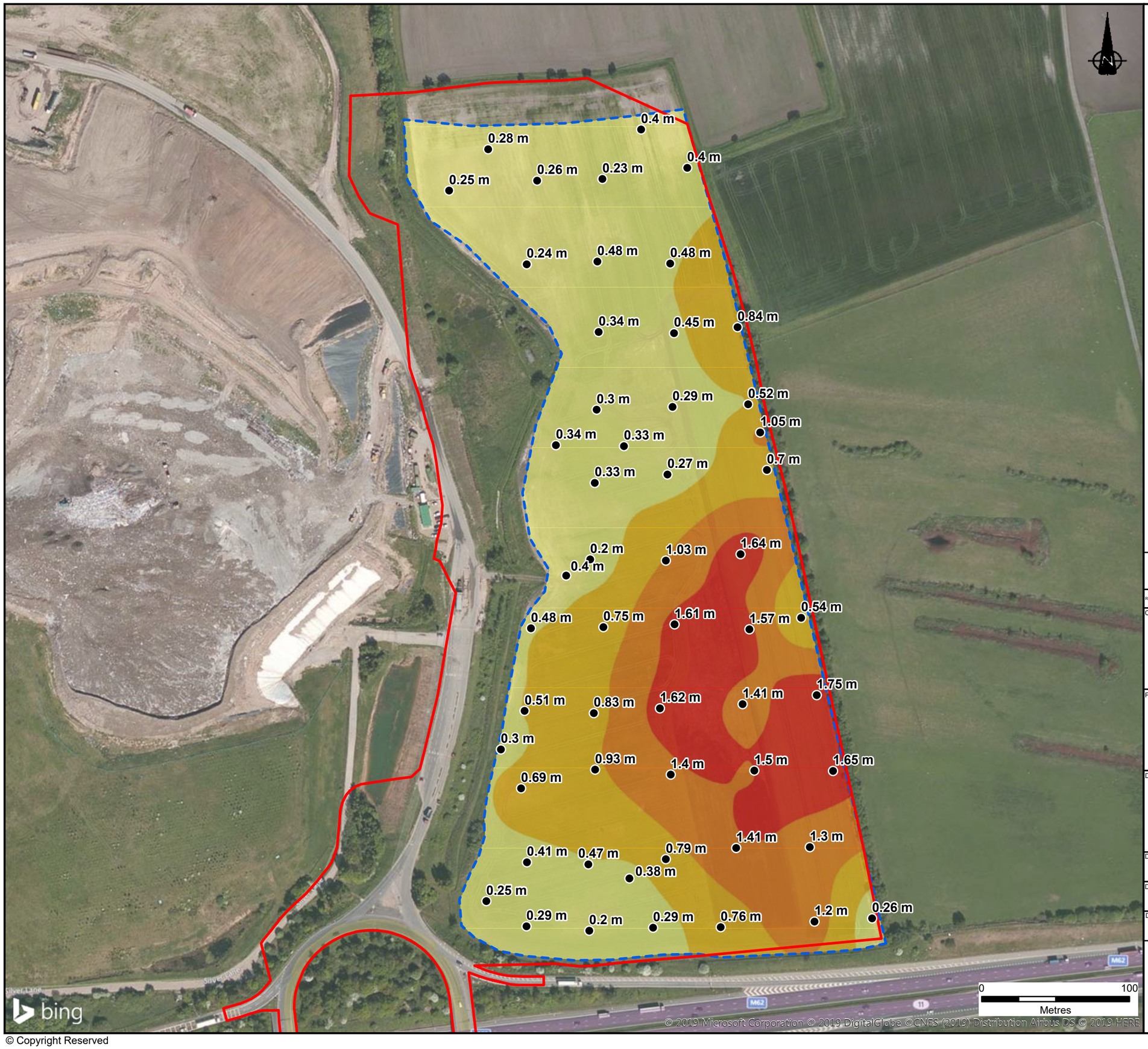
ILLUSTRATIVE CROSS SECTIONS

BD-1

Scale 1:200 (OR AS SHOWN) A2

Date AUG 2019

190813-09361.00001_Illustrative_Cross_Sections_SH.dwg



KEY

- Site Boundary
- Peat Depth Survey Area
- Survey Points

Peat Depth Interpolation

- 0.0 ≤ x < 0.5 m
- 0.5 ≤ x < 1.0 m
- 1.0 ≤ x < 1.5 m
- 1.5 ≤ x < 2.0 m

Notes:

Survey undertaken in January 2019 by Wardell Armstrong.

Depths are below ground level and therefore include the upper approximately 0.36 m of peaty agricultural topsoil.

Aerial imagery shown for context purposes only.

Boundaries are indicative.

REVISION	DETAILS	DATE	DRAWN	CHKD	APP'D
B	SITE BOUNDARY AMENDMENTS	JULY 2019	SW	HS	CR
A	FIRST ISSUES	APRIL 2019	SW	HS	CR

CLIENT

EXTRA MOTORWAY SERVICE AREA GROUP

PROJECT

WARRINGTON MOTORWAY SERVICE AREA,
J11 M62

DRAWING TITLE

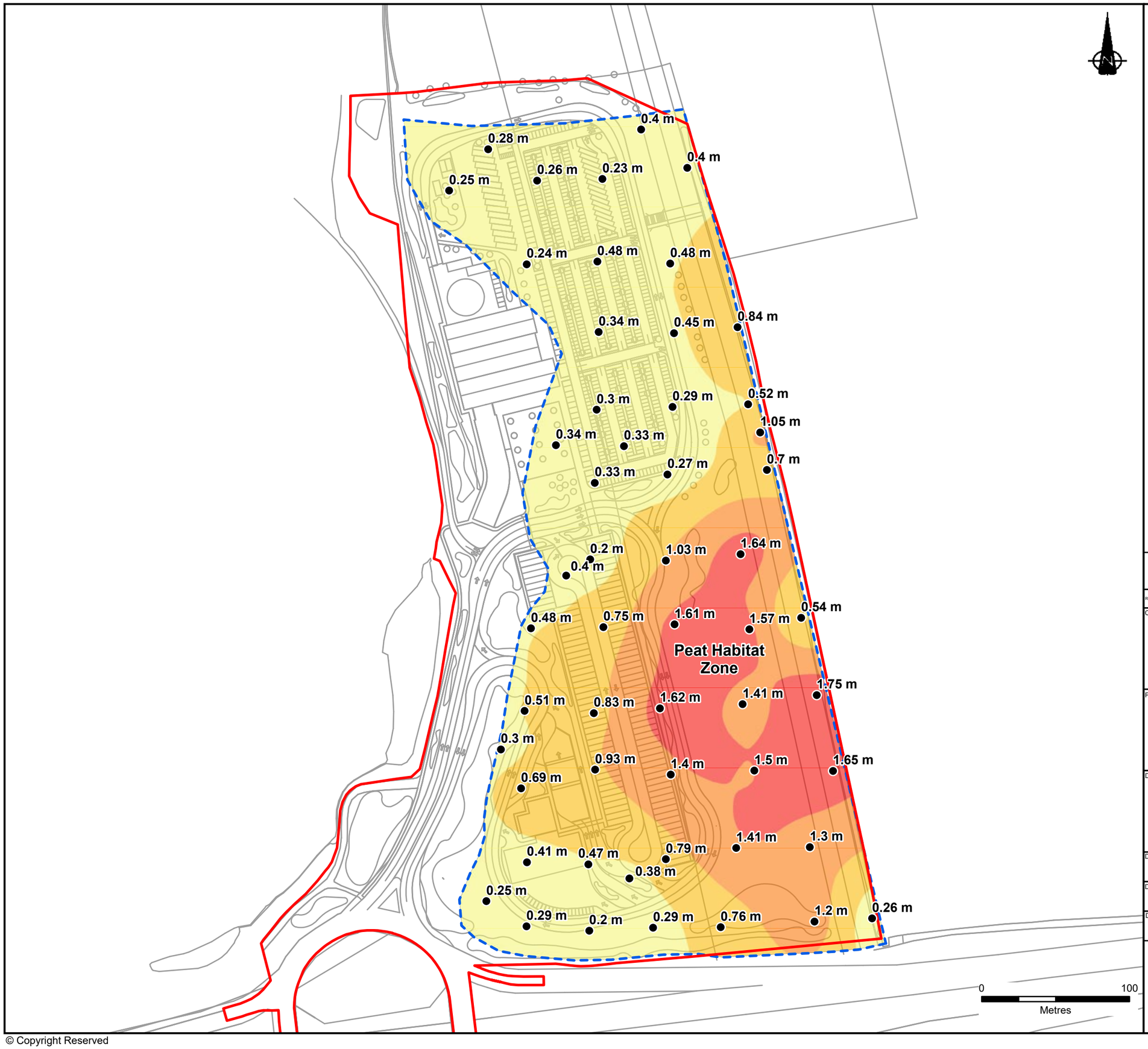
FIGURE 10.4
PEAT DEPTH

DRG No.	REV
SH11739/018	B

DRG SIZE	SCALE	DATE
A3	1:2,500	22/07/2019

DRAWN BY	CHECKED BY	APPROVED BY
SW	HS	CR

wardell armstrong
NEWCASTLE UPON TYNE | TEL 0191 232 0943
WWW.WARDELL-ARMSTRONG.COM
BIRMINGHAM · BOLTON · CARDIFF · CARLISLE · EDINBURGH · GLASGOW · LONDON · MANCHESTER · SHEFFIELD · STOKE ON TRENT



KEY

- Site Boundary
- Peat Depth Survey Area
- Survey Points

Peat Depth Interpolation

- 0.0 ≤ x < 0.5 m
- 0.5 ≤ x < 1.0 m
- 1.0 ≤ x < 1.5 m
- 1.5 ≤ x < 2.0 m

Notes:

Survey undertaken in January 2019 by Wardell Armstrong.

Depths are below ground level and therefore include the upper approximately 0.36 m of peaty agricultural topsoil.

Boundaries are indicative.

Site Layout taken from Site Layout Option B1

REVISION	DETAILS	DATE	DRAWN	CHKD	APP'D
C	SITE LAYOUT AMENDED	07/2019	HM	HS	CR
B	SITE BOUNDARY AMENDMENTS	07/2019	SW	HS	CR
A	FIRST ISSUE	04/2019	SW	HS	CR

CLIENT

EXTRA MOTORWAY SERVICE AREA GROUP

PROJECT

WARRINGTON MOTORWAY SERVICE AREA,
J11 M62

DRAWING TITLE

FIGURE 10.5
INDICATIVE PEAT DEPTH AND SITE LAYOUT

DRG No.	REV
SH11739/034	C

DRG SIZE	SCALE	DATE
A3	1:2,500	22/08/2019

DRAWN BY	CHECKED BY	APPROVED BY
SW	HS	CR

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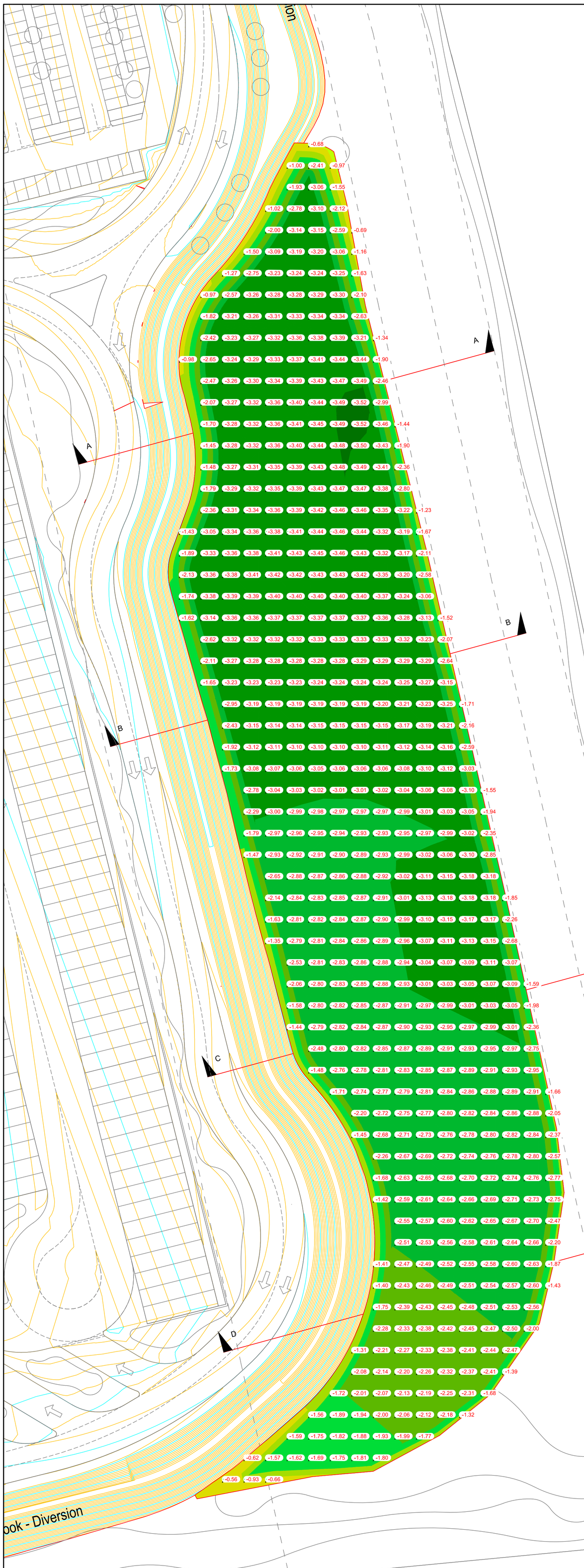
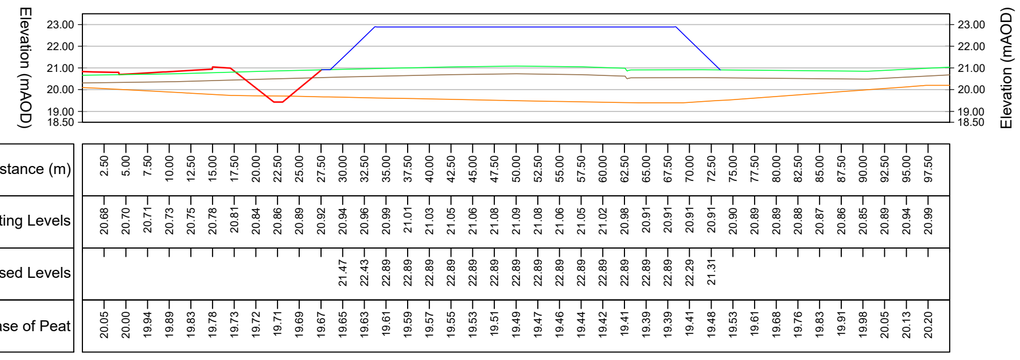
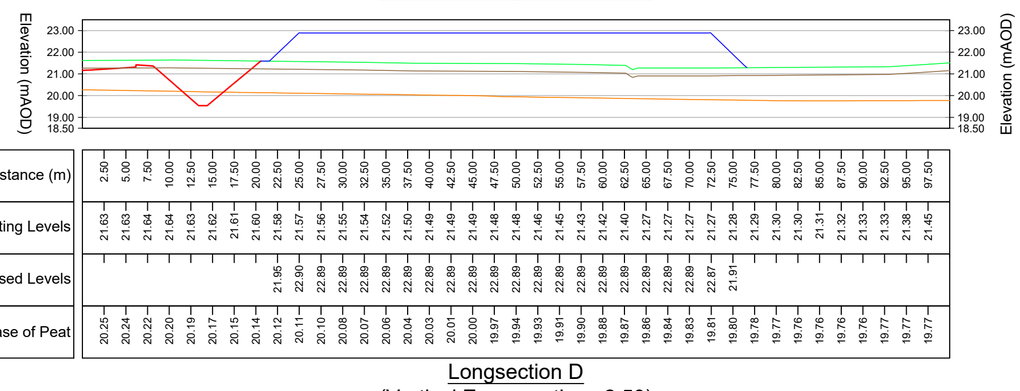


Longsection A
(Vertical Exaggeration x2.50)

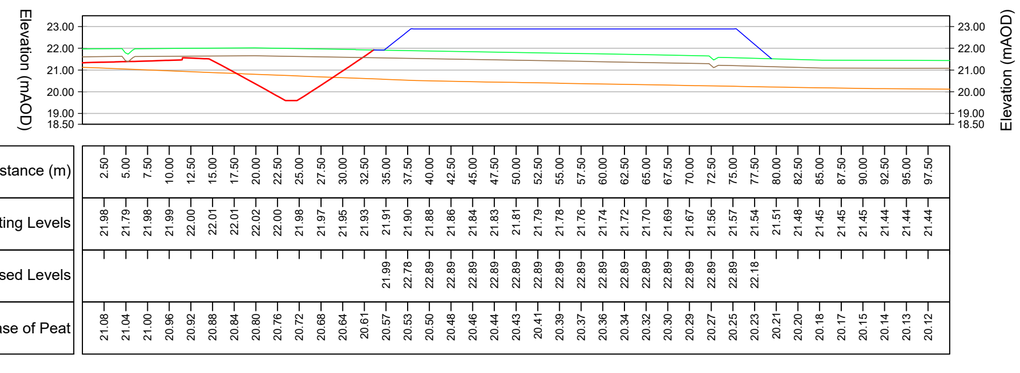


Longsection B
(Vertical Exaggeration x2.50)

Longsection C
(Vertical Exaggeration x2.50)



Longsection D
(Vertical Exaggeration x2.50)



KEY:

- EXISTING PROFILE
- TOPSOIL STRIP LEVEL (360mm DEPTH)
- BASE OF PEAT / TOP OF NATURAL CLAY
- PROPOSED SITE LEVELS
- CLAY BUND / TOP OF PEAT LEVEL

NOTES:

1. DRAWING IS FOR PLANNING PURPOSES ONLY.
2. CLAY BUND STRUCTURE SUBJECT TO DETAILED DESIGN.
3. TOP OF PEAT LEVEL SUBJECT TO AGREEMENT, LEVEL SHOWN AT 22.9m AOD.
4. BUND TO BE 1 IN 2.5 GRADE MAX.
5. FOUNDATION FOR BUND SUBJECT TO CONFIRMATION AND DETAILED DESIGN.
6. ELEVATIONS SHOWN ARE BETWEEN BASE OF PEAT/TOP OF NATURAL CLAY LEVEL AND 22.9m AOD LEVEL.
7. TOTAL DEPTHS INCLUDE IN SITU PEAT AND PEAT TRANSFERRED FROM DEVELOPMENT AREA.
8. PEAT DATA CALCULATED FROM PEAT SURVEY UNDERTAKEN BY WARDELL ARMSTRONG IN JANUARY 2019.

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D

CLIENT

EXTRA MSA GROUP

PROJECT

MOTORWAY SERICES, WARRINGTON

DRAWING TITLE

INDICATIVE PEAT DEPTHS
WITH PEAT HABITAT ZONE

DRG No.	REV
SH11739-006	-

DRG SIZE	SCALE	DATE
A1	1:500	23.07.19

DRAWN BY	CHECKED BY	APPROVED BY
AS	HS	JS

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N:\SH\SH11739 - MOTORWAY SERVICES, WARRINGTON\03 - DESIGN\AUTOCAD\SH11739-006 - OVERALL PEAT DEPTHS & TYPICAL SECTIONS.DWG

ES Part 1 Appendix 11

DO NOT SCALE FROM THIS DRAWING

REFERENCE

- SITE BOUNDARY
- TOP OF SLOPE
- BOTTOM OF SLOPE
- EDGE OF TRACK
- EDGE OF PAVING
- ROAD CHANNEL
- STOCKPROOF FENCE
- POST & RAIL FENCE
- PALLISADE FENCE
- BARRIER
- GATE
- EDGE OF SCRUB/TREE COVER
- INDIVIDUAL TREES
- BOLLARD
- BOREHOLE
- ELECTRICITY POST
- GAS MARKER
- MANHOLE
- ROAD GULLEY
- TELECOM COVER
- LAMP POST
- SIGN POST
- SPOT LEVELS
- WATER LEVELS

NOTE

SITE SURVEYED BY GPS (OSTN15) & LEVELS SHOWN ARE IN METRES AOD.

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT

WARINGTON MSA
J11 M62 MOTORWAY

PROJECT

POTENTIAL WARRINGTON MSA

DRAWING TITLE

TOPOGRAPHICAL SURVEY
AS AT 19TH JANUARY 2019
PLAN 1

DRG No.		REV
SH11739-019		A
DRG SIZE	SCALE	DATE
A0	1:500	21/01/19
DRAWN BY	CHECKED BY	APPROVED BY
SG	TH	AD

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DO NOT SCALE FROM THIS DRAWING

REFERENCE

- SITE BOUNDARY
- TOP OF SLOPE
- BOTTOM OF SLOPE
- EDGE OF TRACK
- EDGE OF PAVING
- ROAD CHANNEL
- STOCKPROOF FENCE
- POST & RAIL FENCE
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- TELECOM COVER
- LAMP POST
- SIGN POST
- SPOT LEVELS
- WATER LEVELS

NOTE

SITE SURVEYED BY GPS (OSTN15) & LEVELS
SHOWN ARE IN METRES AOD.

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT

WARINGTON MSA
J11 M62 MOTORWAY

PROJECT

POTENTIAL WARRINGTON MSA

DRAWING TITLE

TOPOGRAPHICAL SURVEY
AS AT 19TH JANUARY 2019
PLAN 2

DRG No.	SH11739-019	REV	A
DRG SIZE	A0	SCALE	1:500
DATE	21/01/19		
DRAWN BY	SG	CHECKED BY	TH
APPROVED BY	AD		

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ES Part 1 Appendix 12

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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

EXTRA MSA GROUP

Warrington Motorway Service Area, J11 M62

Framework Construction Environmental Management Plan

August 2019

wardell armstrong

Wardell Armstrong
36 Park Row Leeds, LS1 5JL, United Kingdom
Telephone: +44 (0)113 831 5533 www.wardell-armstrong.com

DATE ISSUED:	August 2019
JOB NUMBER:	**SH11739**
REPORT NUMBER:	**0001**
VERSION:	**V0.1**
STATUS:	

EXTRA MSA GROUP

Warrington Motorway Service Area, J11 M62

Framework Construction Environmental Management Plan

August 2019

PREPARED BY:

Helen Simpson Associate Director

APPROVED BY:

Andy Dunhill Director

CONTENTS

1 INTRODUCTION

1.1 Background

1.1.1 This document is the Framework Construction Environmental Management Plan (CEMP) for the proposed new Motorway Service Area (MSA) to the north of Junction 11 of the M62, on the north-eastern edge of Warrington, in Cheshire (the Proposed Development).

1.1.2 Wardell Armstrong has been commissioned by the client, the Extra MSA Group, to prepare this framework CEMP as part of the outline planning application for the Proposed Development.

1.2 Aims and objectives

1.2.1 The framework CEMP sets the framework within which the finalised, more detailed CEMP for the Site would be developed, in advance of works commencing on site and following receipt of planning permission.

1.2.2 The detailed CEMP will ensure that all environmental mitigation measures outlined within the consent are fully incorporated into the construction phase of the proposed development. It will be prepared in accordance with all relevant UK legislation and Regulations, environmental guidelines, approved Codes of Practice and industry standards and the general guidance provided in the CIRIA C741 'Environmental good practice on site guide'. 4th edition, 2015.

1.2.3 The detailed CEMP will include a Schedule of Environmental Legislation relevant to the Proposed Development and the site location / its baseline conditions. This will be maintained up to date for the duration of the construction works on Site.

1.2.4 This framework CEMP has been prepared based on the information available at the time of submission of the outline planning application. Once planning permission is granted, a number of detailed aspects of the Proposed Development will require to be finalised and the information used in that process will be expected to feed into the development of the finalised CEMP.

1.2.5 It is likely that the detailed investigations will form part of the conditions attached to the planning permission, that will require to be discharged prior to development commencing on site. Once these site investigations have been completed and the design of the site has been finalised, a detailed CEMP will be produced.

1.2.6 Following this, it is anticipated that the CEMP will be subject to approval by Warrington Borough Council (WBC) and any relevant statutory consultees.

1.2.7 The CEMP will remain an active document for the full duration of the construction period on Site and will be subject to review and updating where necessary. This will ensure that the construction operations of the Proposed Development meet all existing and emerging good industry practice standards, as well as reflecting any changes to conditions found on Site.

1.2.8 The Applicant and Principal Contractor will be responsible for updating the content of the future CEMP. The Applicant, together with all contractors and subcontractors, will be required to adhere to the CEMP in its final approved form.

1.3 Structure of this framework CEMP

1.3.1 This framework CEMP is structured as follows:

- Section 1 – introduction, aims and objectives, and structure of the CEMP.
- Section 2 – a description of the proposed development, key sensitive receptors and the anticipated programme for construction.
- Section 3 – sets out the roles and responsibilities of the various key personnel involved in the management of construction on the site.
- Section 4 – identifies the preliminary surveys and ground investigations anticipated as part of the development of the detailed design for the site, and their relevance to the environmental management of the construction activities on site.
- Section 5 – describes the general site operations anticipated and includes general working arrangements, health and safety, storage of oils and fuels, arrangements for concrete batching, silt traps and waste management.
- Section 6 – provides an outline of the construction activities that will take place on site and the management of these.
- Section 7 – addresses the anticipated need for environmental site management practices, using information from the Environmental Statement (ES) prepared for the site. Aspects addressed are: ecology; peat handling, storage and re-use on site; hydrology and hydrogeology; cultural heritage and archaeology; construction noise and vibration; and construction air quality.

- Section 8 – provides a summary of considerations to be given to monitoring, review and reporting procedures during construction, together with a suggested complaints procedure.

1.3.2 As part of the development of the detailed CEMP, a sensitive receptors figure will be prepared, showing the locations of the nearby residential properties, ecology sites and other sensitive features present within or close to the boundary of the Site. These sensitive receptors must be considered during the construction phase of the Proposed Development.

1.3.3 In addition, it will be relevant that the detailed CEMP is considered in conjunction with a number of other reports and management plans, either comprising part of the outline planning application or to be produced once consent is granted. These are identified below.

1.3.4 The finalised CEMP will be consistent with the aims and objectives of all the supporting reports and management plans for the project.

2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 The Site

2.1.1 The Site is located to the northeast of the urban area of Warrington, approximately 8.5km (5 miles) from the centre of Warrington. The centre of Manchester is located approximately 17.5km (11 miles) to the east of the Site and the centre of Liverpool, approximately 32 km (20 miles) to the west.

2.1.2 The Site is located to the north of the M62 Motorway at Junction 11, and has direct access to Junction 11 via a spur to the motorway junction roundabout (Birchwood Way). The M62 Motorway also provides access to the wider Strategic Road Network, with the M6 Motorway running north/south, approximately 4km (2.5 miles) to the west of the Site, and the M60 Motorway, which runs around Manchester, approximately 10km (6.1 miles) to the east of the Site.

2.1.3 Junction 11 of the M62 Motorway also provides access to the A574 Birchwood Way and the Birchwood area of Warrington, which is located to the south of the M62 Motorway corridor and consists of Birchwood Park (a business park) and beyond this, residential areas of Gorse Covert and Oakwood, which are suburbs to Warrington.

2.1.4 Immediately to the west of the Site is a former landfill site (Risley Landfill), where landfilling began in 1979, but which has now ceased, and the site restored and planted. There are a series of permissive footpath routes across the restored landfill site. To the east and north is arable farmland. A disused railway line crosses the farmland that is beyond the Site boundary, and arches to the east and north approximately 0.6km (0.4 miles) from the Site boundary.

2.1.5 To the east and north of the Application Site are agricultural fields. The settlement of Culcheth lies to the north west of the Site, with its centre approximately 2 km (1.2 miles) from the Site.

2.1.6 The planning application redline encompasses the M62 J11 Motorway Roundabout, spur from the roundabout and the main part of the Site. The main part of the Site relates to an area of land of approximately 15.41ha in extent, whilst the total land within the redline and therefore including highway works to M62 J11 Motorway Roundabout is 16.81ha

2.1.7 The agricultural land within the Site comprises a large arable field (11.58 ha). A small triangular area of rough grassland is present to the west of the Site (approximately 1.0 ha), this land previously formed part of a larger agricultural field, the majority of which

was incorporated into the Risley Landfill Site. The remnant field area was removed from agricultural use by the operation of the landfill site and is therefore considered to be non-agricultural. All other land within the Site is also non-agricultural comprising areas of restored landfill and hardstanding. The agricultural land is partially located over peat deposits, which are located predominantly to the south western section of the Site.

2.1.8 The site lies within the Liverpool, Manchester and West Yorkshire Green Belt (an extensive area covering all land not within settlements within this and the wider area). It lies at a lower level than the roundabout junction with the M62, but at a higher level than the motorway.

2.1.9 In the vicinity of the site, the motorway corridor and junction area are lit. There are trees to the eastern, and parts of the southern and south-western boundaries with a post and rail fence forming the southern site boundary. On the western boundary of the Site, the Silver Lane Brook (classed by the Environment Agency (EA) as a main river) extends into part of the site. The Site lies within Flood Risk Zone 1 (low risk of flooding).

2.1.10 Various public rights of way are present in the area of the site, including on the western site boundary. Part of the HS2 high speed rail network Safeguarded Land corridor arcs around the north-eastern corner of the Site, beyond the application boundary.

2.1.11 The M62 motorway corridor has a 50m buffer, Air Quality Management Area along its length in this area.

2.1.12 A high pressure National Grid Transmission gas pipeline runs from north to south through the eastern part of the Site, there is an 80ft (24.4m) easement above the pipeline in which no development can occur, and to which access by National Grid (for maintenance and survey) must be maintained. Consultation regarding the pipeline has also been undertaken with the Health and Safety Executive (HSE) to discuss the proposals and the extent of development that is acceptable under PADHI (planning advice for developments near hazardous installations). The HSE identified a 96 m buffer (HSE Inner Consultation Zone) from the location of the gas pipeline in which the placement of buildings and sensitive end-uses (e.g. the Facilities Building and overnight HGV parking areas) is prohibited. The Site has been designed in accordance with these restrictions.

2.1.13 The closest statutory ecological Site is Holcroft Moss (Special Area of Conservation (SAC) and Special Scientific Interest (SSSI)) which is c.890m from the Proposed Development to the west and is separated from it by the M62. Astley and Bedford Mosses (SAC and SSSI), and Risley Moss (SAC and SSSI) are (together with Holcroft Moss) components of the internationally designated Manchester Mosses SAC suite, which all lie more distant from the Proposed Development. Manchester Mosses SAC is designated for the presence of Annex 1 Habitats namely '*Degraded raised bogs still capable of natural regeneration'*. Non-statutory conservation Sites located within 2km of the Site are Pestfurlong Moss Local Wildlife Site (LWS) Gorse Covert Mounds LWS, Rixton Moss LWS and Silver Lane Risley LWS.

2.2 The Proposed Development

2.2.1 The outline planning application is for the development a Motorway Service Area (MSA) including a facilities building, a hotel (up to 100 beds), service yard, Fuel Filling Station, Electric Charging Station, pumping station(s) and substation(s), parking facilities for each category of vehicle as well as access and internal circulation roads. The Site will include structured and natural landscaping with outdoor amenity space / picnic area and dog walking zone, pedestrian and cycle links, boundary fencing, surface water drainage areas and ecological mitigation.

2.2.2 There will also be retaining structures, associated infrastructure / services and earthworks, including those associated with the diversion of Silver Lane Brook and retention of peat within the Peat Habitat Zone. The existing public right of way to the west of the Site is also to be diverted.

2.2.3 The outline planning application has determined a range of parameters to be applied to the various aspects of the Proposed Development, relating to maximum building heights and tolerances associated with changes to existing ground levels. These will be subject to detailed design at the reserved matters stage.

2.3 Key sensitive receptors

2.3.1 The key sensitive receptors present within and in the areas closest to the Site are identified as:

- Manchester Mosses SAC and Pestfurlong Moss LWS;
- breeding and wintering bird assemblages present on or in the vicinity of the site;
- bats using the site for foraging and commuting;

- the Silver Lane Brook (an EA main river);
- the public footpath on the western edge of the site;
- the high pressure gas pipeline in the eastern part of the site;
- the former area of landfill;
- areas of peat deposits within the Site;
- residential properties at Franks Farm, 500m to the north of the site and off Inglewood Close, some 300m to the south of the site;
- the grade II* listed Holcroft Hall, 1.5km to the north of the site; and
- the former Pestfurlong Moss farmstead (archaeological remains).

2.3.2 The detailed CEMP will have regard for these and any other key sensitive receptors that may be identified in the period leading up to commencement of construction.

2.4 Development programme

2.4.1 It is anticipated that all planning permissions (outline and reserved matters) and subsequent discharge of associated planning conditions could be achieved to allow construction operations to commence on Site in Quarter 4 2021. Based on similar MSA developments completed by Extra MSA Group construction is anticipated to take approximately 12 months, opening to the public in Q4 2022.

2.4.2 The general sequence of construction activities on the Site is anticipated to be as follows (with many tasks undertaken concurrently, to minimise the duration of the construction programme):

- complete all pre-construction surveys including further ground investigations and any other assessments required by planning conditions;
- finalise and agree the detailed CEMP with the local planning authority and all relevant statutory consultees;
- commence topsoil strip;
- establish the construction site access (including any improvements required to the local road network);
- securely enclose the construction works area and establish the temporary construction compound on site;
- import to the site all necessary aggregate and other construction materials;

- installation of the retaining structure required for the protection of the gas pipeline;
- installation of the retaining structure of the Peat Habitat Zone, commencement of direct transfer of Peat from the development area and creation of peatland type habitats;
- undertake the diversion of the tributary of the Silver Lane Brook (an EA main river);
- construction of the main access into the Site, including embankments to the access road, topsoil stripping and associated earthworks to establish the development platforms required for the buildings and parking areas, fuel filling station and so on;
- install the buildings, internal roads and car parking areas, fuel filling station, lighting, infrastructure and utilities and other features of the proposed MSA including hard and soft landscaping; and
- once the development is fully installed, reinstate all disturbed areas, remove the temporary construction compounds and clear the site so that it is fit for operation as a Motorway Service Area.

3 PROJECT IMPLEMENTATION FRAMEWORK

3.1 Introduction

3.1.1 This section of the CEMP discusses the implementation framework for the Project and provides the organisation structure for the construction phase of the Project along with roles and responsibilities. Procedures relating to liaison and communication with other contractors are also provided in this section.

3.2 Implementation Framework

3.2.1 The Proposed Development will be owned and operated by EXTRA MSA GROUP. The Principal Contractor has yet to be appointed, but will also likely undertake the role of Principle Designer under the CDM Regulations, 2015.

3.3 Project and Site Level Organisation Structure

3.3.1 Establishing roles and responsibilities is important to ensure the successful construction of the Proposed Development, including the implementation of the CEMP. The organisational structure of the project environmental team will be presented in the detailed CEMP (organogram or similar). It is noted that, for instance

during periods of annual leave, roles and responsibilities will pass to a nominated representative, to be appointed at that time.

3.4 Roles and responsibilities

3.4.1 There are a number of roles that will be involved in the construction of the Proposed Development, all of which will be responsible for ensuring the CEMP is complied with, where this is applicable to their relevant area of the construction process. These include:

- Project Manager;
- Principal Contractor's Site Manager;
- Ecological Clerk of Works (ECoW);
- Construction Design and Management co-ordinator; and
- other roles associated with specialist technical elements of the proposed development.

3.4.2 The responsibilities of each of the above roles is addressed in more detail in the following paragraphs. It is noted that in the detailed CEMP the titles assigned to each of these roles may change according to the structure of the project team; however, the responsibilities and clear designation of these responsibilities to an assigned/named person (or nominated representative in times of absence) will remain.

Project Manager

3.4.3 The Applicant's appointed Project Manager will be responsible for ensuring that all measures contained with the CEMP are appropriately implemented and that all staff and contractors adhere to the practices set out within it. In particular, the Project Manager will be responsible for:

- Ensuring the requirements of the CEMP are fully implemented across all relevant areas of the construction process.
- Ensuring contractors are aware of the key environmental constraints within and adjacent to the Site. For example, the close proximity of the landfill site to the west, the diversion of Silver Lane Brook; the movement and management of peat resources; and presence of important natural heritage sites within the wider area.
- Ensuring compliance with the CDM Regulations 2015.
- Appointing a qualified and competent Principal Contractor to build the works.

- Establishing roles and responsibilities in advance of the construction phase, including the requirements for any environmental specialist roles which may be required (i.e. hydrologist, archaeologist, geotechnical engineer and environmental health specialist).
- Ensuring that qualified specialists are in place within the Principal Contractor's team to undertake environmental monitoring and reviewing of construction methods and required mitigation measures.
- Working alongside the Principal Contractor to review the CEMP as required throughout the construction period to take account of emerging good industry practice and on-site conditions.

Principal Contractor's Site Manager

3.4.4 The construction works for the Proposed Development would fall under the CDM Regulations 2015. As such, the Principal Contractor will provide a Health & Safety Construction Plan in accordance with the CDM Regulations. This plan will include, and not be limited to a construction programme, emergency procedures, site layouts and fire plans, method statements and details of the proposed site induction programme.

3.4.5 The Principal Contractor will be responsible for the civil works of the Proposed Development, i.e. internal and any external roads, building foundations, hardstanding areas, watercourse diversion, protection of the gas pipeline and so on. The Principal Contractor will formally appoint a Site Manager prior to the construction works commencing on Site. The Site Manager will be responsible for the day-to-day management of the Site, including ensuring environmental responsibilities are discharged and will report to the Project Manager. The duties of the Site Manager will include:

- Implement pre-construction surveys.
- Ensure detailed Construction Method Statements are prepared for individual areas of work.
- Carry out safety, health and environmental risk assessments for the construction works prior to commencement of construction activities.
- Prepare a programme of works, including those of sub-contractors for review and comment by the appropriate authorities and the Project Manager. This will take account of sensitive work activities, potential weather delay periods and ecological, habitat and species protection requirements.

- Work with the Ecological Clerk of Works to inspect all operations to ensure that all potential ecological, hydrological, geotechnical and archaeological constraints have been identified, and/or mitigated for prior to the onset of construction in that area.
- Ensure construction of the proposed scheme will proceed in accordance with the approved Plan, unless otherwise agreed in writing.
- The Principal Contractor will also be responsible for liaising with and obtaining all relevant consents, licenses, authorisation and permits required for the construction at the site.

Ecological Clerk of Works/Project Ecologist

3.4.6 Prior to construction commencing, an appropriately qualified Ecological Clerk of Works (ECoW) will be appointed. The ECoW will be responsible for ensuring that the ecological mitigation measures are implemented, and that the construction works do not result in adverse effects on the environment. The Project ECoW will be suitably qualified and will report to the Site Manager. The ECoW will oversee the works and will be supported by appropriately experienced and licensed specialists where required, and will call upon assistants during busy periods. For instance, the placement of peat into the Peat Habitat Zone will be monitored by a soil scientist.

3.4.7 Prior to any intrusive ground investigations and all subsequent construction stages, the ECoW will provide ecological training and raise the awareness of the construction staff about site specific ecological issues through induction procedures. The construction work programme will be informed by bird breeding season and will be designed to avoid periods of high sensitivity for protected species where practical. The ECoW will also ensure that opportunities to avoid sensitive habitats during construction are identified and taken into consideration.

3.4.8 The ECoW will be responsible for the implementation of the Habitat Management Plan (HMP) during the construction period and restoration period, and the ecological requirements of the CEMP.

3.4.9 The ECoW will monitor compliance with the CEMP and will report any breaches to the Project Manager who will have the authority to recommend stopping works and undertake remedial actions, if necessary, to prevent or limit environmental damage. Duties of the ECoW will include:

- Ensuring that the proposed mitigation is implemented.

- Monitoring of all construction, pollution prevention and mitigation activities.
- Maintenance of the Environmental Register which details issues identified by the ECoW, noting the advice provided and the steps taken on site to resolve these issues.
- Integration of construction activities with the Soils and Peat Management Plan (SPMP), in particular in relation to the placement of peat.
- Micro-siting works to minimise effects on peat within the Site.
- Checking surveys at an appropriate time of year prior to the commencement of physical works on Site, to ensure that any legally protected species and their resting places are protected from construction damage and/or disturbance.
- Pre-construction site surveys to identify any protected bird species breeding on site, if construction activities start on site during the bird breeding season (March until August), followed by the development and agreement of suitable measures with Natural England to avoid harm to individuals and their young or disturbance at nest sites. However, the currently proposed phasing would allow for the removal of all suitable breeding bird habitat from within development areas at the start of the construction period (Q4 2021) which is outside of breeding bird season.

CDM Co-ordinator

3.4.10 The construction works will fall under the Construction Design and Management (CDM) Regulations 2015. A CDM Co-ordinator will be appointed who will produce a pre-construction safety information pack in accordance with CDM regulations. This plan will detail the development construction programme, emergency procedures, site layout, fire plans, method statements and details of the proposed induction training programme.

Other Roles

3.4.11 The Applicant may retain a Site Environmental Representative who will liaise with the Project Manager.

3.4.12 Prior to the commencement of construction, the Principal Contractor will produce specific Contractors' Method Statements (CMS) for the Works. The CMS will be in addition to the CEMP and will be reviewed, amended and agreed by the Project Manager and the ECoW (and/or other suitable technical specialist depending on the nature of the works covered by the CMS) to ensure that all practices comply with this CEMP and good environmental practice.

3.5 Training and Awareness

3.5.1 The Principal Contractor will develop an environmental communication and training plan prior to physical works. It will include requirements for all employees, sub-contractors, suppliers and other visitors to be trained at induction on the Environmental Plans and will promote environmental awareness throughout the project.

3.5.2 As a minimum, the following topics included in the induction are:

- Waste management.
- Ecology (including species and/or habitat protection).
- De-watering of excavations.
- Working in or near watercourses.
- Surface water and groundwater pollution and control.
- Sediment and dust management.
- Noise and dust management.
- Archaeology.
- Soil and Peat management including ground stability as well as stripping and storage.
- Environmental incident and emergency response procedures (see page 64)
- Reinstatement techniques.

3.5.3 An 'environmental risk map', showing all sensitive areas, exclusion zones, wash out areas, watercourses, refuelling locations and waste management facilities will be produced prior to construction and displayed on the site notice boards. The map will remain live and will be updated throughout the project and re-issued as required.

3.5.4 Appropriate personnel (such as site foremen and machine operators) are to receive environmental training in order to ensure project work is carried out with due regard to environmental protection and to minimise on environmental impact of the project. Training and awareness raising will include:

- Briefing staff on the Plans through presentations.
- Site Induction environmental element to include ecology, surface water, and groundwater and soil management.
- Toolbox talks on site specific issues (further details provided below).

- Method Statements are to include environmental elements including (as appropriate) surface water management (including appropriate sediment control methods), task specific risk assessments, acceptable frost precaution, bio-security and reinstatement methods.
- Pollution prevention training to include practical element for site-based staff (including the practical use of spill kits, and training on the consideration and selection of appropriate sediment mitigation installation).
- Emergency training to include fire prevention techniques particularly for land cable operators.

3.6 Tool Box Training Topics and Training

3.6.1 In order to provide on-going reinforcement and awareness training, the topics listed above, along with any other environmental issues which arise on site, will be discussed at regular Tool Box Talks. Tool Box Talks will be site specific where required. A schedule of Tool Box Talks will be maintained by the Site Manager.

3.6.2 Toolbox talks and training will be delivered by the Principle Contractor, or on their behalf by a subcontractor, by specialist personnel on site as required, and in liaison with the project team.

3.6.3 The proposed Tool Box Talk schedule is to be considered as a live document and will be coordinated with the programme of works. Additional Tool Box Talks will be added as required based on circumstances such as unforeseen risks, repeated observation of bad practices, perceived lack of awareness, pollution event, etc.

3.6.4 Where these circumstances do not arise, Tool Box Talks will be delivered based on time elapsed since the topic was last covered. Specialist or targeted Tool Box Talks may also be delivered to specific personnel depending upon works being undertaken and personnel responsibilities.

3.6.5 A record of all Tool Box Talks and attendees will be maintained and recorded.

4 COMMUNICATIONS

4.1 Communications-General

4.1.1 Environmental issues will be communicated to all relevant parties by means including:

- Environmental Policy Statement (to be displayed on site notice board).
- Project Environmental Plan (including site specific EMP's) and Site Waste and Material Management Plan.
- Key environmental constraints maps, including exclusion zones to be displayed on site notice boards (Whilst maintaining confidentiality of sensitive species and/or landowner requirements).
- RAMS (risk assessments and method statements).
- Site Coordination Meetings.
- Management Review Meetings.
- Environmental briefings and Tool Box Talks (including the presentation of a weekly environmental log that includes a look ahead to the activities required in the following week and the specific mitigation required).
- Site induction and training sessions.
- Audits
- Consultation with Local Authorities and other regulatory bodies.
- Advance notification to residents advising of project works.
- Project Enquiry/Complaints line to be set up and managed by the Applicant's Project manager or nominated representative.

4.2 Communication between Contractors

4.2.1 Should there be more than one contractor on site; the weekly site meetings convened by the Principle Contractor's Site Manager or his nominated representative will serve as the focal point for formal communication between all parties working on the site, however daily communication may be required and will be requested as necessary. All meetings will be minuted, will include attendance records and will be distributed to the relevant personnel as required. Further details on the meetings are provided in the following paragraphs.

4.2.2 The weekly site meetings will allow contractors to communicate, discuss and consult any change in conditions, working practices, health, safety and environmental

arrangements, procedures and overall environmental performance. The meetings will include any near misses or hazards that have been identified and any residual risks that have been identified in conjunction with the implemented environmental protection measures.

4.2.3 Each contractor will nominate a person(s) to attend these meetings with the appropriate authority to act on those contractors' behalf.

4.2.4 Weekly Site co-ordination meetings will be held in all work areas where more than one construction team is working. The meetings will allow appointed team members to debate their proposed work programme for the following week, with particular attention to any plant movements or deliveries. Notes of this meeting will be circulated to all attendees within 24 hours of the meeting's completion to ensure the maximum protection to the local environment by allowing appropriate protection measures to be put in place.

4.2.5 These will be augmented by additional meetings at intervals dictated by the requirements of the contract or at key stages of the works. Minutes of all such meetings will be produced and held on file for record purposes, with copies supplied to each (sub)contractor. The Project Manager, will ensure that lessons learnt are communicated across the project to ensure best practice.

4.2.6 Contractors are required to maintain records of all staff that have undergone training and have been given Tool Box Talks as part of their site induction.

4.3 External Communication

4.3.1 The Principle Contractor will support Extra MSA Group at all public relations and community liaison activities, including local community meetings.

4.3.2 A notice board will be erected at the site compound to provide basic project details and key contact numbers to members of the public.

5 INSPECTIONS, DOCUMENT CONTROL AND REPORTING

5.1 Audits and Inspections

5.1.1 In addition to audits carried out by Extra MSA Group, the Principle Contractor will implement its own programme of audit and inspections to check that site operations are in compliance with this CEMP, current procedures and legislation, and are using Best Practice. Inspections will provide a measure of performance towards achieving the project objectives & targets (which are to be determined within the detailed CEMP). Daily site inspections will be carried out by the Site Manager and by the ECoW when on site.

5.1.2 The Principle Contractor should undertake a detailed site inspection every 30 days which reviews the project against the CEMP. The findings will be communicated to key members of the Principle Contractor's project team and Extra MSA Group.

5.2 Monthly Reporting

5.2.1 The monthly report shall include the following information:

- Number of Environmental Incidents and near misses.
- Number of environmental Tool Box Talks.

5.3 Records

5.3.1 The following records will be maintained to demonstrate conformance to this Plan:

- Induction and training records.
- Site inspection reports.
- Incident Reports.
- Supplier and contractor records.
- Drainage consents.
- Licences.
- Superseded copies of Environmental Plans.
- Document Control.

5.3.2 A Document Management System will be used to process and manage documents associated with the project. The Document Management System will process documents throughout their life cycle from inception through creation, review, storage and distribution, archival or destruction.

5.4 Approval and Review of Plan

5.4.1 The plan shall be subject to continuous assessment and development throughout the course of the project as necessary to reflect recommendations arising from incidents, changes to legislation, changes to the scope or nature of work, or other significant developments having impact on environmental issues. As a minimum the plan shall be formally reviewed every six months by the Principle Contractor project team and/or in consultation with their appointed Environmental Consultants and within one week following a high potential environmental incident.

5.4.2 This CEMP and Appendices shall be held on site in a filing system and maintained by the Site Manager.

5.4.3 The outline Plan has been prepared by Extra MSA Group, but the detailed CEMP will be reviewed/amended and approved in the first instance by the principle contractor then be submitted to Extra MSA Group for final review and approval.

6 PRE-CONSTRUCTION SURVEYS AND GROUND INVESTIGATION

6.1 Introduction

6.1.1 This section of the framework CEMP considers the **surveys and ground investigations to be carried out in advance of construction activities starting on Site** and after development consent has been obtained. These surveys will contribute to the detailed design of the Proposed Development, and to the identification of any additional environmental controls that will require to be considered during construction (and added to the detailed CEMP).

6.1.2 Information set out in section 7 below also is also relevant to the discussion in the following sections.

6.2 Ecology surveys

6.2.1 An Extended Phase 1 Habitat Survey (EP1HS) was undertaken on 31st October 2018 to recording the broad habitat types present on Site. The survey recorded no habitats of intrinsic ecological value. The survey and desk based ecological records data were then used to undertake a Preliminary Ecological Appraisal for the site which identified the following species receptors as requiring further detailed (species specific) survey.

- Protected species (Great Crested Newt, Bats, Badger, Water Vole, Reptiles);
- Barn Owl; and
- Breeding and Wintering birds.

6.2.2 These detailed surveys identified a requirement for additional pre-construction surveys to be completed, as described below.

Breeding birds

6.2.3 During the breeding bird survey (BBS) undertaken in March to June 2019, a total of forty-two species were recorded on site across all survey visits. Only Meadow pipit, willow warbler, reed bunting, skylark, song thrush, lapwing and dunnock were considered to be breeding on Site. However, the preferred nesting habitats of these species represent the majority of habitats on site – reedbed, scrub, tree, hedgerow and ground nesting.

6.2.4 The currently proposed phasing of the construction period (Section 2.4) would see construction commence in Q4 2021 (October to December) and hence allow for initial site clearance works (removal of all suitable breeding bird habitat within the development area) to be undertaken outside of the usual bird breeding season (normally taken to be March – July inclusive) in line with good practice guidance. If such timescales cannot be accommodated (i.e. if site clearance cannot be completed prior to breeding bird season), a check for the presence of active nests, and nesting birds would be undertaken by a suitably qualified ecologist prior to the commencement of works. Any active nests would be identified and protected (for example suitable disturbance-free buffer zones created) subject to the relevant legal provisions until the nesting attempt is complete.

Great Crested Newt (GCN)

6.2.5 Eleven waterbodies located either within the Site or within a 500m radius of the Site were subject to eDNA testing (to DEFRA guidelines) on the 15th April 2019 and 3rd May 2019 (within the optimum period for waterbody surveys to determine GCN presence / absence). All results were negative for the presence of Great Crested Newt (GCN) DNA showing GCN were absent from all waterbodies at the time of survey. Therefore, no further surveys were undertaken in 2019.

6.2.6 However, a single GCN was recorded terrestrially during a reptile survey on 21st May 2019. This incidental record of a lone individual does not indicate the presence of a breeding population, which if present would have been recorded by the presence of eDNA in the waterbodies. As there are no ponds within the site itself and very limited potential terrestrial habitat for this species, no adverse effects to this species are anticipated. However, as a precautionary measure, further eDNA sampling of the

waterbodies will be undertaken prior to the onset of construction and licensing considerations provided in the event that a positive survey result is received.

6.2.7 The eDNA sampling will be undertaken in the period 15 April and 30 June 2021 following the same field sampling protocols as used in 2019 and outline below:

6.2.8 The surveyor will wear gloves (fresh pair at each waterbody) to prevent transfer of DNA between locations. Twenty number 30 ml sub-samples will be taken from each waterbody. Sample locations will be evenly spaced around the waterbody margin and where possible, and targeted towards areas of habitat most suitable for GCN (e.g. where there is vegetation suitable for egg laying).

6.2.9 All 20 subsamples will be placed into a sterile Whirl-Pak plastic bag. The bag will be closed securely and shaken for 10 seconds.

6.2.10 With a fresh pair of gloves on the surveyor will extract 15ml of water from the Whirl-Pak bag using a sterile syringe and place it into a sterile tube containing 35ml of ethanol to preserve the eDNA samples. The tubes will be closed and shaken for 10 seconds to mix the samples and the preservatives. This will be repeated six times to obtain six subsamples per waterbody. All samples will be labelled with the relevant eDNA testing kit reference and unique waterbody identifier reference / number. The remaining water within the Whirl-Pak bag will be tipped back into the waterbody.

6.2.11 Details of the 2021 surveys will be provided in the detailed CEMP. The detailed CEMP will also describe licensing requirements and any additional mitigation requirements in the event that a positive survey result is obtained.

Water vole

6.2.12 Pre-construction surveys of the proposed culverted section of Silver Lane Brook are required in order to ensure the baseline assessment for water vole remain accurate. Any modifications to the baseline assessments will be described and precautionary measures, such as translocation or habitat manipulation and hence avoiding impacts (including appropriate buffers) will be included within the detailed CEMP and subject to the necessary prior consents.

6.2.13 Based on the currently proposed construction programme the two pre-construction survey visits will be undertaken in the period mid-April to late September 2021 to cover the period when water vole are most active.

6.2.14 The surveys will be undertaken in accordance with the Water Vole Conservation

Handbook (Strachan & Moorhouse, 2006) with modifications to suit the conditions of the site, if required. The brook habitats will be systematically surveyed for evidence of water vole in the form of:

- faeces: water vole usually deposit faeces (latrine) in concentrations along the waters bank of which (latrine sites) are typically found at home-range boundaries where females mark territories during the breeding season;
- burrows: comprising either single isolated holes or a series of holes slightly above the water's edge or under water surface known as bolt holes;
- tracks: form as water vole leave burrows either to the water or bank tops leading to lawns;
- feeding stations: form and consist of cut vegetation usually on a 45°-degree angle and often stems are stripped leaving behind white flesh piles;
- footprints; prints are usually about 15-25mm from toe to heel, often evident in soft muddy substrate along water's edge or banking and outside burrows; and
- visual observation of water vole during the survey.

6.2.15 Latrines are indicators of terrestrial behaviour, which in turn generally correlates with breeding activity. It is therefore considered that watercourses/bodies which display latrines, burrows and feeding signs form breeding sites for water voles.

6.2.16 Should water voles be identified following survey, detailed methodologies for the most site-appropriate mitigation (displacement or trapping and translocation) and Natural England protected species licencing requirements would be set out in the detailed CEMP.

Pre-construction ecological checking survey

6.2.17 In addition to the species specific pre-construction surveys outlined above, a pre-construction ecological checking survey will be conducted. This site walkover will be undertaken by a suitably qualified ecologist to identify any changes to the ecological baseline, for example evidence of species not recorded in 2018 / 2019 (for example badger) now using the Site; or the introduction of new, or further spread of currently identified, invasive species. Such changes along with appropriate mitigation measures, where required, would be described in the detailed CEMP.

6.3 Ground investigations

6.3.1 A preliminary site investigation (SI) was completed in December 2018 to identify,

describe, and broadly delineate the peat deposits present at the site. In addition, the SI aimed to provide preliminary geotechnical information to inform design of the Proposed Development. Further site investigation (SI) works will be undertaken to inform the detailed design.

6.3.2 One of the aims of this SI will be to establish the depth of the Till (clay) that underlies the Site and in particular in the area underlaying the proposed refuelling station and underground fuel storage tanks. The SI would also aim to confirm the elevation and degree of confinement of the Helsby Sandstone Formation aquifer. The results of the SI would be used to determine if any bespoke mitigation, above general pollution prevention measures and best practise design, is required at the detailed design phase to protect the Helsby Sandstone Formation aquifer.

6.3.3 The findings of the SI will also be important in determining issues such as how the building foundations are to be designed and engineered.

6.3.4 Ground gas monitoring has not yet been completed for the Site, this will be completed as part of pre-construction survey works and a gas assessment will be completed to determine the risk to future occupiers.

6.3.5 The design of the SI and ground gas monitoring will be agreed with WBC and will be set out in the detailed CEMP.

6.4 Archaeological investigations

6.4.1 There may be a requirement for pre-commencement archaeological site investigations in order to satisfy any requirements of conditions imposed as part of the planning consent for the Site. As also noted in section 7.6 below, this could involve sectioning of a former estate boundary between the Pestfurlong and Holcroft estates; a programme of boreholes/from the peat deposits present within the Site; and an archaeological watching brief or strip, map and record (whichever is appropriate and agreed) of Pestfurlong Moss farmstead, potentially after a trial trench evaluation.

6.4.2 The sectioning of the former estate boundary would require a trench across the feature to evaluate and record the profile, depth and any buried deposits, if present.

6.4.3 The palaeoenvironmental sampling of the peat would involve placement of windowless boreholes as appropriate.

6.4.4 In the area of the former Pestfurlong Moss farmstead, it is possible that a trial trench evaluation would be required in the first instance in order to evaluate the presence/

absence of remains and if present, establish and characterise the remains. A trial trench evaluation would involve the stripping of soil under archaeological control at pre-commencement, until the natural geology or the first archaeological horizon is exposed. This would inform the necessity, scope and timing of further work (as agreed) which may include strip, map and record of the area undertaken pre-commencement, or an archaeological watching brief, undertaken during topsoil stripping.

6.4.5 A strip, map and record excavation is a programme of controlled, intrusive fieldwork under control of an archaeologist and is undertaken pre-commencement. It examines, records and interprets any archaeological deposits, features and structures found to be present and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area.

6.4.6 An archaeological watching brief is similar to a trial trench evaluation, although undertaken under supervision of an archaeologist during ground works.

6.4.7 In each case, the objective of the investigation would be to determine/ absence, character, survival and any specific aims as set out in a Written Scheme of Investigation (WSI). The scope and extent of such fieldwork would need to be agreed with the Local Planning Authority Archaeologist and would likely be secured through planning condition. Therefore, the specific agreed details of the required pre-commencement archaeological works will be set out in the detailed CEMP.

7 GENERAL SITE OPERATIONS

7.1 Introduction

7.1.1 The following sections outline the measures that will be implemented during the site construction operations in order to ensure the protection of the ecology and environment of the site area. This includes hours of working, construction compounds, movement of equipment and control of noise.

7.2 General working arrangements

7.2.1 Construction work will take place between 0700 and 1800 hrs Mondays to Fridays and 0700 and 1500 hours on Saturdays, with no working on Sundays or Bank Holidays unless agreed in advance with the local planning authority.

7.2.2 The ecological mitigation set out in Section 7.2 states that there will be no night-time

working in order to limit the disturbance of breeding and wintering bird populations and extant bat populations. However, should there be periods where night-time working is necessary, this will be agreed in advance with WBC.

7.2.3 Any other requirements for general site working, including those imposed by any planning conditions, or in relation to site security, will be identified prior to works commencing on site and included in the detailed CEMP where relevant.

7.3 Health and Safety

7.3.1 This section identifies how safety issues will be managed during the construction of the proposed MSA. It has regard for the safety policies already established for the Extra MSA Group.

7.3.2 All risks associated with the construction of the Proposed Development can be avoided, mitigated against, or safely managed through effective design, and the use of appropriate management systems and codes of conduct.

7.3.3 A wide range of legislation and guidance is available relating to the consideration of risks to health and safety, including at construction sites. The HSE (Health and Safety Executive) has published a range of information addressing this aspect.[1,2]

Implementation of Health and Safety legislation and guidance

7.3.4 Should the proposed development be consented, the Applicant would ensure that the appropriate resources are put in place so that health and safety legislation can be implemented. Guidance would be made available on site demonstrating this. The Extra MSA Group is committed to maintaining an excellent health and safety record and the safety of all site workers and the general public during the construction phase would be of paramount importance to achieving this. All guidance would be followed rigorously, and health and safety records maintained on site until all works are completed and the site is handed over to the operator.

7.3.5 A Quality, Health, Safety and Environmental (QHSE) Management policy would be put in place for the Proposed Development in advance of construction commencing. This would be aligned with the relevant standards such as OHSAS 18001:2007 and ISO 14001:2015. This would set out how the site is to be controlled and operated to protect the health and safety of the public and the workforce and to minimise impacts

[1] http://www.hse.gov.uk/construction/healthrisks/index.htm
[2] http://www.hse.gov.uk/construction/resources/guidance.htm

on the environment in and around the site. All work would be planned in advance and risk assessments carried out. The policy will cover training, the investigation of incidents and near-incidents, as well as active auditing and inspection to ensure that work is being carried out in accordance with the QHSE policy.

7.3.6 All subcontractors would be required to sign up to the QHSE policy, to ensure a consistency of standards applied across the whole of the project.

7.3.7 The development of this framework CEMP is focussed on environmental issues and would form an integral part of the overall QHSE policy and management system for the site.

Workforce and equipment safety during the construction phase

7.3.8 Daily "toolbox talks" would be carried out by the site manager or their designated (e.g. foreman) representative as part of the implementation of the QHSE policy and the site-specific CEMP and to alert the workforce to any hazards and changes to the site.

7.3.9 Personal Protective Equipment (PPE) would be worn at all times on site to further reduce risks and a comprehensive risk assessment would be undertaken by the site manager prior to construction commencing on site. The workforce would be checked for competence and trained on the site-specific procedures before starting work, and continually trained throughout the project. The project would fully comply with the Construction (Design and Management) Regulations 2015.

7.3.10 Welfare facilities such as toilets and a site office would be provided during the construction phase.

7.3.11 The proposed development may require some workers to occasionally have to work at a height. In all instances it will be a mandatory pre-requisite for the person involved in working at height to have been properly trained to work safely in these conditions. A comprehensive risk assessment will be carried out prior to any activity taking place at height. In all cases, suitable PPE will be worn, including harnesses and ropes where necessary, and any ropes and climbing equipment will be maintained in good working order and regularly checked.

7.3.12 In addition, a detailed Construction Transport Plan including a site speed limit of 15 mph will be produced in order to reduce risks associated with internal site road traffic.

Public safety

7.3.13 A public footpath follows the western boundary of the site, forming part of a circular route (the southern edge of which is a bridle path linking to an 'other route with public access' connecting to the A574 further to the west, and via an underpass beneath the M62, to Leacroft Road on the south side of the motorway) enclosing the disused landfill site and connecting with the roundabout at junction 11 of the M62. This circular route also connects with other footpaths further to the north, linking with New Hall industrial estate to the north-west and Franks Farm and the B5212 to the north.

7.3.14 Although the site would be secured to prevent public access, a duty of care would lie with the developer and appropriate action must be undertaken to protect anyone who does visit the site. This would include ensuring that all visitors to the site complete the site induction process and are made aware of any hazards present within the site area.

Fencing & Hoarding

7.3.15 Temporary means of enclosure and demarcation of the site operational boundaries will be erected prior to the commencement of construction activities. Barriers, platforms and hoardings will be erected, adapted, and maintained throughout the construction phase, to segregate the public from construction activity. Site hoarding will conform to current standards and erected to agreed heights and with the use of materials such as timber frames and be plywood faced with sufficient surface densities. All site hoarding will be painted on both faces in a plain uniform manner in order not to distract drivers on the adjacent M62.

7.3.16 A 24-hour contact number which the public may use will be displayed prominently on the site notice board and at suitable locations on the site hoardings.

Transport

7.3.17 A full Construction Transport Plan will be implemented both on and off site, to minimise risks associated with road traffic. Haulage routes to and from the site will be agreed with Highways England and the Local Authority, and all necessary consents and licences will be obtained prior to any work commencing.

7.3.18 A clear signage strategy will be implemented to ensure construction traffic utilises

designated routes, and HGV movements will be restricted as far as possible to minimise impacts to sensitive receptors. It is expected that most materials will be imported and exported via the M62, and all Contractor vehicle movement onto the site will do so by agreed routes.

Lighting

7.3.19 Works will only take place during standard hours as referred to in section 5.2, or if an emergency dictates that work needs to be carried out outside of these hours. Potentially, work will need to take place during hours of darkness or when natural light is insufficient. External floodlighting will be used during the construction phase in order that work can safely take place. Currently, the exact location of external floodlighting is not known and, following the appointment of the Principal Contractor, this information will be available in the detailed CEMP and/or their Health & Safety Plan. The design and location of floodlights that are deployed will be such that drivers on the M62 and other roads will not be affected by their use (see also section 9.2.8).

Pest control

7.3.20 Measures will be put in place to ensure that the risk of infestation by pests or vermin is minimised by through the timely disposal of food wastes or other material attractive to pests. If any infestation occurs the Site Manager (or nominated representative) will implement corrective measures / actions to deal with the infestation as required by Warrington Borough Council's Environmental Health Officer.

Emergency procedures

7.3.21 Procedures will be put in place to respond to any emergency incidents that may occur on site. All appropriate staff will be trained and made aware of any formal emergency plans, spill contingency plans, and health & safety plans that are in place. In the event of any emergency incident Warrington Council, the EA, and any other interested bodies will be notified as required by the above plans. These will be prepared by the Principal Contractor and detailed in the detailed CEMP.

Risk assessment and management

7.3.22 Prior to work commencing on site, the Principal Contractor will identify all safety, health and environmental risks associated with the construction phase of the development. Where these risks cannot be reduced to a low level, control measures will be put in place.

7.4 Storage of oils, fuels and chemicals

7.4.1 Storage location points must be identified on clearly displayed plans within the Site. In accordance with the COSHH Regulations, all containers must be clearly marked as to their contents. The relevant provisions of the Waste Management Licensing Regulations also apply to handling and storage of waste oil.

7.4.2 On-site storage of oil and fuels will be avoided if possible. Where on-site storage of oil and fuels is required, the volumes to be stored will be minimised as far as practical through efficient management of resource. Storage of oil, fuels, and chemicals is prohibited within 50 m of any body of water, including ditches and ponds, or surface water drain. Clearly defined areas for the storage of oil will be identified as part of the site establishment process. Issues to be considered when siting oil storage on site includes:

- Suitability of ground conditions e.g. can the area be protected against flood damage/inundation/subsidence.
- Proximity to sensitive environmental receptors such as surface waters, surface water drainage systems.
- Ease of access to proposed storage area for oil deliveries/refuelling.
- Ability to secure proposed oil storage areas (to prevent theft/vandalism).
- Ensure no fuel stores are sited where they could be hit by moving vehicles and plant.
- Ensure all site staff are aware of designated fuelling areas and also those areas where fuelling is not permitted.

7.4.3 Storage areas will:

- have an impermeable base in areas of groundwater risk;
- have control measures in place and have adequate spill kits easily accessible;
- be adequately signed/labelled; and
- be secured against damage/theft/vandalism.
- Spill kits will be located and maintained at all oil storage and refuelling locations.

7.4.4 Storage tanks must be:

- in good repair;
- fit for purpose;
- appropriate type and capacity for contents;
- be appropriately labelled identifying the contents; and
- they must comply with the requirements of Government guidance and the Control of Pollution (Oil Storage) (England) Regulations, 2001.

7.4.5 The bunded area will be cleared regularly to limit the build-up of residues and if necessary, waste will be disposed of via a specialised contractor. Drip trays and plant nappies DO NOT constitute bunding.

7.4.6 Mobile fuel tanks will be double skinned and locked when not in use, be of appropriate type and capacity for the contents and in good conditions, and be appropriately labelled identifying the contents.

7.4.7 The storage and handling of oils and fuels on site during construction will be undertaken in accordance with the following documents:

- APEA and Energy Institute: "Design, construction, modification, maintenance and decommissioning of filling stations" (known as the Blue Book), 4th edition, 2018;
- Pollution Prevention Guidelines (PPG) 1 General Guide to the Prevention of Pollution;
- PPG2 Above Ground Oil Storage;
- PPG4 Treatment & Disposal of Sewage where no Foul Sewer;
- PPG5 Works & Maintenance in, or near Water;
- PPG6 Working at Construction and Demolition Sites;
- PPG8 Safe Storage & Disposal of Used Oils;
- PPG10 Pollution Prevention Guidelines Highway Depots;
- PPG21 Polluting Incident Response Planning; and
- PPG22 Dealing with Spills.

7.4.8 It is acknowledged that all PPGs have been withdrawn by the Environment Agency (EA), as the legislative requirements contained within the documents are, in many cases, no longer correct; however, the PPGs are still considered to be a relevant and effective source of best practice information and are widely used and accepted within the construction industry.

7.4.9 Other guidance documents may be published by the Environment Agency in the future and any that are relevant to the construction activities at the MSA site will be incorporated into the detailed CEMP.

7.4.10 The use of biodegradable oils and lubricants will be considered where possible.

7.4.11 All oils, fuels and chemicals must be stored in bunded, or secondary containment, facilities in the compound area or on site. Drip trays and plant nappies DO NOT constitute bunding. Bunding or secondary containment, must:

- provide, for a single tank, at least 110% of the maximum storage capacity of the tank.
- provide, for two or more tanks in one secondary containment system, at least 110% of the biggest tank's maximum storage capacity, or 125% of the total maximum storage capacity of all the tanks, whichever is the greatest.
- be impermeable to water and oil.
- be intact and without openings or valves for drainage.
- any draw-off pipes and fill pipes that pass through the containment system must be adequately sealed.
- all valves, filters, sight gauges, vent pipes, and taps must be within the secondary containment, and so that any oil lost will be retained within it.
- any sight gauge must be supported and fitted with a valve that closes automatically when the gauge is not in use.
- fill and draw-off pipes must be located or protected so that they cannot be damaged by an impact or collision.
- all taps and valves fixed to the storage tank, through which oil can be discharged to the open, must be fitted with locks and locked shut when not in use.
- hoses to be fitted with trigger-type handles suspended back within the bund after use.
- valves and trigger filler handles to be kept padlocked when not in use.

7.4.12 Should rainwater ingress into the bund be such that there is insufficient capacity remaining to meet the storage volume requirements of the Oil Storage Regulations (see above) or should the bund be at risk of over topping (thereby creating a pathway for pollutants to reach ground) the water must be tankered away for disposal as hazardous waste (note the bund should never be allowed to reach this point).

7.4.13 For smaller storage/ spill prevention equipment such as spill containment pallets, bunded drum cradles etc., should these be full of rainwater to a level such that there is insufficient capacity remaining to meet the storage volume requirement, the water must be pumped (NOT TIPPED) to a suitable storage container clearly marked as being contaminated water from drip trays & Hazardous waste. This water must be stored in on or in a bund in the hazardous waste area and be disposed of as hazardous waste.

Drum storage

7.4.14 Where oil drums are over 200 litres in size, it will be ensured that:

- multiple drums and containers have suitable secondary containment with sufficient capacity to contain at least 25% of the total volume of the containers, or 110% of the largest container, whichever is the greatest;
- drum storage areas will be covered to prevent rainwater getting into bunds and drum pallets;
- drums will be labelled and positioned such that leaks cannot overshoot the bund or drip tray wall; and
- all containers are stored securely when the site is unattended.

Flammable and hazardous substances

7.4.15 All flammable and hazardous substances will be kept in a secure bunded cupboard, cabinet or tank constructed of materials that are chemically resistant to the contents.

7.4.16 Any oil or similar material will be cleaned immediately if spilled, using appropriate absorbent material to prevent it entering any local watercourse. Oil spill kits will be provided and training on their use given to all site personnel.

7.5 Operation and Refuelling of Plant and Equipment

7.5.1 Plant and equipment must be located and used on hard-standing and where practicable, away from any other body of water, including ditches and ponds, or surface water drains unless specifically carrying out project works on watercourses. Self-bunded plant must be specified and used where possible. Plant or equipment must not be stored / placed / parked directly over the site drainage system. 'No Parking' exclusions will be established.

7.5.2 Spill mitigation (drip trays and plant nappies) must be used for static plant including generators and compressors; and placed beneath mobile plant when parked or stored for any length of time, for example at break times or at the end of the working day.

The spill mitigation must also be in place during refuelling. Oil, oil powered pumps and generators must be positioned on spill mitigation surrounded by earth or sand bunds and located at least 10m from any watercourse (increasing to 50m where practical).

7.5.3 **Plant nappies will be used in preference to drip trays,** as they provide greater environmental protection than drip trays, are easier to use and manage and are less susceptible to damage. Plant nappies trap oils and fuels, but allow water to pass through, any oil residue that may have been picked up by the water is filtered out so only clean water is released. Drip trays must be monitored and emptied regularly with inspections being carried out daily during periods of wet weather. Drip trays must not be allowed to overflow. Monitoring of drip trays must be conducted following rainfall.

7.5.4 Should drip trays be at risk of over topping (thereby creating a pathway for pollutants to reach ground) the water must be pumped (NOT TIPPED) from the drip tray to a suitable storage container clearly marked as being contaminated water from drip trays & Hazardous waste.

7.5.5 The effluent collected from drip trays and waste plant nappies must be disposed of as hazardous waste and in accordance with the site specific Site Waste Management Plan (to be produced as part of the detailed CEMP). Spill kits will be easily accessible for all re-fuelling operations. Refuelling will not be undertaken near drains or within a minimum of 10m from surface waters (increasing to 50m where practical).

7.5.6 Refuelling will only be carried out by named personnel and these personnel will undergo appropriate training. The transfer of fuel between machines or plant is forbidden. Wherever possible, refuelling must be undertaken in the compound areas and not at the work sites. All refuelling must take place on hard-standing (for large plant) or over plant nappies or drip trays (small plant and equipment) and is prohibited within 10m of any body of water, including ditches and ponds, or surface water drain, and within 5m of a foul drain. For fuel bowser refilling, the fill pipe must be situated within the secondary containment system of the bowser, or if not, a drip tray or plant nappy must be used during delivery to the tank. All coupling and discharge points must be checked prior to discharge of a delivery. Deliveries must be supervised AT ALL TIMES. Fuel delivery nozzles must not be locked on, allowing the operator to leave the area. The use of 'Dead Mans' catches on fuel pumps (i.e. that allow fuel pumping without attendance) is STRICTLY PROHIBITED. A spill kit must be adjacent to the tank during deliveries. An example refuelling procedure is presented below.

REFUELLING PROCEDURE

Refuelling to be undertaken by trained /authorised personnel only.

Minimum PPE requirements: safety glasses / safety goggles; fully coated PVC gloves / disposable PVC gloves.

BEFORE REFUELLING:

- Ensure that engines are switched off;
- Ensure that small tool engines have cooled down;
- Ensure that no ignition sources are present (no naked flames, NO SMOKING and no spark producing items);
- Ensure that a plant nappy is in place (or a drip tray if no plant nappy is available).

The use of 'Dead Mans' catches on fuel pumps (i.e. that allow fuel pumping without attendance) is STRICTLY PROHIBITED.

AFTER REFUELLING:

- Turn the lower valve off;
- Lock the bowser;
- Monitor and record volumes of fuel used within the fuel register.

IN THE EVENT OF A SPILL:

- Follow the spill procedure and clean up immediately;
- Remove any contaminated clothing and wash skin with soap and water;
- Report spill to your supervisor.

7.5.7 All flexible draw-off pipes must be fitted with a tap or valve at the delivery end that closes automatically when the draw-off pipe is not in use. All flexible draw-off pipes must be kept within the secondary containment system when not in use or enclosed in a secure cabinet equipped with a drip tray. Pump sets must be fitted with a non-return valve and must be protected from unauthorised use.

7.5.8 All fuel storage bowsers must be located or protected so that they cannot be damaged by impact or collision.

7.6 Plant Maintenance

7.6.1 The use of vehicles and plant poses similar risks to those posed by the storage of liquids. Fuel and oil may leak from such equipment, which may then enter drains and / or watercourses, as well as contaminating the ground itself. Plant will therefore be maintained in good working order to reduce the risk of oil/fuel leaks. The following will be implemented:

- Vehicles and plant provided for use on the site will be in good working order to ensure optimum fuel efficiency and are free from leaks. Only plant with integral bunding and/or drip trays will be specified;
- Sufficient spill kits will be carried on all vehicles;
- Any hired vehicles and plant will be checked on delivery and not accepted if they are not in good working order; for example, leaking, excessive fumes, excessive noise and/or smoke.
- Vehicles and plant will be regularly maintained to ensure that they are working at optimum efficiency and are promptly repaired when not in good working order.
- Vehicles and plant will not park near or over drain.
- Employee-owned vehicles will not be driven or parked in construction areas unless authorised to do so.
- Topping up of vehicles and plant will be carried out on hardstanding, using drip trays and not over or near drains, or, where this is not reasonably practicable, drip trays and/or drain covers will be used to reduce the risk of spills.
- Vehicles and plant will not be overfilled with fuel.
- Plant containing oils will be regularly inspected and maintained to both prevent and identify leaks.
- Wherever possible, plant maintenance will be scheduled with plant hire exchanges – this removes the need to undertake onsite maintenance so limits the opportunity for spills or discharge of fuels or oils at site.
- Where onsite maintenance becomes necessary, or emergency maintenance is required this will be undertaken, whenever possible, on an impermeable surface in the main construction compounds and satellite compounds. Any drips or leakage of fuel or oil will be cleaned up immediately.
- Plant operators will conduct daily and weekly inspections of plant giving consideration to leaks or drips, arranging immediate repairs when necessary.

7.7 Concrete batching

7.7.1 Concrete batching will only be undertaken on site within the site compound.

7.7.2 When operating an on-site batching plant, particulate matter and wastewater runoff are primary pollutants of concern. Point source emissions may occur during the transfer of material to silos, the transfer of sand and aggregate, truck loading, mixer loading, vehicle traffic, and wind erosion from sand and aggregate storage piles. Potential batching plant wastewater and runoff pollutants include cement, sand, aggregates, chemical additive mixtures, fuels and lubricants.

7.7.3 Suitable pollution prevention measures will be developed in conjunction with the ECoW, and installed prior to the operation of the batching plant, including but not limited to the following:

- use of a wastewater collection system to prevent contamination of local watercourses;
- implementation of dust prevention measures to include water sprays, enclosures, hoods, curtains, shrouds, movable and telescoping chutes, fabric filters, etc.;
- enclosing any free-falling transfer points from conveyors to stockpiles with chute(s) and apply dust suppression materials at these points (suppression agents, water spray);
- load concrete trucks in a way to minimise airborne dust emissions;
- pre-mix of materials in a totally enclosed concrete mixer before loading the materials into the concrete truck;
- providing equipment necessary to clean all concrete trucks and other vehicles after loading (preferably dry cleaning methods) and before exit from the site area, to wash off any dust and/or mud deposited on the wheels and/or vehicle body;
- Discharge of concrete onto ground, other than for defined works, will be STRICTLY PROHIBITED;
- maintenance of all equipment, including any dust / particulate collection equipment, according to manufacturer's recommendations to prevent leaks;
- keeping a routine maintenance log on site of all equipment/filter systems, recording date and time of all corrective actions; and
- provision of integrated quality, safety and environmental management systems for the Site, operation of the plant, and delivery processes.

7.7.4 These and any other appropriate measures will be incorporated into the detailed CEMP.

7.8 Waste management

7.8.1 Waste management will follow the waste hierarchy and be in compliance to Section 34 (The Duty of Care) of the Environmental Protection Act, The Hazardous Waste (England and Wales) Regulations 2005 and the site specific Site Waste Management Plan (SWMP) (to be produced for the detailed CEMP).

7.8.2 The Principal Contractor's Site Manager will ensure that waste is stored correctly on site and will ensure the site is kept tidy and free from litter and that waste storage areas are appropriately secured to prevent pollution and allow waste to be suitably segregated at point of generation with appropriate labelling. This will include:

- Segregation of waste according to its type to prevent cross-contamination of inert, non-hazardous and hazardous wastes.
- Covered skips to prevent wind blow.
- Litter barrier nets will be used where required to prevent windblown rubbish.
- Any waste that could leach or has the potential to enter a watercourse will be stored on an impervious surface with barriers to prevent lateral flow.
- All liquid wastes will be stored on impermeable surfaces within a secondary containment system, ideally a bund with 110% capacity of the container.
- All storage areas/containers will be clearly labelled to identify the waste types and properties.
- Waste on site will be stored on site for the minimum required duration.
- Vehicles transporting waste will be suitably secured to prevent waste from escaping.
- Hazardous waste storage will be inspected weekly for leaks, corrosion etc. and to ensure that incompatible wastes, such as chemicals, are stored correctly.
- A waste inventory will be maintained which shows the types of hazardous wastes stored on site, quantities and location. Staff will be trained on the special storage and disposal arrangement for each type of waste. No waste will be burned on site, and no fly-tipping will be permitted. Security measures will be in place to prevent unauthorised handling or disposal of project waste by unauthorised persons.

- A SWMP will be prepared detailing how waste arising from the project will be managed, in compliance with the waste hierarchy; set out the plan for efficient materials and waste handling and set reduction targets. The SWMP will have a record of the types and quantities of waste that will be produced during the project, and a measurement of the quantities and types of waste produced with a comparison against the targets.
- The Principle Contractor will be responsible for obtaining copies of Waste Carriers Licenses, Environmental Permits and Exemptions, and checking they are registered with Environment Agency. The Principle Contractor will maintain a site file for record and inspection purpose.
- Waste Transfer Notes for Controlled Waste and Consignment Notes for Hazardous Waste will be held in the site file for record and inspection purposes for 2 and 3 years respectively.

7.8.3 Where possible, packaging materials will be removed prior to onward transportation to working areas, or else all the packaging waste will be removed from the working area on the same day the waste is generated.

7.8.4 Waste will be disposed of at licensed waste facilities with the movement of waste being carried out by licensed waste carriers only. All waste will be managed, controlled and disposed of following the appropriate waste management legislation.

Contaminated waste

7.8.5 Although it is unlikely that any existing contaminated land will be encountered during construction works, the detailed CEMP will set out the arrangements to be put in place so as to ensure that the presence of contaminated land or materials does not give rise to adverse effects on the environment, as a result of construction activities. Consultation with the local authority contaminated land officer will be carried out to identify any contaminated areas and the hazards that these might present.

7.8.6 If contaminated material is excavated, it will be necessary to determine the concentrations of any contaminants within this. Once this has been carried out, the results will be used to classify the materials as hazardous or non-hazardous, in accordance with Environment Agency (EA) technical guidance.[3] This will allow the material to be handled and disposed of in accordance with the appropriate legislation.

[3] https://www.gov.uk/government/publications/waste-classification-technical-guidance

If concentrations of contaminants allow the waste to be utilised elsewhere on site, advice will be sought from the EA. Any exemptions (under the Environmental Permitting Regulations) would require to be sought before the use of such materials on site. Where contaminated materials require disposal, disposal will be to a licensed waste disposal site and all parties will discharge their statutory obligations in relation to the waste management Duty of Care, imposed by Section 34 of the Environmental Protection Act 1990, etc and the Environmental Permitting Regulations 2007.

8 OUTLINE CONSTRUCTION ACTIVITIES

8.1 Construction site layout and appearance

8.1.1 The layout, appearance and operation of the construction site offices and compound(s) will be detailed prior to the commencement of construction activities and the information submitted to WBC for approval. It is envisaged that the layout, appearance and operation of the construction site, site offices and compound(s) will be managed along the following lines:

- smoking areas will be provided at designated locations;
- all fires will be prohibited, including fires for the disposal of vegetation, packaging or any other material;
- the Principal Contractor (PC) shall comply with the requirements of the local Fire Authority and will take all necessary measures to minimise fire risks;
- food waste will be contained within suitable closed waste receptacles and removed from site on at least a weekly basis. Other wastes may be segregated into streams such as timber, metal, plastic, paper and general waste to assist with recycling from the site. All waste will be removed at frequent intervals and the work site kept clean and tidy;
- adequate toilet and welfare facilities will be provided and kept clean with all toilet waste collected and disposed of in accordance with the relevant legislation. No toilet waste will be discharged on site;
- records of construction plant used on the site shall be maintained on a week by week basis;
- all vehicles will enter and exit the site in a forward direction; if space restrictions prevent this then vehicle movements will only take place when properly controlled

by a responsible person or persons observing the rear of the vehicle (i.e. a banksman); and

- spill kits will be kept at each working area, site compound and within all mobile plant.

8.2 Internal access roads

8.2.1 Access to the site will be via the existing access to the roundabout at Junction 11 of the M62.

8.3 Creation of the Peat Habitat Zone

8.3.1 Excluding the peaty (organic-rich clay loam) agricultural topsoils, there are 45,300 m^3 of deeper Peat resources within the Site. The presence of this Peat presents geotechnical constraints to the placement of structures sensitive to settlement, such as buildings, roads and car parks. Therefore, the development layout has been designed to take account of this and has been evolved through discussions with key consultees such as Natural England, the Greater Manchester Ecological Unit (GMEU) and the Environment Agency. Through the iterative design and consultation process the Proposed Development has been designed to maximise the area of undisturbed (avoided) Peat, with disturbed Peat to be retained within the Site for beneficial reuse in the creation of peatland type habitat.

8.3.2 The area of undisturbed peat equates to approximately 50.1% (22,700 m^3) of the Peat on Site, including the deepest areas of Peat to the south east. The remaining 49.9% (22,600 m^3) of Peat lies within the development area. It is proposed to remove this resource and directly place it within the retained peat areas (Peat Habitat Zone) to create a peatland type habitat. The agricultural topsoils would be removed prior to the peat removal / placement.

8.3.3 Although the surface topography of the Peat Habitat Zone would be undulating, creating a range of habitat conditions (as described below), it can be thought of as a plateau at a constant height of 22.9 m AOD. Due to the sloping nature of the natural ground this would mean the layer of placed peat would vary in thickness being shallower to the south.

8.3.4 As the placement of the Peat would raise the surface of the Peat Habitat Zone above the height of the surrounding land a bund would be required to retain the upper (placed) layers of Peat within it.

8.3.5 Prior to the installation of the bund, the eastern and southern edges of the Peat Habitat Zone would be continuous with the wider peat basin to the south and east of Site. However, the retaining bund cannot be placed directly over the Peat, as these soft deposits would be unable to support the weight of the structure. Therefore, a suitable foundation would be constructed by the excavation of a trench (using trench boxing) to the base of the peat deposits which would then be backfilled with a suitable material to allow the loads from the bund to be transferred to the underlying clay strata. The bund would be constructed from clay at a batter of 1 in 2.5; and would be impermeable to prevent the loss of water from the Peat Habitat Zone.

8.3.6 The design of the foundation is on-going and the nature of the fill is to be determined subject to consultation with Natural England and will therefore be confirmed in the detailed CEMP. The fill may include a single compacted aggregate founded unit (which would be slowly permeable and allow the continued movement of water between the Peat Habitat Zone and the wider peat basin); a single impermeable clay founded unit (which would contain all water within the Peat Habitat Zone); or a combination of aggregate and clay founded units (to create variable hydrological regimes).

8.3.7 The northern and western edges of the Peat Habitat Zone would be created by sheet piling (required to stabilise the retained peat whilst the peat within the development area is removed). This sheet piling would therefore also provide protection to the National Grid gas pipeline (described in Section 2.1.12). The sheet piling would stand proud of the retained peat to 22.9 m AOD (the top of the placed peat) and would be designed / installed to be as watertight possible to prevent the loss of water from the Peat Habitat Zone during the construction phase.

8.3.8 Once the southern and eastern sections of the bund and the sheet piling are installed, the Peat from the development area would be dug out and placed directly within the Peat Habitat Zone.

8.3.9 The void created by the excavation of the development area peat would be backfilled using suitable materials to create the development platform and the Brook diversion. A retaining embankment to the Peat Habitat Zone (bund) would be created to northern and western sides of the sheet piling, this would have a batter of 1 in 2.5 and like the eastern and northern bunds this would be constructed from clay and would be finished with a layer of site-won organic-rich topsoil.

8.3.10 The recreation of an impermeable / low permeability barrier to the northern and western edges the Peat Habitat Zone, as naturally occurs at the edge of the existing

peat basin, would ensure that water continued to be contained within the basin and that the Peats within the Peat Habitat Zone were maintained in a wettened state.

8.3.11 Within the Peat Habitat Zone, a mosaic of habitats such regenerating scrub, dry and wet heathland areas and bog pools, will be created as a peatland type habitat. This will be achieved through the creation of wet surface hollows and drier mounded areas which will become largely dry heath vegetation. By creating a diversity of topography and habitats, the area will be more resistant to seasonal change as well as climate change.

9 ENVIRONMENTAL SITE MANAGEMENT PRACTICES

9.1 Introduction

9.1.1 The following sections describe the mitigation control measures that will be incorporated into the detailed CEMP to protect the environment of the local area, during construction. The requirements for preconstruction surveys are listed in Section 6.

9.2 Ecology

9.2.1 The detailed CEMP will include updated surveys and specific measures required for species protection, where required / identified through preconstruction survey. In addition, measures identified in the CEMP addressing good site management practice (for instance, control of dust through suppression measures) will also be important in protecting adjacent habitat areas that are important for invertebrates, breeding and wintering bird and bat populations.

9.2.2 The Ecology chapter of the ES has identified the following measures to be included in the CEMP and implemented on site during construction, these will be further described in the detailed CEMP:

- the identification of offsite protected areas, during construction, which will be 'no access' areas for site workers, to minimise the footprint of the development area and limit disturbance as far as possible;
- measures to control Himalayan Balsam and Japanese rose, including the necessary monitoring of any regrowth and subsequent remedial action;

- implementation of habitat enhancement and compensation measures, in accordance with the LVIA and Illustrative Masterplan for the site;
- development and implementation of a Habitat Management Plan (based on the Framework Habitat Management Plan, HMP, provided as Appendix 5.10 to the ES. This will include measures to limit the disturbance of breeding and wintering bird populations and extant bat populations, including no night-time working and limited access (as above) to surrounding habitats; and habitat creation and management provisions, including measures in mitigation for the loss and subsequent realignment of the Silver Lake Brook corridor. These measures are identified as:
  - design of the channel profile with varied bank treatment and angles to provide a greater diversity of aquatic habitats; to include shallow berms, areas of dense marginal planting, alder and willow tree planting;
  - design of the realigned section with a range of features of conservation benefit, including in-channel features and diverse marginal habitats including riffles, areas of slow / static flow and deep peaty sediment;
  - the realigned section of the Brook to be designed with a more natural, 'sinuous' form where possible;
  - specific mitigation features for aquatic and terrestrial invertebrates to be included as well as enhancements for fish, kingfisher and other priority species such as water vole;
  - creation of a wildlife corridor, linking habitats within the biodiverse landscaped areas on site and within the Silver Lane LWS to the north and west;
  - establishment of marshy (acid) grassland habitats especially in the margins of the brook and within the easement of the gas pipeline; and
  - enhancement of the hydrological conditions on site to maintain a high water table within certain parts of the realigned Brook corridor. Within this area, several pools of varying depths will be created with densely vegetated margins; this may form part of the overall Sustainable Drainage System (SuDS) proposals for the site.
- creation of new native tree planting and enhancement of the retained vegetation within the site;

- creation of species-rich grassland and scrub mosaic, including within the route of the high pressure gas main in the east of the site; and
- all construction activities to be overseen by an Ecological Clerk of Works (ECoW) who will also ensure that the mitigation measures and procedures set out in the detailed CEMP are implemented.

9.2.3 The Habitat Management Plan will also include objectives for the creation of the Peat Habitat Zone as follows:

- The translocated peat will be subject to a different and likely variable hydrological regime and a peatland type habitat will be created with variable peat depth and topography, providing a range of micro-habitats from dry to permanently wet; creating varied habitats for a range of flora and fauna.
- Plant material from 'high quality' peatland vegetation from nearby designated sites will be sourced where possible or existing established nurseries supplying those sites where re-vegetation is taking place, to ensure plants of local provenance establish on site.
- It is expected that the Peat Habitat Zone will receive water both from rain and from groundwater. It will therefore be possible to create hollows around groundwater level and to mound areas which will become largely dry heath vegetation. By creating a diversity of topography and habitats, the area will be more resistant to seasonal change as well as climate change.
- During the management phase, parts of the Peat Habitat Zone would be permitted to develop natural tree and scrub regeneration, with species such as birch willow and alder likely to self-seed from surrounding habitat. This would attract species such as willow warbler, willow tit, and reed bunting. In other areas, trees and scrub may be prevented from establishing, such as parts of the developing floristically diverse heathland and near to the proposed bog pools. This would benefit species of invertebrate that are reliant on open water.

9.2.4 In order to minimise the effects of construction (e.g. disturbance from works) on the environment, all activity will be confined to clearly defined working areas.

9.2.5 Trees located close to proposed construction works, within and outwith the site boundary, would be provided with barrier protection of their Root Protection Areas (RPAs). If these areas are unable to be avoided, the tree(s) (which have a low retention value) would either be removed and subsequently replaced post-construction, or

tracks routed within RPAs would be provided with a geotextile layer overlain with clean angular stone, as their sub-base, to avoid excavation within the RPA.

9.2.6 Regardless of whether the 2021 surveys yield a positive result for GCN presence, the following standard working methods, to minimise the risk of harming or killing amphibians (and reptiles) will be in place throughout the construction period:

- Staff will be briefed through a Tool Box Talk on the potential presence of reptiles/amphibians, the potential for offences to occur and the working methods to follow to ensure that the risk of reptile injury/death due to the works is minimised.
- Where possible, areas of habitat with high value for reptiles such as piles of rubble, log piles, south facing slopes with short vegetation, will be avoided through micro siting. Where this is not possible the following measures will be implemented:
  - Any areas potentially providing refuges for reptiles such as rock piles, brick rubble, rubbish or fallen timber that have been present within the area to be cleared will be searched by hand and removed before the start of works in that area.
  - Areas of high risk vegetation will be cleared progressively using hand tools (including chainsaws) to provide animals with an opportunity to move out of the area. Areas of tall grassland/heathland will be trimmed, and scrub cut down to ground level and arisings removed from the working area.
  - Following vegetation clearance, the area will be left for 2 to 3 days to allow any animals to move out of the area before any excavation commences. The ECoW will check the area immediately before works commence.
- Where practicable, areas of standing water will not be allowed to persist for more than a week during the construction period during the amphibian breeding season.
- The use of insecticides/herbicides in areas where reptiles or amphibians may be present will be minimised.
- If any reptiles or amphibians are found at any time during the works (including clearance operations), works will stop in that area immediately and the ECoW will be contacted. If they are likely to be harmed without immediate action, they will be carefully placed in a cool, humid and shaded receptacle and released into adjacent areas of suitable habitat that are not affected by development and which will not be disturbed in the future.

9.2.7 All works causing ground disturbance will follow best practice techniques of vegetation and habitat reinstatement. The prompt reinstatement of all disturbed areas will be carried out wherever possible.

9.2.8 Although the majority of effects would occur during construction, there is the scope for the operation of the site to impact on the ecology of the area. The Ecology chapter of the ES identifies the following measures that are to be referenced within the CEMP and implemented as part of the works:

- inclusion of oil and fuel separators within the drainage design, to ensure no incidental pollution of aquatic features;
- installation of a new network of footpath signage within, and potentially outwith the development, to avoid increased public pressure on the Silver Lane LWS, directing visitors to the formalised paths already established around the LWS, in addition to providing optional routes within the development landscaped areas;
- creation of a sensitive lighting scheme to ensure that the wildlife corridor created by the realigned Brook remains available to foraging and commuting bats. The lighting scheme will include restrictions on lighting within the site, both during and post-construction. This could include the following measures:
  - avoidance of light spill, using directional or baffled lighting;
  - addition of cowls to fixed lighting installations, to ensure this is as directional as possible;
  - use of variable lighting regimes – switching lights off when human activity levels are low;
  - avoidance of the use of blue-white short wavelength lights and lights with high UV content; or
  - creation of light barriers, using tree planting.
- tree planting on the eastern and northern site boundaries will assist in mitigation of disturbance effects to faunal species using the arable farmland habitats to the north of the site (including the limited assemblage of winter birds).

9.2.9 A programme of vegetation monitoring is proposed to be implemented to consider any necessary remedial actions to ensure the development of the wildlife corridor habitats along the route of the realigned Silver Lane Brook. This will include checks to assess the hydrological conditions of relocated peat deposits to ensure these areas remain wet and develop a typical peatland flora. The structural and species

composition of newly created habitats will be monitored by vegetation surveys, potentially including fixed-point photography. These measures will be included in the Habitat Management Plan for the site. This will be further described in the detailed CEMP.

9.3 Soils and peat handling, storage and re-use on site

9.3.1 A highly degraded peat topsoil is identified across the Site at an average depth of 0.36 m. Although identified as a peat topsoil, due to the lack of an active living layer of peat (i.e. an acrotelm colonised with peat species – essential for a healthy, active peatland), this topsoil can be treated as an organic-rich soil resource as opposed to a peat resource. Based on the current masterplan, the removal of this topsoil across the development area (including the Peat Habitat Zone) will result in the generation of 42,000 m3 of topsoil resource. The remaining topsoil resources will remain undisturbed.

9.3.2 The design of the Proposed Development allows for 15,840 m3 (37.7%) of the stripped topsoils to be reused in Site landscaping. This assumes the placement of topsoil to a depth of 36 cm, consistent with their current depth. The remaining topsoil would be exported from site for beneficial reuse elsewhere.

9.3.3 The topsoil resources within the Site would be protected against damage by the adoption of industry standard measures for the management of soil, such as those set out in Defra's 2009 Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.

9.3.4 Over the majority of the Site, the peaty topsoils are underlain by deeper peat deposits. The on-site retention of the peat resources and the creation of the Peat Habitat Zone is described in Sections 8.3 and 9.2.

9.3.5 The direct transfer of the Peat from the development area to the specially prepared Peat Habitat Zone would ensure no double handling of the resource and minimise the potential for damage to the peat, peat drying or carbon loss. The incorrect management of Peat during construction could result in damage through the impairment of function, quality and resilience. In the absence of any England-specific guidance, peat within the Site would be protected against damage by the adoption of industry standard measures for the management of peat set out in the Scottish Environmental Protection Agency's (SEPA) good practice guidance for upland blanket

peats, which can be applied to lowland peats (SEPA "Restoration Techniques Using Peat Spoil from Construction Works", July 2011). Similarly, advice on the construction of peat retention bunds and peatland management is also provided by the IUCN UK Peatland Programme (IUCN UK Peatland Programme and Yorkshire Peat Partnership "Conserving Bogs: The Management Handbook" (2nd Edition), 2019).

9.3.6 The adoption of industry standard measures for the management of soil and peat will ensure that the quality of the resource is maintained and it remains in a condition suitable for reuse either on Site or (in the case of soils) elsewhere.

9.3.7 Prior to construction, soil and peat management within the Site would be defined through a detailed site-specific Soil and Peat Management Plan (SPMP) produced by a qualified soil scientist. Typical working methods and techniques include, but are not limited to, the following:

- The handling of topsoil resources only when sufficiently dry to prevent compaction and damage to soil structure; or implementing strict procedures for the wet-handling of soils incorporating amelioration and restoration measures to reverse any damage which may occur for example through compaction.
- The handling and maintenance of deeper peats in a wet state to prevent drying and oxidation.
- The separate stripping, handling, storage and transportation of different soil layers (topsoils, subsoils and peat) and soil types if there is variation across the Site.
- Appropriate seeding of soil storage mounds if required for a period longer than six months, to prevent erosion and to maintain soil structure, nutrient content and biological activity;
- De-compacting of the subsoil before topsoil re-instatement;
- soil loosening techniques such as deep-tine cultivation will be used where required to break up any compaction that has occurred, in advance of site restoration and landscaping;
- In peaty and soft unsaturated clay soils, where the use of geotextile membranes is not appropriate, wheeled vehicles may be fitted with low ground pressure-bearing pneumatic tyres to allow a greater distribution of weight; and
- Minimising the number of machine movements across topsoil and defining haul routes to reduce compaction and retain soil structure.

9.3.8 Furthermore, the establishment of permanent vegetative cover within the

landscaping areas (both areas with natural and restored soil profiles) would mitigate further topsoil and peat loss which is currently experienced at the Site due to cultivation (wind erosion and continued incorporation of the deeper peat into the plow layer, see paragraph 5.18).

9.3.9 The detailed SPMP will also set out the methods to be used in addressing how materials are to be handled and where these can be used on site, including the pre-construction archaeological investigation works outlined in section 6.4of this framework CEMP.

9.3.10 The SPMP would be a 'live' document which would be updated throughout the life of the project as new data becomes available.

9.3.11 As noted in the introduction to this framework CEMP, this management plan would form part of the detailed CEMP for the site.

9.4 Hydrology and hydrogeology

9.4.1 Construction activities may adversely affect the quality of surface water or groundwater as a result of contaminated runoff from, or spillages on the construction site. Control and mitigation measures to be implemented to prevent pollution will include the development of a surface water management strategy for the site.

9.4.2 The key principles of the water-related components of the detailed CEMP will include:

- construction design to minimise disruption to the natural flow regime;
- planning and preparation works to ensure that all precautions are taken in order to provide protection to watercourses, groundwater and attenuation features, including the supervision of sub-contractors and liaison with the local authority and EA area staff;
- adoption of measures to prevent and control the release of sediment, such as directing surface water across vegetated zones or through mesh fencing to capture the sediment, or the use of sediment traps or settlement lagoons, where a larger volume of sediment is anticipated. The maintenance requirements of these features (inspections, clearance, repair etc.) will be set out in the detailed CEMP;
- compliance with environmental permits and licenses;
- secure storage of all fuels, oils and other polluting substances within suitable bunded containers and use of drip trays (as detailed below);

- refuelling within designated areas only, and use (where possible) of biodegradable oils and lubricants;
- preparation of pollution incident response plans for the control of accidental releases of pollution or other environmental incidents, making onsite resources (spill kits, absorbent materials, oil booms etc.) available to all contractors at all times of operation on site;
- update of data searches in relation to water abstractions and private water supply and in relation to the potential for any unregistered abstractions;
- preparation of a dewatering management plan and peat handling plan; and
- calculation of cement / concrete mixes to ensure sufficient quantities are supplied without the need for disposal of any excess; and monitoring of the cement / sand mix ratio for consistency and suitability.

9.4.3 The following will be included within the detailed CEMP:

- Where practicable, perimeter drains will be installed to prevent surface water runoff from filling excavations; these drains would discharge to small settlement ponds, prior to discharge to watercourses and will be subject to permit from the Environment Agency / Warrington Borough Council;
- where dewatering is required to remove water from excavations, water will be pumped on to the adjacent grassland via a screen or filter system, in order to reduce the silt load, and not directly affect the watercourses;
- soil stockpiles will either be seeded with a suitable grass mix or covered to reduce the risk of runoff and silt creation;
- hessian, mulches or tackifiers (liquid mulch binders) will be used where it is not possible to re-vegetate or cover stockpiles with topsoil, as soon as is practicable;
- existing and new surface water drains will be kept clear of silt or weed build-up; and
- roads and hard surfaces will be kept clean, to prevent a build-up of mud and sediment that could contaminate surface water.

Other discharges

9.4.4 Other effluents may be produced that need to be properly managed and controlled in order to prevent contamination of surface water and groundwater. The Principal Contractor will ensure that:

- washing of equipment using detergent is carried out at commercial facilities only;
- washing of vehicles and equipment without the use of detergent is only carried out at either commercial facilities, or at purpose-built wash stations where the water is contained for controlled disposal;
- all foul effluent will be contained; and
- the foul effluent container will be subject to daily inspection and a maintenance and emptying schedule as recommended by the manufacturer. The effluent will be removed by tanker and disposed of at a licensed facility.

Disposal of Accumulated Rainfall/Surface Water

9.4.5 Rainwater and surface water may accumulate in a number of locations on site, for example in uncovered bunds and drip trays. This has the potential to become contaminated. To reduce this risk, the following measures will be implemented:

- bunds or drum pallets will be covered, where possible, to prevent the accumulation of rainwater;
- interceptor type drip trays will be provided rather than standard drip trays (for locations where drip trays will be permanently in place) or plant nappies (for mobile plant);
- if a standard drip tray or uncovered bund is used, the following will be carried out:
  - ensure it is regularly inspected (daily) and emptied either via tanker and disposed of immediately off site at an appropriately licensed facility (for large quantities) or to an on-site, bunded, storage facility for later off-site disposal (small quantities). The inspection frequency will increase during times of frequent rainfall;
  - check water from uncovered bunds for obvious signs of contamination (for example, visible oil and smells) in order that the correct disposal option can be identified;
  - ensure that only uncontaminated water is disposed of by draining it onto a grassed or stoned area on the site which is at least 10m from any drains and watercourses and 50m away from any boreholes or wells. If contaminated, it will be disposed of as hazardous waste; and
  - ensure that any oil present is absorbed using a spill kit and disposed of as hazardous waste.

9.4.6 Surface water runoff from the site will be managed using appropriate SuDS or similar techniques to ensure that discharge is maintained as existing, with surface water storage provided as appropriate to balance storm event flows that exceed this discharge rate (including an allowance for climate change).

9.4.7 Preventing the creation of silty water and the control of any silty water should it be generated are vital to the protection to watercourses, groundwater, drains and attenuation features.

9.4.8 Water can be successfully managed on-site through measures such as the creation of grips and bunds to control and direct water, the directing of surface water across vegetated zones, or by passing water through mesh fencing (silt fencing) in order to capture the sediment. Sediment traps or settlement lagoons may be considered if the quantity of sediment laden water is anticipated to be large.

9.4.9 Pumping rates for the silt traps will be adjusted to allow the settlement of any solids, prior to the discharge of water from the traps.

9.4.10 A programme of routine surface water monitoring and regular inspection of silt traps will be put in place to monitor surface water management during the construction stage, this will be detailed in the detailed CEMP. Settlement lagoons or siltbusters will be employed in areas where the level of runoff is likely to exceed levels normally contained within a silt trap. These would be agreed with the ECoW prior to commencement on site.

Dewatering

9.4.11 Deep excavations may require dewatering. Water pumped or otherwise removed from excavations will be passed through a silt-separator tank or the equivalent and discharged to ground or surface water. If required, a permit or exemption would be sought from the EA prior to undertaking any such operations.

Drainage

9.4.12 Excavations will be planned and executed so as to not create preferential drainage pathways with the potential to cause flooding of lower land, or other damage. Appropriate measures will be implemented, such as the introduction of baffles or creation of sumps to reduce the risk of preferential drainage paths being created.

9.5 Traffic Management

9.5.1 Traffic will be managed according to the Traffic Management

9.5.2 Project team members to utilise any public transport and to car share to reduce the number of vehicle movements on the project. However, adequate parking and staff instructed that fly parking is not permitted.

9.5.3 All vehicles on site will reverse park.

9.5.4 All personnel visiting a particular site will abide by these instructions regarding the route to site and parking arrangements.

9.5.5 Clear signage will show construction traffic access and access and signage in Working Areas.

9.5.6 Full sheeting will be provided for all works vehicles carrying friable (dusty) material or likely to deposit loose muck or materials on the public highway during transit.

9.5.7 Vehicles carrying wet material likely to leak from the vehicles will be provided with tailgate seals.

9.5.8 During excessive rainfall and ground saturation, stripping and reinstatement works may be suspended, or when site work activities are causing unacceptably high damage – which will reduce contamination of the adjacent road surfaces.

9.5.9 Vehicles leaving or entering the site will be checked by a Site Supervisor to ensure that their loads are secure. This does not relieve the driver of a vehicle of his legal and contractual responsibility to ensure that the load is secure.

9.5.10 Inspections of road conditions will be undertaken prior to works commencing to record whether any remediation is required as a result of the Proposed Development activities.

9.5.11 Road cleanliness will be monitored and proactive measures to maintain cleanliness adopted as required.

9.6 Dust Management

9.6.1 Dust and particulate matter arising from site can annoy neighbours and may cause health effects at high concentrations; and impact sensitive ecological habitats. The proposed development site lies within 1km of the Holcroft Moss area of the Manchester Mosses SAC (incorporating the Holcroft Moss SSSI), the wider area of which includes the Risley Moss SSSI. A small number of residential receptors are located within 350m of the site boundary (approximately 15 properties on Inglewood Close, some 290m to the south of the site), and none within 50m of the route to be used by construction vehicles on the public highway. A small number of commercial / industrial units are located within 350m of the boundary, on Leacroft Road, to the south-west, though these are potentially less sensitive to effects of dust.

9.6.2 As noted above, the M62 has an Air Quality Management Area (AQMA) extending to 50m from the roadside within the Warrington Borough Council area.

9.6.3 The implementation of effective mitigation measures during construction can substantially reduce the potential for nuisance dust and particulates to be generated. Therefore, a best practice dust mitigation plan (DMP) will be produced pre-construction and implemented for the Site. The DMP will be incorporated into the detailed CEMP. The DMP will set out the practical measures that could be incorporated as part of a best working practice scheme. This will take into account the recommendations included within Institute of Air Quality Management (IAQM) guidance, which may include various mitigation measures including:

- Daily inspections of high risk dust areas, especially during dry weather to assess control methods in place.
- Site compound areas will be hardstanding where practicable.
- Site speed limits on haul road to limit dust.
- A bowser will be used to undertake damping-down of tracked site areas, haul routes and entrances during dry weather and to suppress dust from soil stockpiles, stripped working corridors and material storage areas.
- Wind conditions will be monitored throughout the works, and backfill material will be dampened down when dust that could affect the public and road users is likely.
- A road sweeper and water jet vacuums will be employed where necessary to remove deposits of silt or other materials from roads and reduce the risk of this being washed into surface water gullies or watercourses.

- If required, wheel cleaning and vehicle & equipment washing facilities will be provided prior to vehicles leaving site.
- Litter picking will be undertaken between the work site entrance and the compound when necessary.
- Full sheeting will be provided for all works vehicles carrying friable (dusty) material or likely to deposit loose muck or materials on the public highway during transit.
- All containers will be covered or enclosed to prevent escape of dust and waste materials during loading and transportation.
- Vehicles carrying wet material likely to leak from the vehicles will be provided with tailgate seals.
- All plant must be well maintained in order to minimise emissions.
- All vehicles to switch off engines when stationary.
- Drills that are powered by compressed air are not permitted on site unless appropriate control measures are in place.
- Choice of plant must be considered with regard to potential emissions e.g. electric generators and compressors rather than diesel/petrol.
- Dust must be minimised from potentially dusty operations including excavation, cutting, grinding e.g. damping down of work faces, minimise cutting and grinding on site, use of wet cutting systems or fully enclose work areas.
- Engineers will identify and implement measures to ensure the minimisation of dust from stock-piles and open excavations, e.g. locate stockpiles out of the wind, away from site boundaries, compact, bind, or cover stockpile surfaces, minimise storage time on site, damp down.
- Activities will be planned to ensure that, as far as practical, particularly dusty activities are not carried out in unsuitable weather conditions (e.g. dry/windy) unless suppression is in place.
- Soil stockpile heights will be kept to a minimum height with gently grading of the side slopes.
- Surfaces of completed areas and bunds will be restored as quickly as possible and seeded if required.
- Materials must not be burnt on site.
- Covered containers must be used for organic waste and removed frequently.

- Ensure potentially odorous activities e.g. sewer works, are completed as quickly as possible and that masking agent is used where possible.
- Staff will show consideration to the sensitive receptors, including residential properties, including ensuring that they do not drop litter walking to and from the site.
- Materials will be positioned away from residential areas, places of public access or drains.
- If complaints are made, these will be followed up immediately and action taken to avoid a repeat complaint.

9.7 Noise Management

9.7.1 To reduce the potential impact of noise levels generated by the construction phase of the Proposed Development, at existing receptor locations in the immediate vicinity of the Site, mitigation measures will be required.

9.7.2 Best working practice will be implemented during each phase of the earthworks and construction works at the Site. The construction works will follow the guidelines in BS5228-1 and the guidance in BRE Controlling particles, vapour and noise pollution from construction sites, Parts 1 to 5, 2003.

9.7.3 The following measures will be put in place to minimise noise emissions:

- When works are taking place within close proximity to those sensitive receptors identified, screening of noise sources by temporary screens may be employed;
- All machinery should be regularly maintained to control noise emissions, with particular emphasis on lubrication of bearings and the integrity of silencers;
- Site staff should be aware that they are working adjacent to a sensitive area and avoid all unnecessary noise due to misuse of tools and equipment, unnecessary shouting and radios;
- As far as possible, the avoidance of two noisy operations occurring simultaneously in close proximity to the same sensitive receptor;
- Adherence to any time limits imposed on noisy works by the local authority;
- Implement set working hours during the week and at weekends;
- Ensure engines are turned off when possible; and

- Should earthworks and construction activities need to be carried out during night-time hours, the local authority could include a planning condition which requests advance notice and details of any night working to provided.

9.8 Management of Vibration

9.8.1 The most common form of vibration associated with piling is the intermittent type derived from conventional driven piling.

9.8.2 To minimise the potential for vibration to be generated by any necessary piling it is recommended that careful consideration is given to the type of piling to be used. However, it is recognised that the piling process will need to be selected on the basis of the strata to be encountered, the loads to be supported and the economics of the system.

9.8.3 As the construction programme and methodologies become more defined it is suggested that earthworks and construction vibration be reconsidered and that a detailed strategy for control be devised and implemented. This will be contained in the detailed CEMP.

9.8.4 The receptors likely to be affected by piling will vary depending of the phase of the Proposed Development under construction. Once the precise building locations, ground conditions for each location and type(s) of piling are confirmed, vibration levels will be estimated and recommendations for control made as appropriate.

9.8.5 To keep ground borne vibration to a minimum the following measures, as referred to in BS5228-2 (2009): Code of practice for noise and vibration control on construction and open sites: Vibration, should be put in place:

- Substitution: Where reasonably practicable, plant and or methods of work likely to cause significant levels of vibration at the receptors identified, should be replaced by less intrusive plant/methods of working;
- Isolation of plant at source: This may prove a viable option where the plant is stationary (e.g. a compressor, generator) and located close to a receptor

9.8.6 BS5228-2 also indicates that mitigation might include: use of alternative methods, removal of obstructions, provision of cut-off trenches, reduction of energy input per blow, reduction of resistance to penetration.

9.8.7 There are a number of measures which can be implemented, depending upon the type of piling chosen. For example, continuous flight auger (CFA) piling produces

significantly less vibration than conventional vibration piling. Therefore, fewer mitigation measures would be required if CFA piling were chosen as the preferred method.

10 MONITORING, REVIEW AND REPORTING

10.1 Monitoring

10.1.1 The Principal Contractor's Site Manager will be responsible for maintaining a register of all environmental monitoring, which should be made available for auditing and inspection.

Dust monitoring

10.1.2 The potential risks to health and sensitive receptors are referred to in section 7.8. There are very few residential and sensitive receptors within close proximity to the site. It is therefore not proposed to carry out dust monitoring during the construction phase. However, this will be subject to review during the construction phase, according to the detailed CEMP and any Dust Emissions Management Plan that is prepared in due course by the Principal Contractor.

Noise monitoring

10.1.3 During the construction phase, work carried out at the proposed MSA development is likely to generate noise that may propagate (extend) beyond the proposed development boundary.

10.1.4 At this stage, detailed information regarding the nature and timescales of activities likely to take place during the construction phase is not known. Activities on the site, which could give rise to construction noise impacts if carried out, could include (but are not limited to):

- site preparation i.e. ground excavation, removal of any existing structures, levelling of ground, trenching, trench filling, unloading and levelling of hardcore and compacting filling;
- construction of the buildings for the MSA and associated infrastructure, as generally outlined in section 2.4.2; and
- movement of vehicles onto and within the site, and vehicles exiting the site.

10.1.5 The above activities have the potential to generate short-term increases in noise

levels, however, these are unlikely to be significant given the proximity of high levels of traffic on the M62. Construction noise mitigation has been addressed in the Noise chapter of the ES and will be detailed in the detailed CEMP and any associated Noise Mitigation Plan. Given the above, it is not proposed to routinely carry out any noise monitoring during the construction phase, although the requirement for this will be regularly reviewed. Should noise complaints be received by the site or by any regulatory body, action will be taken which may include the implementation of noise monitoring. Should this be necessary, the Principal Contractor's Site Manager will agree the location(s), methods and noise limits with the Warrington Borough Council's Environmental Health Department during subsequent construction works.

10.2 Reporting

10.2.1 Reporting procedures will be defined by the Project Manager who will hold overall responsibility for providing feedback to the relevant, interested parties on the environmental performance of the construction works.

10.3 Environmental Incidents

10.3.1 The Principal Contractor will advise Warrington Borough Council within 24 hours of any incidents of non-compliance with the CEMP and will respond to any reported incidents within 24 hours, or as soon as reasonable practicable. In the event of working practices being deemed dangerous either by Warrington Borough Council or the Health and Safety Executive (HSE), immediate remedial action will be taken.

10.3.2 A suggested formal procedure for handling Environmental Incidents is detailed below. This will be refined following the appointment of the Principal Contractor.

- all Environmental Incidents (including near misses) are to be reported to the Site Manager;
- the Site Manager (or nominated representative) will record full details of the Environmental Incident and ensure that they are responded to as soon as reasonably practicable (preferably within one hour but always within 24 hours); and
- the Site Manager (or nominated representative) will monitor and ensure that appropriate action is taken; and
- the Site Manager (or nominated representative) will undertake an investigation to assess what corrective and preventive action, or further investigation is necessary to avoid recurrence of the Environmental Incident.

10.4 Complaints

10.4.1 A centralised register of all reported complaints and incidents will be maintained by the Project Manager (or nominated representative).

10.4.2 A suggested formal procedure for handling project complaints / concerns is outlined below and represented in the flow chart, Figure 8.1 below:

- stakeholders will be able to report any concerns, complaints or other comments to the Site Manager in writing, by email or in person at the site offices. Site contacts details should be provided at site entrances, on perimeter hoardings and possibly at appropriate community locations;
- the Site Manager (or nominated representative) will take full details of the concerns expressed and ensure that a formal assessment is commenced of the reported concern. They will also issue an initial response to the person who has submitted the complaint / concern confirming its receipt. The Site Manager will record the date and contact information associated with a complaint / concern on a standard form and place a copy in a project grievance register;
- the Site Manager (or nominated representative) will undertake an investigation to assess that corrective and preventive action, or further investigation is necessary;
- the Site Manager (or nominated representative) will respond within a reasonable timescale (typically not more than 30 days) and place details of the completed corrective and preventive actions within the project grievance register. If a longer-term programme is required to provide an adequate solution, then this programme will be detailed on the register against the specific issue;
- the Site Manager (or nominated representative) will notify the relevant stakeholder of the proposed corrective and preventive actions to be adopted;
- any corrective measures / actions will be implemented with associated implementation dates being recorded;
- for long term corrective action, the complainant will be informed of proposed action; and
- following the implementation of the corrective action and agreement with the relevant stakeholder that the complaint has been adequately addressed the case will be closed and date recorded.

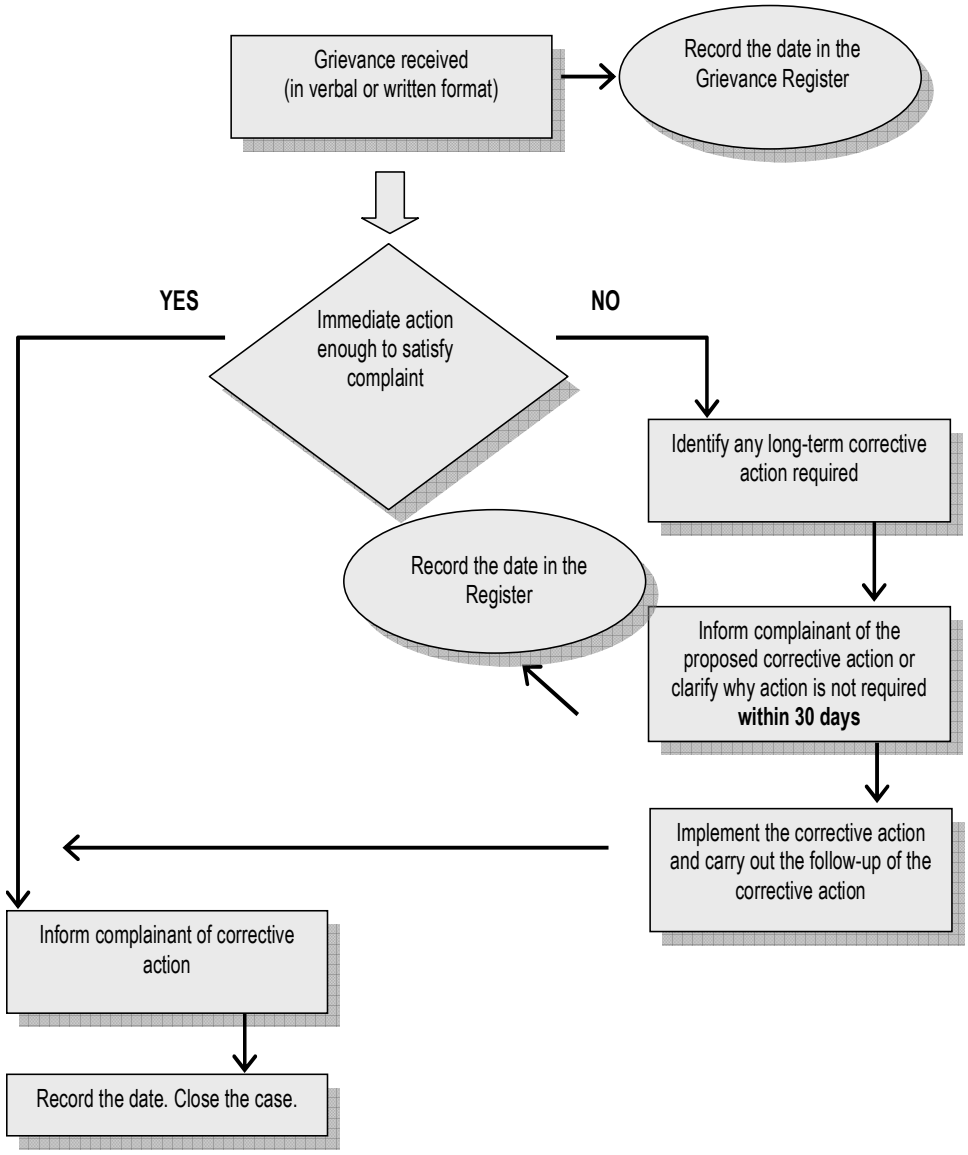


Figure 8.1: Suggested complaints procedure

10.4.3 In the event that a complaint is not resolved to the satisfaction of the complainant directly with the Site Manager, the following levels of mediation will be available:

- if the grievance cannot be adequately addressed by the Site Manager, the complaint / concern will be escalated within the Principal Contractor's organisation; and
- if the grievance is still not adequately resolved the issue will be taken to Warrington Borough Council for a final decision to be made.

11 EMERGENCY PREPAREDNESS & RESPONSE

11.1.1 Full details on environmental preparedness and response procedures will be provided by the Principal contractor in the detailed CEMP, however the key features of the plan have been discussed below:

11.2 Environmental Emergency Preparedness

Emergency Contact List (to be completed at detailed CEMP)

Emergency Contact List		
Designation	**Organisation**	**Telephone**
Emergency oil spill and other chemical clearance	TBC	TBC
Environment Agency	Incident Hotline	0800 807060
Project Manager	TBC	TBC
Site Manager	TBC	TBC
Senior Technical Advisors – Ecology, Archaeology and Hydrology	TBC	TBC
ECoW Team	TBC	TBC

11.2.1 Site specific emergency contacts will be included in the RAMS. The responsible persons assigned in the text below are liable to change in the detailed CEMP.

11.3 Potential Environmental Incidents

11.3.1 Incidents may fall into the following categories:

- unlawful disposal of waste or contaminated spoil.
- pollution of surface or groundwater.
- fly tipping or public events causing obstruction to site works.
- oil and chemical spills.
- injury or death of protected species.

11.3.2 Environmental incidents will be categorised as follows:

- Incident: An uncontrolled and unexpected release of a substance, noise or dust with the potential to pollute air, land and water resources which can be contained and mitigated against using on-site equipment.
- Emergency incident: An incident where the effects cannot be controlled by personnel with equipment on site e.g. large spillages of hydrocarbon or petrol,

where outside assistance from an emergency spill response team or Environment Agency (EA) is required to bring it under control.

- Major incident: A situation where any of the following have occurred:
  - An emergency incident as above.
  - A legal breach of legislation is identified.

11.3.3 The Site Manager must ensure that the following is undertaken:

- In the event of a leak or spillage the substance must be immediately contained and prevented from being discharged to drains or watercourses, or from soaking into the ground, using the emergency spill kits.
- Spillages must NOT be washed into drains, or surface water.

11.3.4 Used absorbent materials and contaminated spoil must be swept up, or dug out, and contained in an appropriate container and arrangements made with an appropriately licensed waste contractor for disposal as hazardous waste.

11.3.5 The Site Manager is initially responsible for recording and communicating the incident. The Site Manager will mobilise a specialist spill response contractor, if required. Additionally, Extra MSA Group must also be contacted and informed of the event, for minor incidents this may be through monthly reporting; or at scheduled meetings. For major incidents and emergencies, Extra MSA Group will be contacted as soon as possible following the incident.

11.3.6 Appropriate spill materials will be stored across the site and will also be carried by sub-contractors working on site, who will be trained in its usage and in its correct disposal. In the event that a pollutant has entered a drain or soaked into the ground or there has been an uncontrolled release to atmosphere in breach of authorisation conditions, then the Site Manager will provide advice regarding further appropriate remediation requirements, and will contact the appropriate regulatory body if appropriate.

11.3.7 It is the Site Manager's responsibility that all staff are provided with training in emergency response (see Section 3.5) and an emergency spill response plan should be advertised around the site (for example on notice boards and chemical/fuel storage areas); an example is provided at page 64.

Environment Agency

11.3.8 In the event of a discharge directly into or adjacent to a watercourse, ditch, pond or surface water drain including any quantity of any uncontrolled substance, but not

limited to:

- HAZCHEM listed chemical.
- Fuel spillage greater than 100 litres.
- Oil spillage greater than 20 litres.
- Major incidents in combined drainage areas involving:
  - 25 litres detergent;
  - 25 litres disinfectant;
  - 250 litres foodstuff;
  - 25 litres paints and dyes;
  - 250 kg inorganic powders;
  - 25 litres organic liquids (e.g. antifreeze, lube oils etc.).

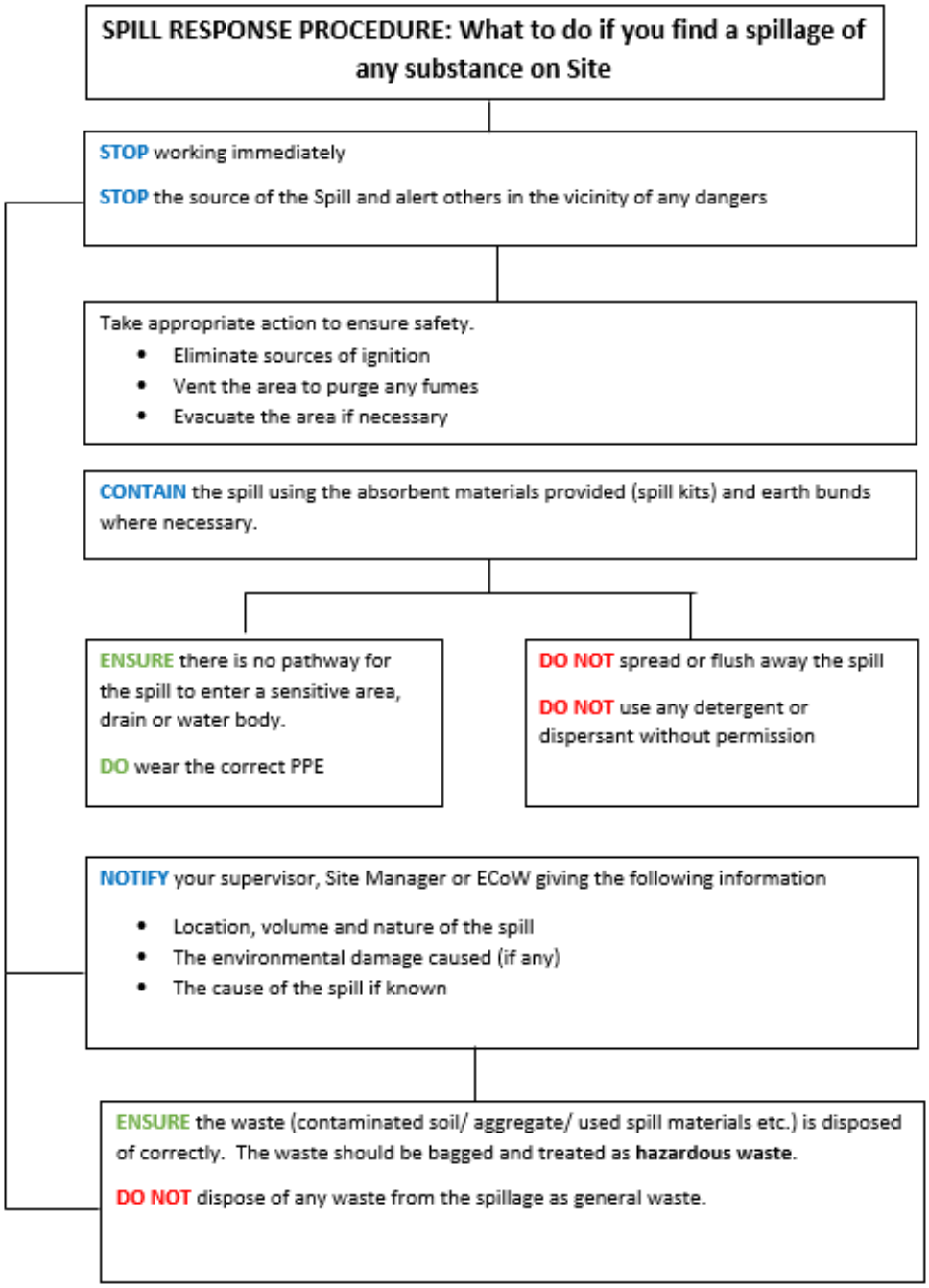
The Sewerage Undertaker

11.3.9 In the event of an uncontrolled discharge to foul water drain.

Natural England

11.3.10 In the event of an incident that causes damage or disturbance to a protected species or habitat.

Example of Emergency Response to Spills (to be issued to site staff)



11.4 Spill Kits

11.4.1 Spill kit location points should be identified in the project CDM drawing and detailed in the relevant method statements. Spill kits must include as a minimum:

- Absorbent wipes and socks.
- Plastic bags for used spill kit materials.

11.4.2 And the site must also have access to the following equipment and information:

- Absorbent granules.
- Drain covers.
- Plastic bunds or trays.
- Relevant and up-to-date material safety data sheets and COSHH information for substances used on site.
- Shovels and brooms.

11.4.3 Spill kits will be made available in the following locations:

- Adjacent to all fuel storage and refuelling areas.
- All mobile plant.
- All static plant with oil or fuel requirements.

11.4.4 When work is being undertaken in hydrologically and ecologically sensitive areas identified by the ECoW or other environmental specialist, spill kits will be available adjacent to the works (i.e. carried in site vehicles).

11.4.5 Spill kits must be contained in a suitable, labelled, weather-proof receptacle which can also be used to contain and transport contaminated spoil and absorbent materials (e.g. plastic bin or sturdy bag). Additional equipment for sensitive locations may include:

- Plugging clay and slab.
- Absorbent cushions.
- Booms.

11.4.6 The Project Manager or nominated representative is responsible for ensuring that spill kits are checked at least weekly and kept fully stocked and in good repair.

wardell-armstrong.com

STOKE-ON-TRENT
Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)1782 276 700

BIRMINGHAM
Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

BOLTON
41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

CARDIFF
Tudor House
16 Cathedral Road
Cardiff
CF11 9LJ
Tel: +44 (0)292 072 9191

CARLISLE
Marconi Road
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)1228 550 575

EDINBURGH
Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GLASGOW
2 West Regent Street
Glasgow
G2 1RW
Tel: +44 (0)141 433 7210

LEEDS
36 Park Row
Leeds
LS1 5JL
Tel: +44 (0)113 831 5533

LONDON
Third Floor
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)207 242 3243

MANCHESTER
76 King Street
Manchester
M2 4NH
Tel: +44 (0)161 817 5038

NEWCASTLE UPON TYNE
City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

TRURO
Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International offices:

ALMATY
29/6 Satpaev Avenue
Regency Hotel
Office Tower
Almaty
Kazakhstan
050040
Tel: +7(727) 334 1310

MOSCOW
21/5 Kuznetskiy Most St.
Moscow
Russia
Tel: +7(495) 626 07 67

wardell armstrong

ES Part 1 Appendix 13

spawforths

Extra MSA Group

M62 J11 Warrington Services

Need and Alternative Sites Assessment

Revision 05 August 2019

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Contents

Appendices

1. Introduction

1.1. A need has been identified to provide an additional Motorway Service Area (MSA) on the M6 / M62 / M60 corridors of the Strategic Road Network in the North West of England. Spawforths in conjunction with i-Transport are instructed on behalf of Extra MSA Group to undertake a Need and Alternative Sites Assessment in order to identify the most appropriate location upon which to locate a new MSA to meet the identified need.

Structure of the Report

Section 2 Outlines the key national transport policy context relating to the Strategic Road Network and the provision of roadside facilities on motorways in England. This includes national spacing requirements between MSAs.

Section 3 Considers the need to provide a new MSA on the Strategic Road Network having regard to the policy context set out in Section 2.

Section 4 Considers general locations on the Strategic Road Network where the identified need could best be met. It demonstrates that there are four "gaps" in provision that amount to a need for a new MSA. This section identifies an area of search for the Alternative Sites Assessment to meet the full need i.e. all four "gaps".

Section 5 Discusses potential On-line and Off-line (Junction) locations within the area identified to meet all four "gaps" having regard to the requirements of National Policy Guidance.

Section 6 Considers whether there are any suitable On-line locations within the identified area of search where a new MSA could be accommodated.

Section 7 Considers whether there are any suitable Off-line locations within the identified area of search where a new MSA could be accommodated.

Section 8 Sets out the high level Alternative Sites Assessment that has been undertaken. This section considers the characteristics and potential of a number of alternative sites to accommodate a new MSA and identifies the most sequentially preferable location upon which to site such a facility having regard to locational, planning, engineering and environmental constraints.

Section 9 Summarises the findings of the report and concludes the assessment.

2. Background and Policy Context

2.1. The Strategic Road Network plays a key role in the safe and efficient movement of goods, supplies and people around the United Kingdom; it is critical to the performance of the economy and is essential in helping to facilitate planned economic growth.

2.2. This is confirmed by a Department for Transport report 'Action for Roads: A Network for the 21st Century' (July 2013) which states that '*The road network is vital to our nation and a crucial part of the national transport system. It provides real and direct economic benefits: to business, to workers, to consumers. Better connections support individual towns and cities and strengthen the country as a whole. Failures of the road network increase costs, stifle employment opportunities and make it harder to do business in the UK*'[1].

2.3. The need to keep the Strategic Road Network flowing, supporting economic connectivity and mitigating the cost of delay is fundamental to national economic performance. The impact and costs of delays resulting from accidents on the Strategic Road Network can be significant and widespread. The Government estimates that the economic impact of a three lane carriageway closure on a busy motorway can be more than £500,000[2]. The social impact of accidents on the Strategic Road Network is also substantial and by 2020, Highways England has a target to reduce the number of people killed or seriously injured on the network by 40%[3].

2.4. Driver fatigue is a recognised cause of road accidents and it is estimated that 20% of accidents on the Strategic Road Network are fatigue related. Rule 91 of the Highway Code advises that in order to minimise risks, journeys should be planned to incorporate sufficient breaks. The Rule advises that the most effective ways to counter tiredness are to stop in a safe place, drink caffeinated coffee and take a short nap. Government advice is that motorists should stop and take a break of at least 15 minutes every two hours. Drivers of many commercial and public

[1] Paragraph 1, page 5.
[2] Paragraph 1.4, Review of Investigation and Closure Procedures for Motorway Incidents – Preliminary Report (May 2011). Department for Transport, Highways Agency, Association of Chief Police Officers and the Home Office.
[3] Page 4 Highways England Delivery Plan 2015 – 2020, (March 2015) Highways England

service vehicles are also subject to a regime of statutory breaks and other vehicle time restrictions.

2.5. The UK's network of Motorway Service Areas therefore perform an essential road safety function in ensuring the safety and welfare of drivers and their passengers and they underpin the safe and efficient operation of the M6, M62 and M60 in the North West of England and other Motorways throughout the country. MSAs create opportunities and facilities for motorists and commercial drivers and their passengers to take breaks, refresh and relax in safe and convenient locations on the Strategic Road Network.

Establishing the 'Need' case – Policy Test

Department for Transport (DfT) Circular 02/2013

2.6. Government Policy relating to the Strategic Road Network is contained within Department for Transport (DfT) Circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development'.

2.7. Paragraph 8 of this document states that a well-functioning Strategic Road Network enables growth by providing for safe and reliable journeys. Paragraph 7 also reaffirms that the Strategic Road Network plays a key role in enabling and sustaining economic prosperity and productivity, whilst also helping to support environmental and social aims and contributing to wider sustainability objectives and improved accessibility to key economic and social services.

2.8. Annex B specifically relates to roadside facilities for road users on motorways in England and sets out policy on the provision, standards and signage of roadside facilities on the Strategic Road Network. The Circular confirms that all such proposals will be considered in the context of the National Planning Policy Framework (NPPF 2019) and, in particular, the statement that it includes within paragraph 104 footnote 42, regarding the primary function of roadside facilities being to support the safety and welfare of the road user.

2.9. Although MSAs are privately owned and operated, they exist primarily to meet a **public safety need** on the Strategic Road Network, the need being to provide facilities which support the safety and welfare of the travelling public. The absence of such facilities in areas where there is a need places the safety and welfare of the travelling public at risk and increases the chances of accidents. Some 20% of all major accidents are fatigue related and the provision of properly gapped MSAs does significantly assist in reducing fatigue related accidents.

2.10. In line with paragraph 104 (e) of the National Planning Policy Framework (NPPF 2019), it is clear that the purpose of an MSA is to ensure the safety of drivers on the Strategic Road Network. This point is reinforced in Annex B of the Circular, which states at paragraph B4:

> *"Motorway service areas and other roadside facilities perform an important road safety function by providing opportunities for the travelling public to stop and take a break in the course of their journey. Government advice is that motorists should stop and take a break of at least 15 minutes every 2 hours. Drivers of many commercial and public service vehicles are subject to a regime of statutory breaks and other working time restrictions and these facilities assist in compliance with such requirements."*

2.11. **Highways England's objective and clear recommendation set out at paragraphs B5 and B6 is that the maximum distance between motorway services areas should be no more than 28 miles which is typically 30 minutes travelling time.** This distance can also be shorter, subject to compliance with the design requirements of the Design Manual for Roads and Bridges. This requirement or "*need*", to ensure driver safety through the provision of an MSA at maximum intervals of 30 minutes leads directly to the recommendation of the Highways Agency that there should not be a gap of more than 28 miles between MSAs. Paragraph B6 is set out below in full:

> *"The Highways Agency <u>therefore</u> recommends that the maximum distance <u>between motorway service areas</u> should be <u>no more than 28 miles</u>. The distance between services can be shorter, but to protect the safety and operation of the network, the access/egress arrangements of facilities must comply with the requirements of the Design Manual for Roads and Bridges including its provisions in respect of junction separation"* (emphasis added).

2.12. In order to meet the Government's objective of ensuring the safety and welfare of road users, there is a need to provide an MSA on those stretches of the Strategic Road Network where there is an existing gap between MSAs of more than 28 miles. Paragraph B8 confirms that in determining applications for new MSAs, Local Planning Authorities should not need to consider the merits of spacing of sites beyond conformity with the maximum and minimum spacing criteria established for safety reasons. Nor should they seek to prevent competition between operators; rather they should determine applications on their own specific merits. Paragraph B8 is set out in full below:

"The distances set out above are considered appropriate for to (sic) all parts of the strategic road network and to be in the interests of and for the benefit of all road users regardless of traffic flows or choice. In determining applications for new or improved sites, local planning authorities should not need to consider the merits of the spacing of sites beyond conformity with the maximum and minimum spacing criteria established for safety reasons. Nor should they seek to prevent competition between operators; rather they should determine applications on their specific planning merits."

2.13. The Circular does not include provision for traffic flows to form part of a weighting process to evaluate the importance of a gap. **A gap either exists or it does not; flows and route choices are irrelevant.**

National Planning Policy Framework (NPPF 2019)

2.14. The National Planning Policy Framework (NPPF 2019) sets out the Government's planning policies for England and how these should be applied. The NPPF (2019) is a material consideration in planning decisions (paragraph 2) but it also notes that "*other statements of government policy may be material when preparing plans or deciding applications*" (paragraph 6). The main purpose of the planning system is to contribute to the achievement of sustainable development. Achieving sustainable development means that the planning system has three overarching objectives, economic, social and environmental:

*"**an economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;*

***an social objective** – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and*

***an environmental objective** – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve*

biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

2.15. Paragraph 82 of the NPPF (2019) relates to "building a strong, competitive economy". It notes that that planning decisions should "*recognise and address the specific locational requirements of different sectors*".

2.16. In relation to "promoting sustainable transport", Paragraph 102 requires that *"transport issues should be considered from the earliest stages of development proposals*", including the environmental impacts of traffic and transport infrastructure, and opportunities to promote walking, cycling and public transport use. Paragraph 103 notes that "*significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes*".

2.17. The NPPF (2019) states in paragraph 104(e) that "*Planning policies should:-*

> *e) Provide for any large-scale transport facilities that need to be located in the area (42), and the infrastructure and wider development required to support their operation, expansion, and contribution to the wider economy. In doing so they should take into account whether such development is likely to be a national significant infrastructure project and any relevant national policy standards*".

2.18. Footnote 42 states that "*Policies for large scale facilities should, where necessary, be developed through collaboration between strategic policy-making authorities and other relevant bodies. Examples of such facilities include ports, airports, interchanges for rail freight, public transport projects and roadside services. The primary function of roadside services should be to support the safety and welfare of the road user (and most such proposals are unlikely to be national significant infrastructure projects)*".

2.19. Paragraph 107 requires that planning decisions "*should recognise the importance of providing adequate overnight lorry parking facilities, taking into account any local shortages, to reduce the risk of parking in locations that lack proper facilities or could cause a nuisance*".

2.20. **It is clear that within the NPPF (2019), the starting point for the consideration of an MSA is paragraph 104(e) footnote 42 which provides that "*The primary function of roadside services should be to support the safety and welfare of the road user*" and that this point is reinforced in Annex B of Circular 02/2013.** The Circular guidance is

a material consideration in the determination of MSA applications by virtue of paragraph 6 of the NPPF (2019): "*other statements of government policy may be material when preparing plans or deciding applications*". In establishing the need for an MSA above, it is also clear that such an MSA should contribute towards sustainable development (paragraph 7) but that planning decisions should recognise the "specific locational requirements" of sectors such as MSA (paragraph 82); and that operational issues such as lorry parking are also important (paragraph 107).

Leading Counsel Opinion

2.21. Extra MSA Group has obtained Leading Counsel's Opinion on the interpretation of need based on the NPPF (2019) and Circular 02/2013. Counsel advised (14th May 2019 – paragraph 11) that *"The 2013 Circular was a deliberate departure from previous policy in that the Government decided to make clear that once a gap of more than 28 miles has been identified, the need for an MSA will be established (i.e. the absence of an MSA in such a situation frustrates the Government's objective of supporting the safety and welfare of the road user). The local planning authority in such a situation should not concern itself with the merits of spacing beyond asking itself whether (a) the proposed MSA will help ensure that the maximum distance of 28 miles is not breached, and (b) that the new facility will not breach the requirements set out in the Design Manual for Roads and Bridges.* ***For the purposes of applying the policy on "need" as set out in the Circular, it is not permissible to take a graduated approach to need by reference to the number of drivers using a particular stretch of the strategic road network or any other considerations such as route choice or the nature of the journeys. The existence of the requisite gap is conclusive evidence of need, and in the particular circumstances of this case it removes any necessity to debate how many drivers will choose a particular route (for example M6 South – M62 East, in preference to any other route."*** A copy of the full advice is included in Appendix 1.

Highways England: The Strategic Road Network Planning for the Future (September 2015)

2.22. The Highways England: The Strategic Road Network: Planning for the Future (September 2015) document confirms the approach that Highways England takes to engaging in the planning system in relation to the whole Strategic Road Network, comprising of motorways and all-purpose trunk roads in England. It confirms that the Document is written in the context of the NPPF and Circular 02/2013. The Document confirms that "*the Strategic Road Network (SRN) is arguably the biggest and single most important piece of infrastructure in the country and is*

the core of our national transport system". **It also confirms that "*operating an effective and efficient SRN makes a significant contribution to the delivery of sustainable economic growth. Efficient and reliable connections enhance the UK's image and reputation as a good place to invest. By enabling the efficient movement of people and goods the SRN helps create the conditions for growth through enabling businesses to:-***

- ***Access the skills and ideas they need to perform and grow;***
- ***Access their suppliers and control their costs;***
- ***Serve the customers and reach out to new markets; and***
- ***Create effective collaborations and partnerships.***

The SRN is therefore essential to the growth, well-being and balance of the county's economy".

2.23. The Document has a section relating to "*Roadside facilities, including Motorway Service Areas*". It confirms that "*new and existing roadside facilities are subject to the provisions of relevant planning legislation and regulation, which together set the framework within which local planning authorities should consider the planning proposals for such developments*". As confirmed earlier, this legislation and regulation relates to the NPPF and Circular 02/2013 (as well as the Town and Country Planning Development Management (Procedure) Order (England) 2015). In light of the above the Highways England 2015 Document supports the importance of public safety considerations and the contribution of the SRN to the national economy and re-affirms the role and relevance of both the NPPF and Circular 02/2013.

3. Establishing the 'Need' for a New MSA

3.1. Section 2 has set out the key National Transport Policy context relating to the Strategic Road Network and the provision of roadside facilities on Motorways in England, including national spacing requirements between MSAs. This Section will now consider the need to provide a new MSA on the M6 / M62 / M60 corridors of the Strategic Road Network in the North West of England having regard to this context.

3.2. **The Highways Agency produced a national report in January 2010 titled: "*Spatial Planning Framework Review of Strategic Road Network Service Areas*".** The 2010 Study was commissioned to assess the provision of service areas on the Strategic Road Network in England (paragraph 1.1). The purpose of the Study was to "*encapsulate the results of the MSA study which provides a gap study of those MSAs located in each region*". Paragraph 1.3 confirmed that this Study comprised the following:--

> "*Identification of the location of MSAs along the Motorway Network;*
>
> *Determination of the separation of MSAs;*
>
> *Identification of any gaps in provision; and*
>
> *Recommendations to address provision issues along the Motorway Network".*

3.3. It is recognised that this Study pre-dated Circular 02/2013 as it used a requirement of 40 miles or greater to identify a "*gap*". This distance has now been superseded by the Circular 02/2013 requirement that "*the maximum distance between motorway service areas should be no more than 28 miles*". The conclusions of the 2010 Study can therefore be considered extremely robust as the maximum size of the gap has subsequently been reduced.

3.4. In the North West, the 2010 Study set out in Table 4.2 a Matrix Displaying MSA Separation in the North West:

Table 4.2: Matrix Displaying MSA Separation in the North West

Motorway Service Area	Government Office Region	Birch	Blackburn with Darwen	Bolton West	Burton in Kendal NB	Burtonwood	Charnock Richard	Chester	Gretna (A74(M) Scotland)	Hartshead Moor	Killington Lake SB	Knutsford	Lancaster (Forton)	Lymm	Sandbach	Southwaite	Tebay	Terminus of A627(M) (Oldham)	Terminus of M53 (Chester)	Terminus of M53 (Wallasey)	Terminus of M55 (Blackpool)	Terminus of M56 (Chester)	Terminus of M57/M58 (Switch Island)	Terminus of M602 (M'cr City Centre)	Terminus of M65 (Colne)	Terminus of M67 (Mottram & Hyde)	Todhills	Truckhaven (Carnforth)
Birch	North West	#		17		22	35	39		24				25				6					39	13	28	17		
Blackburn with Darwen	North West		#	16			15						25								26			32	18	35		
Bolton West	North West	17	16	#			16						28								28			18		30		
Burton-in-Kendal (Northbound O	North West				#												22											
Burtonwood	North West	22				#	20							10									18	16		34		
Charnock Richard	North West	35	15	16		20	#						25	23							26		19	30		48		
Chester	North West	39						#				20		14					6	20		6						
Gretna (A74(M) Scotland)	Scotland								#																		6	
Hartshead Moor	Yorkshire and North East	24								#								22										
Killington Lake (Southbound On	North West										#		26															15
Knutsford	North West							20				#		7	14													
Lancaster (Forton)	North West		25	28			25				26		#								28							13
Lymm	North West	25				10	23	14				7		#												26		
Sandbach	North West											14			#													
Southwaite	North West															#	27										12	
Tebay	North West															27	#											
Terminus of A627(M) (Oldham)	North West	6								22								#										
Terminus of M53 (Chester)	North West							6											#	22								
Terminus of M53 (Wallasey)	North West							20											22	#								
Terminus of M55 (Blackpool)	North West		26	28			26						28								#							
Terminus of M56 (Chester)	North West							8														#						
Terminus of M57/M58 (Switch Island)	North West	39				18	19																#	35		52		
Terminus of M602 (M'cr City Centre)	North West	13	32	18		16	30																35	#	38	26		
Terminus of M65 (Colne)	North West	28	18																					38	#			
Terminus of M67 (Mottram & Hyde)	North West	17	35	30		34	48							26									52	26		#		
Todhills	North West								6							12											#	
Truckhaven (Carnforth)	North West				5						15		12															#

Motorway Service Station Gap Analysis
National Overview - Distance between MSA's

HIGHWAYS AGENCY

Figure 4.1

3.5. **Paragraph 5.4 of the Study confirmed that "*in the North West, Charnock Richard and the terminus of the M58 to the terminus of the M67 are both routes further than 40 miles long with no MSA provision. There are a further nine routes above the 28 miles threshold*".**

3.6. Since the 2010 Study was published no new MSA provision has been delivered to meet any of these gaps in the North West region and hence the public safety need identified in 2010 has not been met. As has been noted in Section 2, Circular Guidance 02/2013 has been produced since the 2010 Study which has reduced the maximum gap requirement from 40 miles to 28 miles and hence the "further nine routes above the 28 mile threshold" identified within the 2010 Study now also display a public safety need that must be met.

3.7. The M6 / M62 / M60 Motorways are amongst the busiest and most important in the UK. The M62 has daily traffic flows of circa 115,000 vehicles in the vicinity of Junction 11 (24 hours AADT 2016). It is the west – east trans-Pennine Motorway in Northern England, connecting the two major ports of Liverpool and Hull, via intervening conurbations including Manchester, Warrington, St Helens and Leeds, and it also connects the two City Regions of Liverpool and Manchester. The area around Greater Manchester, Warrington and St Helens accommodates a convergence of other significant Motorway and major road networks (M6 / M58 / M60 / M62) that also make connections from the east to the west; north to south; and to the orbital around Manchester.

3.8. There are six existing MSAs located on the Strategic Road Network in and around the North West of England. These are listed in Table 1 and illustrated on the plan below.

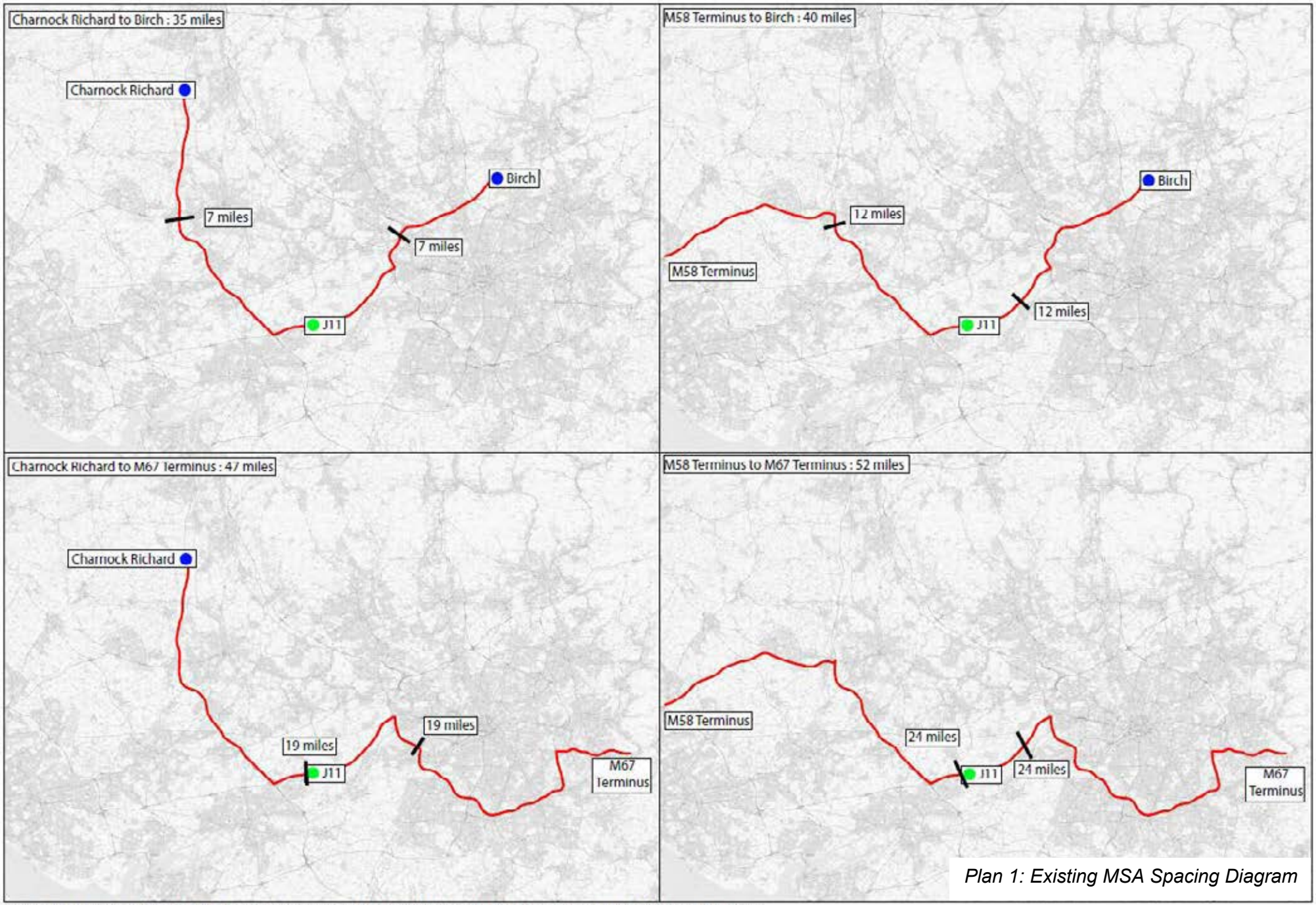
Motorway	MSA	Location
M6	Charnock Richard	On-line between J27 and J28
M62	Birch Services	On-line between J18 and J19
M62	Burtonwood Services	Off line at J8
M61	Rivington Services	On-line between J6 and J8
M6	Knutsford Services	On-line between J18 and J19
M56	Chester Services	Off line at J14

Table 1: Existing MSA locations in and around the North West Region

Gaps on the Network

3.9. Based upon the gapping parameters contained within Circular 02/2013, **FOUR** defined policy gaps exist in the provision of MSA facilities on the Strategic Road Network within the North West Region where spacing between existing MSAs is greater than the maximum limit of 28 miles or a maximum travelling time of 30 minutes. These gaps are:

- On the M58/M6/M62/M60/M62 corridor between M58 Terminus (Switch Island) and Birch Services.
- On the M6/M62/M60/M62 corridor between Charnock Richard Services and Birch Services.
- On the M58/M6/M62/M60/M67 corridor between M58 Terminus (Switch Island) and M67 Terminus (Hattersley Roundabout).
- On the M6/M62/M60/M67 corridor between Charnock Richard Services and M67 Terminus (Hattersley Roundabout).



Plan 1: Existing MSA Spacing Diagram

3.10. The current distance spacing between the aforementioned MSA facilities is set out in Table 2 below and illustrated on the above plan.

From	To	Current Route	Current Distance
M58 Terminus (Switch Island)	Birch Services	M58/M6/M62/M60/M62	40 miles
Charnock Richard Services	Birch Services	M6/M62/M60/M62	35 miles
M58 Terminus (Switch Island)	M67 Terminus (Hattersley Roundabout)	M58/M6/M62/M60/M67	52 miles
Charnock Richard Services	M67 Terminus (Hattersley Roundabout)	M6/M62/M60/M67	47 miles

Table 2: Existing gaps of greater than 28 miles between MSAs in the North West Region

3.11. The distances set out above are clearly in excess of the 28 mile maximum distance and importantly the travelling time over these distances is significantly in excess of the 30 minute maximum time set out in Circular 02/2013 '*The Strategic Road Network and the Delivery of Sustainable Development*'.

3.12. Charnock Richard Services are located on line between Junctions 27 and 28 of the M6. The location of this MSA is relevant to traffic heading south on the M6 as traffic heading south east on the M61 can use the facilities at Rivington services. Traffic from Liverpool on the M62 can use Burtonwood Services at Junction 8. Traffic coming from M58 (Switch Island) or any locations south of Charnock Richard and then heading south on the M6 and then on the M60 / M62 has no provision before Birch Services. Similarly traffic emanating from a similar location and then heading south on the M6, east on the M62 and then south east on the M60 (around Manchester) and along the M67 towards the Pennines to reach the urban areas of Sheffield and Doncaster has no provision right through to the M67 terminus.

3.13. **The gapping between existing MSA facilities on this section of the Strategic Road Network is significantly greater than the maximum 28 mile distance. It is also greater than the 30 minutes travelling time requirement given the often congested nature of the M6, M62 and M60 Motorways passing through the North West Region, as frequently occurs within this area. The needs of motorists, commercial drivers and their passengers are not being adequately met within this area.**

3.14. **Therefore in accordance with Circular 02/2013, there is a need fully supported by Policy, for an additional MSA to serve the identified gapping between:-**

- **M58 Terminus and M62 Birch Services;**
- **M6 Charnock Richard and M62 Birch Services;**
- **M58 Terminus and M67 Terminus; and**
- **M6 Charnock Richard and M67 Terminus.**

3.15. The nature of the specific need within the North West region has been considered by Leading Counsel, instructed by Extra MSA Group. Counsel advised in paragraph 10 that *"It can be seen from the above that the existence of Burtonwood Services and Lymm Services do not address the identified gaps, for the simple reason that some drivers will take a journey whereby despite the existence of these two MSAs they will drive for more than 28 miles (and significantly longer than 30 minutes) before they encounter an MSA. How many such drivers there will be is irrelevant for the purposes of applying the Government policy on need – as paragraph B8 of the Circular makes explicit, once such a gap is shown to exist, it is not necessary to have regard to other considerations in determining whether a need exists (i.e. the existence of the gap is in and of itself conclusive evidence of need for planning purposes."* A copy of the full advice is included in Appendix 1.

Confirming this Gap

3.16. As part of their pre application discussions, Extra MSA Group has consulted with Highways England. **Highways England confirmed at this time that based upon current distances between existing MSA facilities, it would have "*no objection in principle to the proposed development of a new MSA at M62 J11 ("Warrington Services") on the grounds of spacing*".** A letter dated 11th June 2019 from Julie Prince (Senior Policy

Advisor) at Highways England to Warrington Borough Council confirming this gapping conclusion is enclosed at Appendix 2.

Summary

3.17. In summary, there is a strategic need fully supported by policy, for a new MSA to serve the identified gapping between M58 Terminus and M62 Birch Services; M6 Charnock Richard and M62 Birch Services; M58 Terminus and M67 Terminus; and M6 Charnock Richard and M67 Terminus. This is based on Government policy in Circular 02/2013 which sets out the maximum acceptable distances between facilities. The need has also been supported as recently as 11th June 2019 by Highways England.

4. Meeting the Need for a New MSA

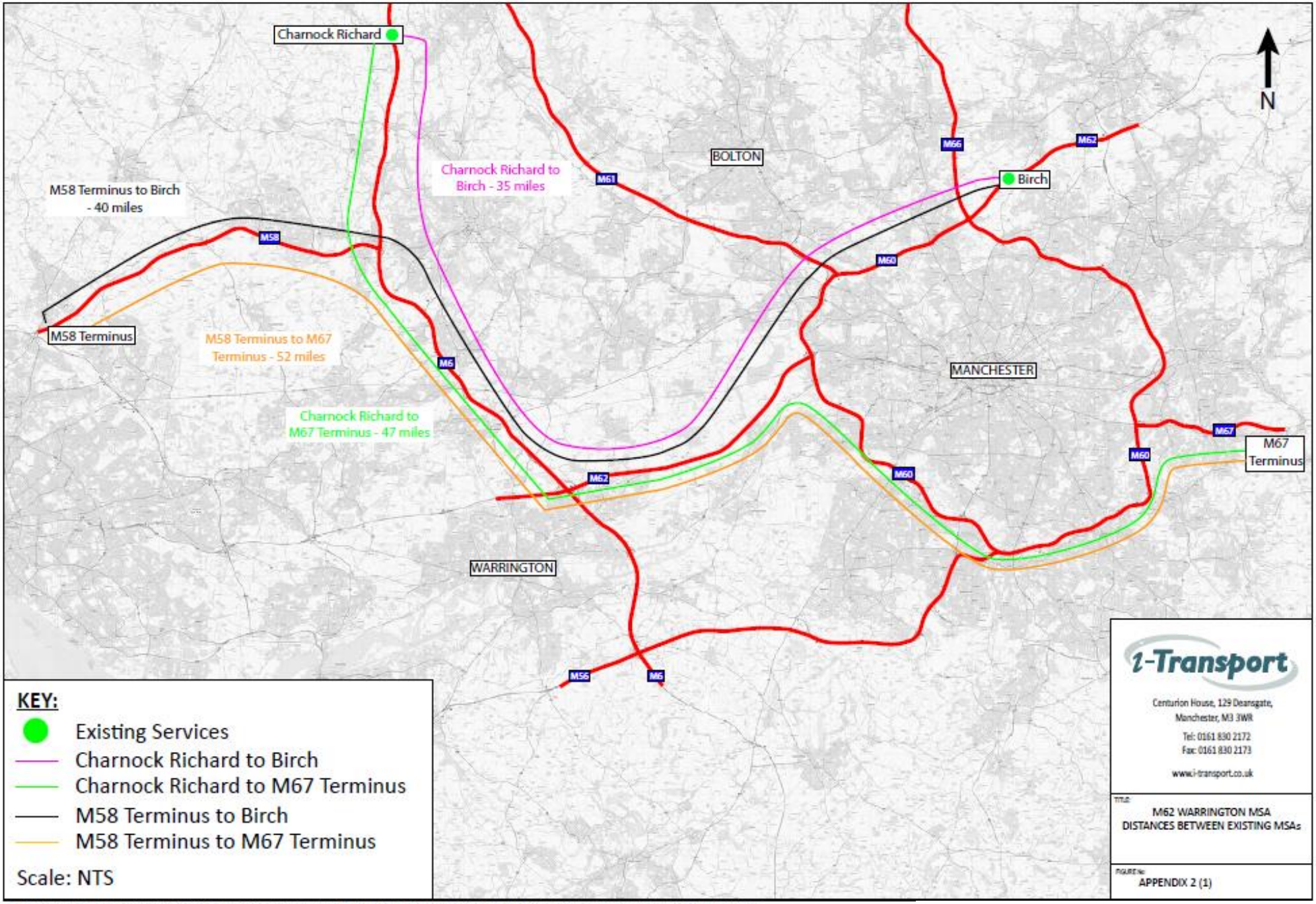
4.1. Section 3 has explained why a need, fully supported by policy, exists for a new MSA to serve the **FOUR** identified gaps in the North West of England and how despite those gaps being identified in 2010, no new provision has been made to fill these gaps.

4.2. The next stage in this assessment is to consider general locations on the Strategic Road Network where the identified need could best be met and identify an area of search to form the basis of the Alternative Sites Assessment.

Area of Search

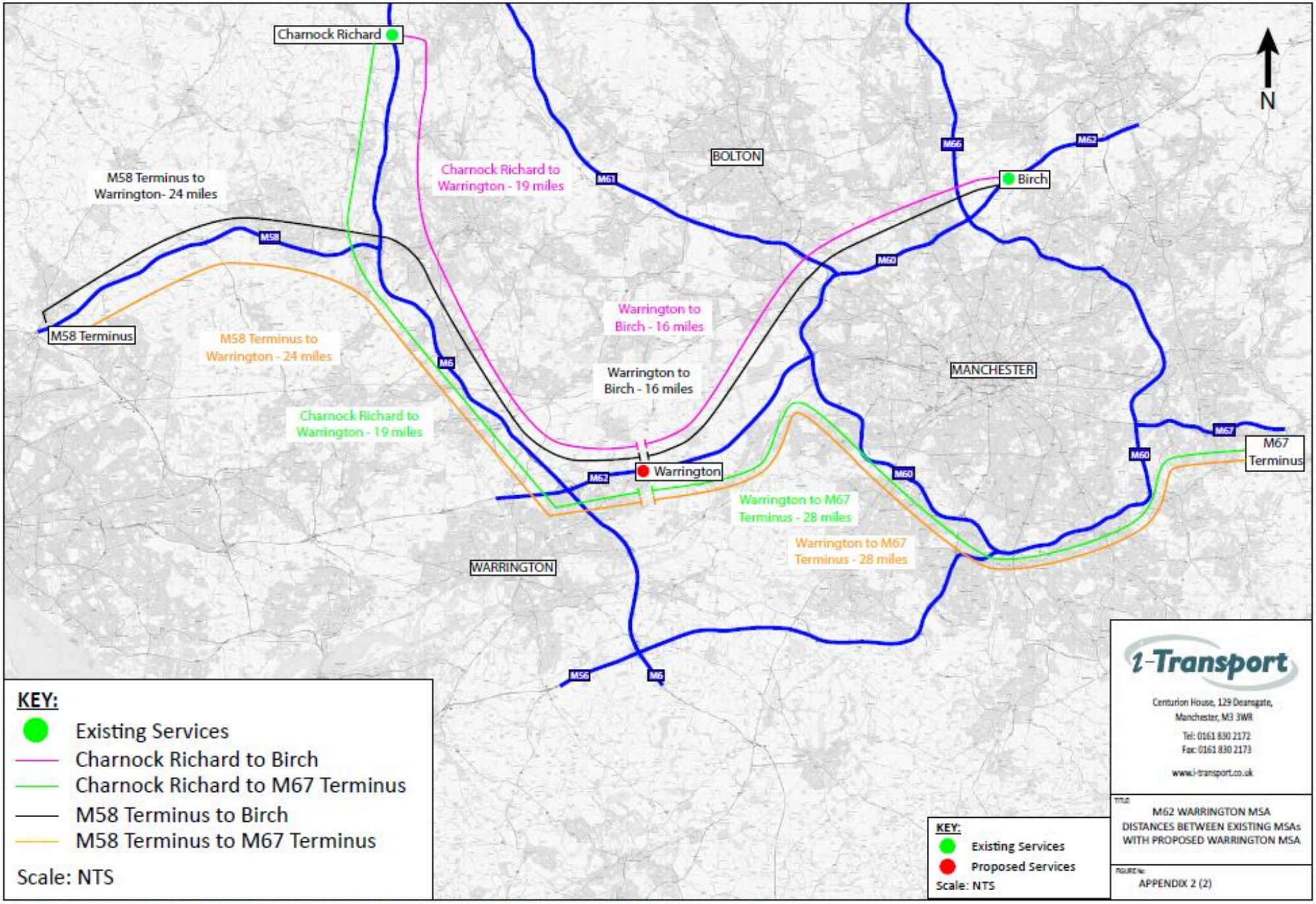
4.3. As previously discussed, Circular 02/2013 sets a maximum distance of 28 miles between motorway service areas; this typically translates to a maximum drive time of 30 minutes but on busy and congested sections of the Strategic Road Network, this can be shorter.

4.4. The diagram below (Plan 2) illustrates the current gaps between existing MSAs on the Strategic Road Network in this area:



Plan 2: Distances between Existing MSA

4.5. The diagram below (Plan 3) illustrates that the introduction of a new MSA at either Junction 11 of the M62 or on line to the east of the junction (defined as the Optimal Search Area) would reduce all **FOUR** of the established gaps on the corridors of the Strategic Road Network to policy compliant distances.



Plan 3: Distances between existing MSA and the Optimal Search Area

4.6. An MSA within the area identified at and to the east of Junction 11 of the M62 would achieve the following:

From	To	Current Route	Current Distance	New Route	Proposed Distance (range)
M58 Terminus (Switch Island)	Birch Services	M58/M6/M62/M60/M62	40 miles	M58/M6/M62	24 – 28 miles
Charnock Richard Services	Birch Services	M6/M62/M60/M62	35 miles	M6/M62	19 – 23 miles
M58 Terminus (Switch Island)	M67 Terminus (Hattersley Roundabout)	M58/M6/M62/M60/M67	52 miles	M62/M60/M62	25 - 28 miles
Charnock Richard Services	M67 Terminus (Hattersley Roundabout)	M6/M62/M60/M67	47 miles	M62/M60/M67	25 - 28 miles

Table 3. Gap reductions table

4.7. The diagram confirms that **outside** of this Optimal Search Area, all **FOUR** gaps could not be satisfied:-

- MSA provision within the M62 and M6 corridor to the west of the Optimal Search Area could only meet two of the public safety gaps and hence two public safety gaps would still exist (Birch to Charnock Richard and Birch to M58 Terminus);
- MSA provision within the M62 corridor to the east of the Optimal Search Area could also only meet two of the public safety gaps and hence two public safety gaps would still exist (Charnock Richard to M67 Terminus and Charnock Richard to Birch); and

- MSA provision within the M60 corridors north and south of the M62 / M60 interchange could only meet two of the public safety gaps and hence three public safety gaps would still exist (Charnock Richard to M67 Terminus and Charnock Richard to Birch).

4.8. Since the public safety need has been established within the North West area and it equates to **FOUR** clearly defined corridors then it is appropriate to initially consider alternative sites that could meet the full need (i.e. all **FOUR** gaps). This will have the benefits of:-

- Meeting all gaps and hence satisfying the full public safety need;
- Delivering a single MSA to meet this full need that has been established since 2010 and which remains unmet;
- Being located within the key M62 stretch of motorway that links the Liverpool and Manchester conurbations.
- Providing a single MSA to meet all gaps to optimise its viability and deliverability.

4.9. **On this basis, the Alternative Sites Assessment will focus upon the Optimal Search Area and hence other areas within the M62 / M6 corridors to the west; M62 corridor to the east; and the M60 corridor to the north and south of M62 Junction 12 have been excluded from the initial area of search for the purposes of this Alternative Sites Assessment**.

4.10. A high level assessment of these areas (outside of the Optimal Search Area) has been untaken to ascertain whether an on-line MSA facility could be accommodated with regard to the minimum desirable weaving lengths identified in TD22/06 "Layout of Grade Separated Junctions".

4.11. The high level assessment shows that the whole of M62 corridor to the east of the Optimal Search Area and the M60 corridors north and south of the M62 / M60 interchange fail to meet the minimum weaving length requirements and hence this reconfirms that they should be excluded from any further assessment. It also shows that the whole of the M62 corridor to the west of the Optimal Search Area does not meet the minimum weaving length requirements as does the majority of the M6 corridor other than one short section between Junction 25 and 26. This area has complications with regard to the existing slip-road

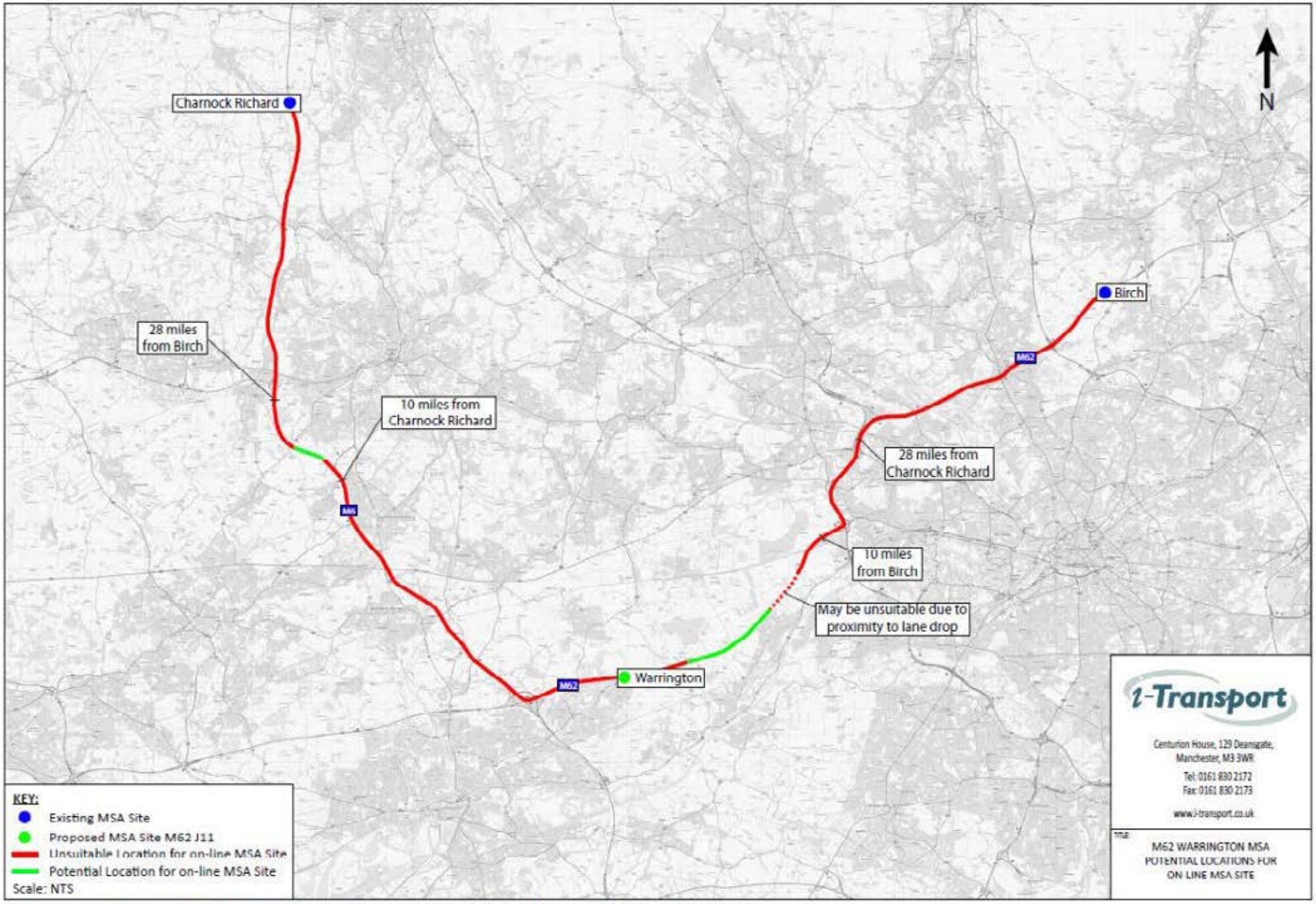
arrangements at Junction 25 and any potential new MSA junction slip-road lengths. Since this is only a very short stretch (3 miles); has potential DMRB complications; and could only meet two of the gaps (leaving two unmet) then this potential on-line opportunity is not taken forward in this Assessment.

4.12. Any potential off-line MSA sites at the M6 / M62 / M60 junctions to the east or west of the Optimal Search Area would be less beneficial than an off-line facility within the Optimal Search Area as they could only accommodate two, one or none of the gaps. For this reason, no potential off-line (Junction) sites outside of the Optimal Search Area have been taken forward in this assessment at this stage. This may be revisited if no suitable site for an off-line (Junction) MSA can be identified within the Optimal Search Area.

4.13. **Following consideration of the above as the means to meet all FOUR gaps, it is determined that it is only possible to meet all FOUR gaps by siting an MSA in the Optimal Search Area identified on the plan below. At present this encompasses the potential for:-**

1. **an on-line location area between Junction 11 and J12 of the M62;**
2. **an off-line location at Junction 11 of the M62 Motorway; and**
3. **The potential for a new Junction 11A off-line facility.**

4.14. **This catchment therefore forms the Optimal Search Area for the purposes of this Alternative Sites Assessment and the appraisal therefore proceeds on this basis.**



Plan 4: Optimal Search Area Plan

5. On-line Vs Off-line (Junction) Sites

5.1. In identifying an appropriate location for a new MSA, it is also relevant to consider the requirements of national planning policy guidance having regard to on-line and off-line (Junction) sites. In this respect, Paragraphs B13 – B15 of Circular 02/2013 are of relevance as is the advice within the NPPF (2019).

5.2. Circular 02/2013 advises that on-line (between junctions) service areas are considered to be more accessible to road users and as a result are more attractive to and conducive to encouraging drivers to stop and take a break. They also avoid the creation of any increase in traffic demand at existing junctions. Paragraph B14 notes that "*on the assumption that all other factors are equal, the Highways Agency has a preference for new facilities at on-line junction*". Paragraph B15 notes however that "*where an on-line service area cannot be delivered due to planning, safety, operational or environmental constraints, a site sharing a common boundary with the highway at a junction with the Strategic Road Network is to be preferred to the continued absence of facilities*". The latter is an off-line facility.

5.3. The NPPF (2019) confirms that the primary function of roadside services should be to support the safety and welfare of the road user but it also seeks to promote sustainable transport, and hence it requires that the environmental impacts of traffic and transport infrastructure, and opportunities to promote walking, cycling and public transport use are also important through the location of significant development on locations which are or can be made sustainable, thereby limiting the need to travel and offering a genuine choice of transport modes. In this regard the NPPF (2019) seeks to balance economic, social and environmental considerations to further the objective of sustainable development.

5.4. Leading Counsel instructed by Extra MSA Group (14th May 2019 – paragraphs 12 – 14) has considered this issue and concludes as follows:

> "*12. Annex B of the Circular at B13 to B15 provides that where competing MSA sites are under construction, the Highways Agency has a preference for on-line locations over off-line locations. It must however be noted that, firstly, this is a "preference" only (i.e. it is not a mandatory requirement that an on-line location must always be selected over an off-line location); and secondly the preference is subject to the very important caveat "on the assumption that all other factors are equal*".

"13. All other factors are rarely equal in life, and the sphere of planning is no exception. So, for example, the Circular itself at B15 acknowledges that an on-line facility may simply not be possible because of safety, operational or environmental constraints. We would go further and add that such a facility may be available, but the safety, operational or environmental disbenefits of such a location may outweigh the advantages that flow from being on-line as opposed to off-line, such that the latter location is considered preferable once regard is had to all matters that are relevant to what is ultimately a planning decision".

*"**14. If there is a choice to be made between on-line and off-line facilities, the planning authority must have regard to all material considerations relevant to that choice, and that will include not only the Highways Agency "preference" (understood subject to the express caveats provided in the Circular itself), but also all of the benefits that a particular off-line location may provide when compared with a particular on-line location. So, for example, on the specific facts of a case, the off-line location may provide the broader sustainability benefits when compared with the only on-line location that is in contention".***

On-line Sites

5.5. As noted above, the Highways Agency (now Highways England) have a preference for on-line locations. Older MSA facilities traditionally provided separate facilities for travellers on either side of the carriageway. However, in order to avoid the duplication of facilities and reduce the amount of land required for development, the majority of recent MSAs provide a Facilities Building and car park on one side of the Motorway with access from both sides of the carriageway.

5.6. Consideration should be given with any on-line sites to maximize the opportunity for accessibility by non-car borne modes for staff. Opportunities could include alternative modes of travel for staff (usually accessible from lower order roads / paths / cycleways with restricted access into the on-line MSA) to ensure that all staff movements will not have to be undertaken via the Strategic Road Network.

Junction (Off-line) Sites

5.7. The Highways Agency recognise that '*in circumstances where an on-line service area cannot be delivered due to planning, safety, operational or environmental constraints, a site sharing a common boundary with the highway at a junction with the strategic road network is to be preferred to the continued absence of facilities*'.

5.8. In considering off-line locations, the impact of any additional traffic using the junction to access an MSA will need to be fully assessed to ensure that the residual cumulative impact on the road network would not be severe. Such locations should also seek to ensure that they maximize the opportunity for non-car borne modes of travel for staff journeys.

The Adopted Approach

5.9. In undertaking this Alternative Sites Assessment, the advantages and constraints of both on-line and off-line (Junction) locations within the Optimal Search Area have been considered in order to robustly identify the most appropriate location in which to site an MSA to meet the acknowledged need. This Assessment has been undertaken within the context of both paragraphs B13 to B15 of Circular 02/2013 which gives preference to on-line locations subject to all other factors being equal, and the requirements of NPPF (2019) in relation to sustainable development principles. This Assessment is set out at Section 8 of this Report.

6. Identifying Potential On-Line Sites

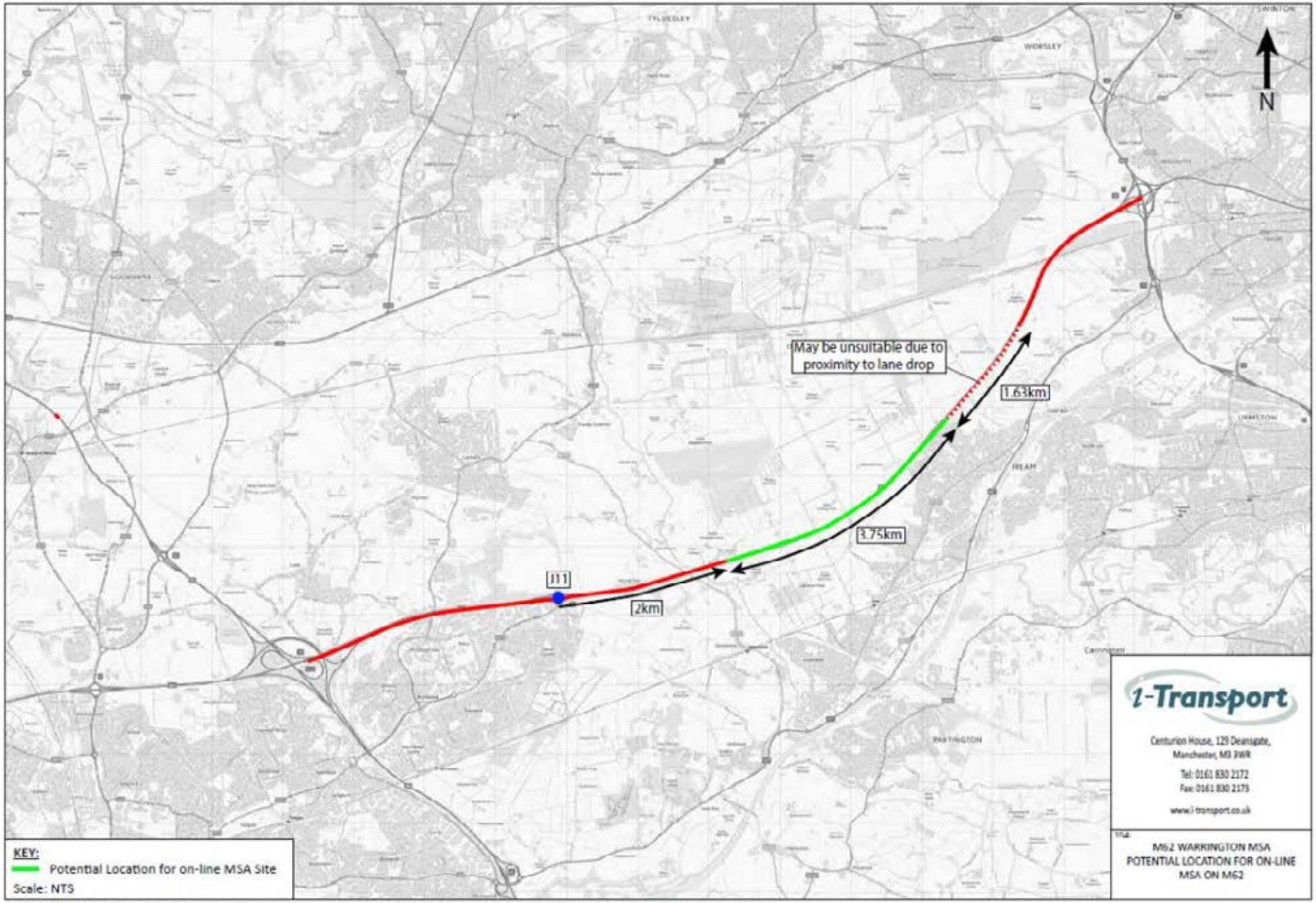
6.1. This section considers whether there are any suitable on-line locations within the Optimal Search Area identified along the 4 mile (6km) corridor of the M62 Motorway from Junction 11 to 3 miles west of the M62 / M60 junction where a new MSA could be accommodated.

Safety and Operational Considerations

6.2. There are a number of safety and operational constraints relating to the Strategic Road Network that need to be met in order for an on-line location to be deemed appropriate to accommodate a new MSA. Locations that do not meet prevailing standards must therefore be excluded from the site search process.

6.3. TD22/06 'Layout of Grade Separated Junctions' (DMRB, Volume 6, Section 2, Part 1) recommends minimum desirable weaving lengths of 2km. Where weaving lengths are less than this minimum desirable length then Departures from Standard are needed which has the potential to complicate delivery. In this context, sites which do not meet the minimum desirable weaving lengths have been excluded from further analysis.

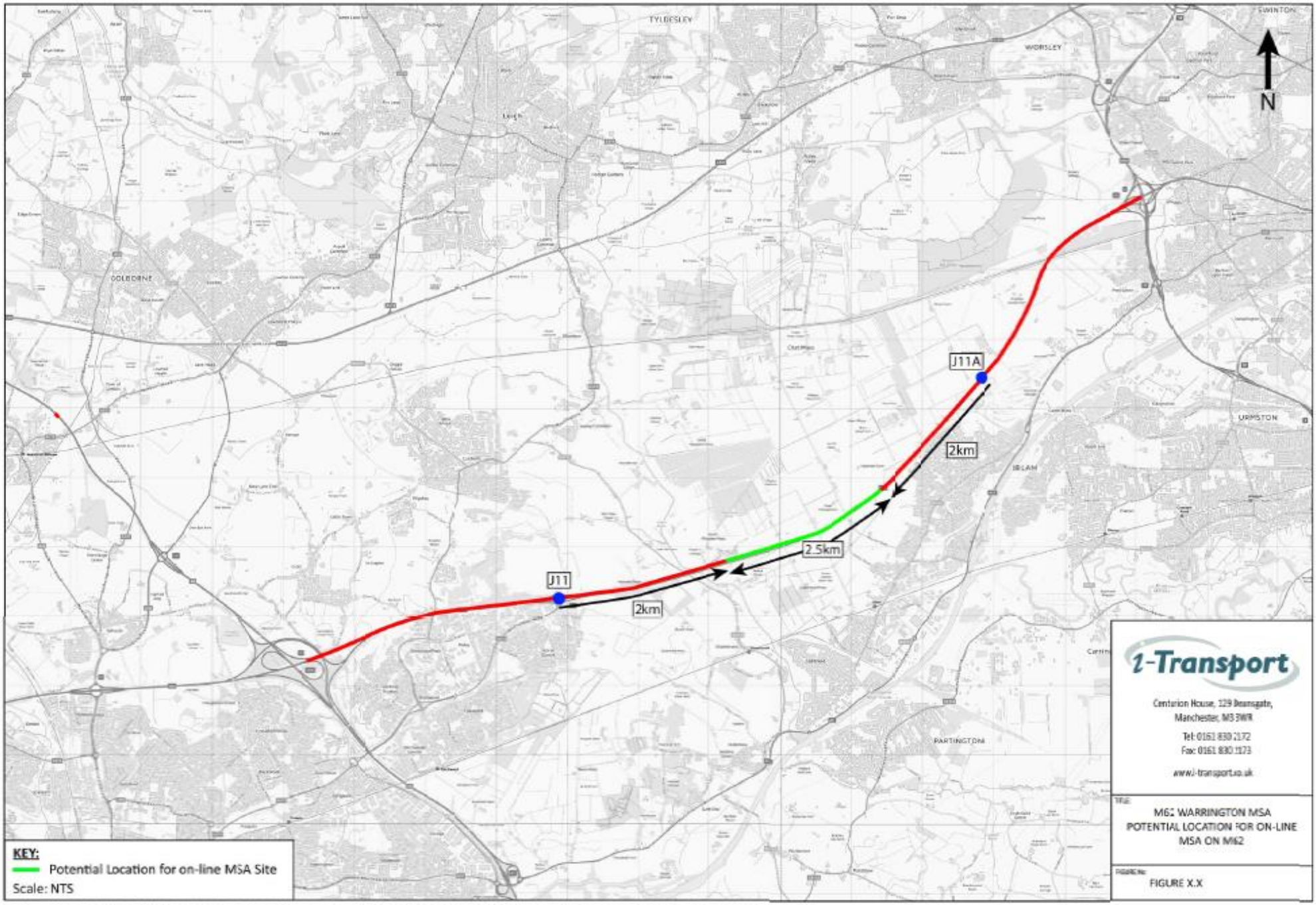
6.4. There is an area east of Junction 11 of the M62 which can potentially meet the DMRB requirements for a new motorway service area. This area is shown on Plan 5 below



Plan 5 – On line opportunities within the Optimal Search Area

6.5. This area is approximately 4 miles (6.5 km) in extent as noted above. Outside of this area both to the east and west, a potential new motorway service area would not meet the minimum weaving length requirements of Design Manual for Roads and Bridges.

6.6. This area has however been further refined as shown on Plan 6 to reflect the potential for a new Junction 11A on the M62. The potential for this Junction will be addressed in more detail in the next section but analysis by i-transport has shown that an area of approx. 1.5m (2.5km) of the M62 could accommodated a potential on-line motorway service area even with a new Junction 11A in place.



Plan 6: On line potential within Optimal Search Area

6.7. The area shown on Plan 6 is therefore confirmed as the only area with potential to become an on-line motorway service area within the Optimal Search Area.

Conclusions

6.8. Paragraph B6 of the Circular 02/2013 indicates that the requirements of the Design Manual for Roads and Bridges must be met in respect of junction separation.

"The Highways Agency therefore recommends that the maximum distance between motorway service areas should be no more than 28 miles. The distance between services can be shorter, but to protect the safety and operation of the network, the access/egress arrangements of facilities must comply with the requirements of the Design Manual for Roads and Bridges including its provisions in respect of junction separation" (emphasis added).

6.9. **The above assessment shows that within the Optimal Search Area, there is a stretch of the M62 that could in principle provide an on-line MSA and still comply with the requirements of the Design Manual for Roads and Bridges which must be met in respect of junction separation.** This is however complicated by the Greater Manchester Spatial Framework (Jan 2019) proposals which identify the potential for a new junction in this location which would change the separation distances between junctions. I-transport have given consideration to this potential new Junction 11A and have refined the potential on-line area of potential further as shown on Plan 6. **This refined area of potential is taken forward for consideration within the Alternative Sites Assessment in Section 8 of this Report. All areas to the east and west of this area do not comply with the requirements of the Design Manual for Roads and Bridges and hence are not taken forward in the Alternative Sites Assessment**.

7. Identifying Potential Off-line (Junction) Sites

7.1. Following the consideration of on-line locations in Section 6, this Section now considers whether there are any suitable off-line (Junction) locations within the Optimal Search Area. Within the Optimal Search Area there is only one current junction of the M62 (Junction11) where a new MSA could be accommodated. Off-line (Junction) locations are defined in Paragraph B15 of Circular 02/2013 as sites that share a common boundary with the highway at a junction with the Strategic Road Network.

7.2. The Greater Manchester Spatial Framework (January 2019) however identifies the potential for a new motorway junction on the M62 to the east of Junction 11 to serve Port Salford. We have referred to this as Junction 11A for the purposes of this assessment and identified it on Plan 6 (earlier). Whilst this junction does not currently exist, for completeness, it too is assessed.

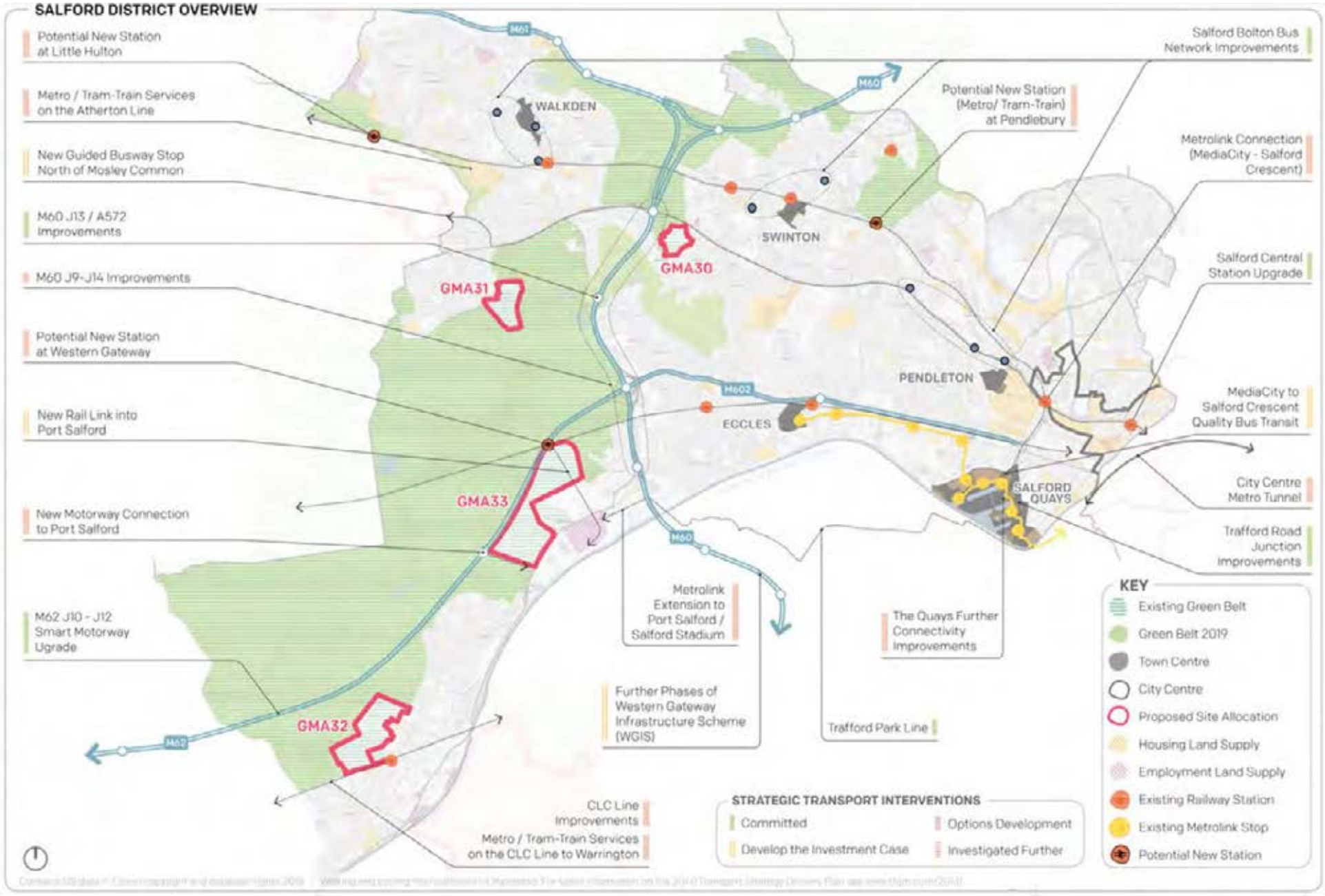


Figure 11.8 Illustrative overview of proposals in Salford

Junction 11

7.3. Junction 11 is an all movements roundabout providing access to the south to the A574 (Birchwood Way), a closed stub access to the north and Silver lane as a fifth arm.

The following four quadrants of land have been identified around Junction 11:

- Land North East of M62 (NE Quadrant)
- Land North West of M62 (NW Quadrant)
- Land South East of M62 (SE Quadrant)
- Land South West of M62 (SW Quadrant)

7.4. **The North East Quadrant** has the benefit of a stub access onto Junction 11 and is agricultural land free from any buildings. It **has therefore been taken forward into the Alternative Sites Assessment in Section 8 of this Report.**

7.5. **The North West Quadrant** also has the benefit of a stub access onto Junction 11. It is a former landfill site that has been restored and is the subject of ongoing aftercare. **It has therefore been taken forward into the Alternative Sites Assessment in Section 8 of this Report**.

7.6. **The South West Quadrant** is fully developed as part of the Birchwood Technology Park and hence it cannot accommodate an MSA. **This SW Quadrant has not been taken forward for further assessment**.

7.7. **The South West Quadrant** is bounded by the Gorse Covet residential area (Inglewood Close) and comprises the Gorse Covet Mounds which are owned and looked after by the Woodland Trust. Whilst the environmental quality of the quadrant and its ownership by the Woodland Trust as well as its recreational use by the public is unlikely to mean that it can be developed as an MSA, **this SE Quadrant has been taken forward for further assessment for completeness.**


Site 3
Site 2
Site 4
Walkers Snack Foods
Roanza Truck and Van
Yodel
G&J Distillers
M62
Holcroft Ln
Daten Ave
Google

New Junction 11A

7.9. Junction 11A does not currently exist but the potential for a new junction to support Port Salford is being considered as part of the Greater Manchester Spatial Framework (GMSF - Jan 2019). We have made efforts to understand more about the rationale for and nature of this junction from Highways England and also from the Greater Manchester Combined Authority. It is understood that the potential for a new Junction 11A is being promoted by the landowners, Peel Holdings, and Salford Council as a means of enabling development at Port Salford. It is further understood from Highways England that the new junction has no status within their activities and that they have seen nothing more than the schematic representation in the GMSF. They have not had sight of any preliminary feasibility engineering drawings, and hence they have not undertaken any technical consideration of the concept. They indicate that a Transport Study Task Group has been set up to consider the implications of the various GMSF proposals and their implications on the Strategic Road Network. The potential new junction has no funding support from Highways England (HE). The general location of the new junction is shown on the GMSF (Jan 2019) Salford District Overview plan (page 290- extract shown earlier in this Report).

7.10. In light of the above, we consider that a realistic potential process and timeline for delivery of a new Junction at this point is as follows:-

1. Evaluation of need for the new junction to support the Port Salford draft allocation (GMA 33) as part of the GMSF process – 2019 – 2021.

2. Consideration of the benefits of the new Junction as part of the North West Quadrant Study – 2019 – 2021.

3. Confirmation of the justification for the new junction (scheme objectives) – 2021.

4. Outline Business Case; Scheme development; Full Business Case; Design development; Planning Permission / Development Consent Order; consultation; Procurement; Build; Completion and Opening – 2021 – 2028 (based upon experience from Junction 7a of M11)

7.11. The likely cost of such a Junction could be £40 - £50m and at present it has no Highways England funding support. Such funding support could potentially be in the form of Highway

England's Road Investment Scheme (RIS) Programme. The next RIS period runs from 1 April 2020 to 31 March 2025 and finalization of that programme is occurring during 2019. In light of HE's comments on the status of the new Junction scheme it is unlikely to be part of the next RIS package (RIS 2) and hence it would have to seek to be part of RIS 3 which runs from 2025 – 2030. **Whilst it may be possible for this timescale to be accelerated if no public sector funding was sought and design work was pursued at risk, the above would indicate that an appropriate assumption for the completion of a new junction at J11A is likely to be around 2028. It is recognised that this could either be advanced or slipped and hence for the purposes of this Assessment, we consider this Junction potential to be in the medium term (i.e. at least 5 years away).**

7.12. The following three quadrants of land have been identified around Junction 11A:

- Land North of M62 (N Quadrant)
- Land South East of M62 (SE Quadrant)
- Land South West of M62 (SW Quadrant)

7.13. **The Northern Quadrant** is agricultural land with scattered farm buildings. It **has therefore been taken forward into the Alternative Sites Assessment in Section 8 of this Report.**

7.14. **The South East Quadrant** is bounded by the M62 to the north, and Barton aerodrome to the south. It comprises part of the Barton Golf Course. It **has therefore been taken forward into the Alternative Sites Assessment in Section 8 of this Report**.

7.15. **The South West Quadrant** is bounded by the M62 to the north, and residential properties to the south. It comprises part of the Barton Golf Course. It **has therefore been taken forward into the Alternative Sites Assessment in Section 8 of this Report**.


Site 6
Site 5
Site 7
Peel Green Cemetery
Liverpool Rd
A J Bell Stadium
BARTON MOSS
SS Sports Horses
Google
Davyhulme Park Golf Club
Davyhulme Rd
M62
M60

Conclusions

7.16. Access can be gained to/from the Strategic Road Network at Junction 11 of the M62 and this is the only current Junction within the Optimal Study Area. Four sites (Quadrants) have been identified around Junction 11 of the M62 Motorway but the SW Quadrant has been rejected at this stage as incompatible with accommodating an MSA due to it being fully developed. The NE, NW and SE Quadrants have however been taken forward for more detailed consideration in the next stage of the assessment.

7.17. The potential for a new junction on the M62 east of Junction 11 (referred herein as Junction 11A) is being considered as part of the Greater Manchester Spatial Framework (GMSF Jan 2019). Whilst it does not currently exist, the N, SE and SW Quadrants have however been taken forward for more detailed consideration in the next stage of the assessment.

7.18. These potential sites will be considered in more detail in the following section in order to establish whether they are suitable to accommodate an MSA.

8. Alternative Sites Assessment

8.1. Section 7 has identified an on-line section of the M62 (east of Junction 11); the NE, NW and SE Quadrants of Junction 11 of the M6 Motorway; and the N, SE and SW Quadrants of a potential new junction 11A on the M62 as potentially being capable of accommodating an MSA to meet the need identified. This Section will now consider the characteristics and potential of these sites to accommodate a new MSA to identify the most sequentially preferable location upon which to site such a facility.

Assessment Methodology

8.2. In order to assess the potential alternative sites, the following four stage methodology has been adopted:

Stage 1 considers the ability of the identified locations to meet the policy defined need having regard to the maximum distances between MSAs set out in Circular 02/2013.

Stage 2 considers whether there are any key planning or environmental constraints that could prevent the development of any of these sites unless no other sites are available.

Stage 3 considers whether there are any other planning, highways, engineering safety, operational or environmental constraints that would preclude development on any of these sites having regard to the list of criteria set out in Circular 02/2013.

Stage 4 draws together all of the above information and identifies a preferred location for a new MSA to meet the identified policy need. This is the site that best meets the need with the least development constraints.

Sites to be Assessed

Based upon the analysis undertaken in Sections 6 and 7, the following sites will be considered as part of this assessment:

On-Line Locations:

- Section of the M62 east of Junction 11 (Site 1).

Existing Junction Locations:

- Junction 11 North East Quadrant (Site 2)
- Junction 11 North West Quadrant (Site 3)
- Junction 11 South East Quadrant (Site 4)

Potential new Junction locations:-

- Junction 11A Northern Quadrant (Site 5)
- Junction 11A South East Quadrant (Site 6)
- Junction 11A South West Quadrant (Site 7)

Alternative Sites Assessment

Stage 1 – Ability to Meet the Identified Need: Locational Requirements

8.3. Circular 02/2013 sets out that MSAs should be located at a maximum distance of 28 miles which can typically be a maximum of 30 minutes travelling time but on busy and congested sections of the Strategic Road Network is often much less. The starting point for this exercise is therefore to establish maximum distances between existing and potential MSAs locations in order to identify whether the potential sites are able to address the policy defined need. This exercise is set out in Table 3 below. Distances that exceed 28 miles are not fully policy compliant as they would not meet all of the identified need.

From	To	Current Route	Current Distance	On-line (Site 1) Proposed Distance	Junction 11 MSA (sites 2, 3 and 4) Proposed Distance	New Junction 11A (sites 5, 6 and 7) Proposed Distances
M58 Terminus (Switch Island)	Birch Services	M58/M6/M62/M60/M62	40 miles	26 – 28 miles	24 miles	28 miles
Charnock Richard Services	Birch Services	M6/M62/M60/M62	35 miles	21 – 23 miles	19 miles	24 miles
M58 Terminus (Switch Island)	M67 Terminus (Hattersley Roundabout)	M58/M6/M62/M60/M67	52 miles	26 – 28 miles	24 miles	28 miles
Charnock Richard Services	M67 Terminus (Hattersley Roundabout)	M6/M62/M60/M67	47 miles	25 – 27 miles	28 miles	24 miles

Table 4: Maximum distances between existing MSAs and potential new MSA locations (miles)

8.4. Upon consideration of the above information, it is concluded that a new MSA in an on-line location within Site 1; an off-line location at Junction 11 (Sites 2, 3 and 4); or an off-line location at a potential new Junction 11A (Sites 5, 6 and 7) would meet the identified policy need to provide a new MSA to serve the North West area. On this basis, no sites have been excluded from Stage 1 of this assessment and all are carried forward for further review at Stage 2.

Stage 2 – Identifying Potential Sites for Assessment: Key Characteristics

8.5. Paragraph B15 of Circular 02/2013 establishes that planning, safety, operational and environmental constraints are all factors that need to be taken into account when determining whether on-line locations are most suitable to accommodate a new MSA or whether any off-line Junction locations perform better against these requirements. Paragraph 16 of Circular 02/2013 also recognizes the need to promote sustainable transport solutions through Local Plans and paragraphs 28 – 30 confirm that robust travel plans should be prepared to promote the use of sustainable transport modes such as walking, cycling and public transport.

8.6. The following planning and environmental constraints have been identified as potentially **precluding** development on a site unless no other more suitable sites are available:

Planning:

- Land with an existing use (other than agricultural land).
- Land with planning permission that is committed for alternative development and is likely to come forward.
- Land containing Heritage Asset / Listed Structures or located within the curtilage of a Listed Structure.

Environmental:

- Sites located within Flood Zone 3.
- Other significant environmental designations e.g. SSSIs.

Site area:

- Sites of less than 12 ha have also been excluded from the assessment as it is not possible to accommodate an MSA with the necessary facilities on sites of less than this.

8.7. It has been established in Section 6 that there is one potentially suitable on-line location (Site 1) along the M62 corridor within the Optimum Search Area where a new MSA could be

accommodated. Stage 2 of this assessment therefore focuses upon this location. This exercise is therefore set out below.

Stage 2 Assessment of Potential Site

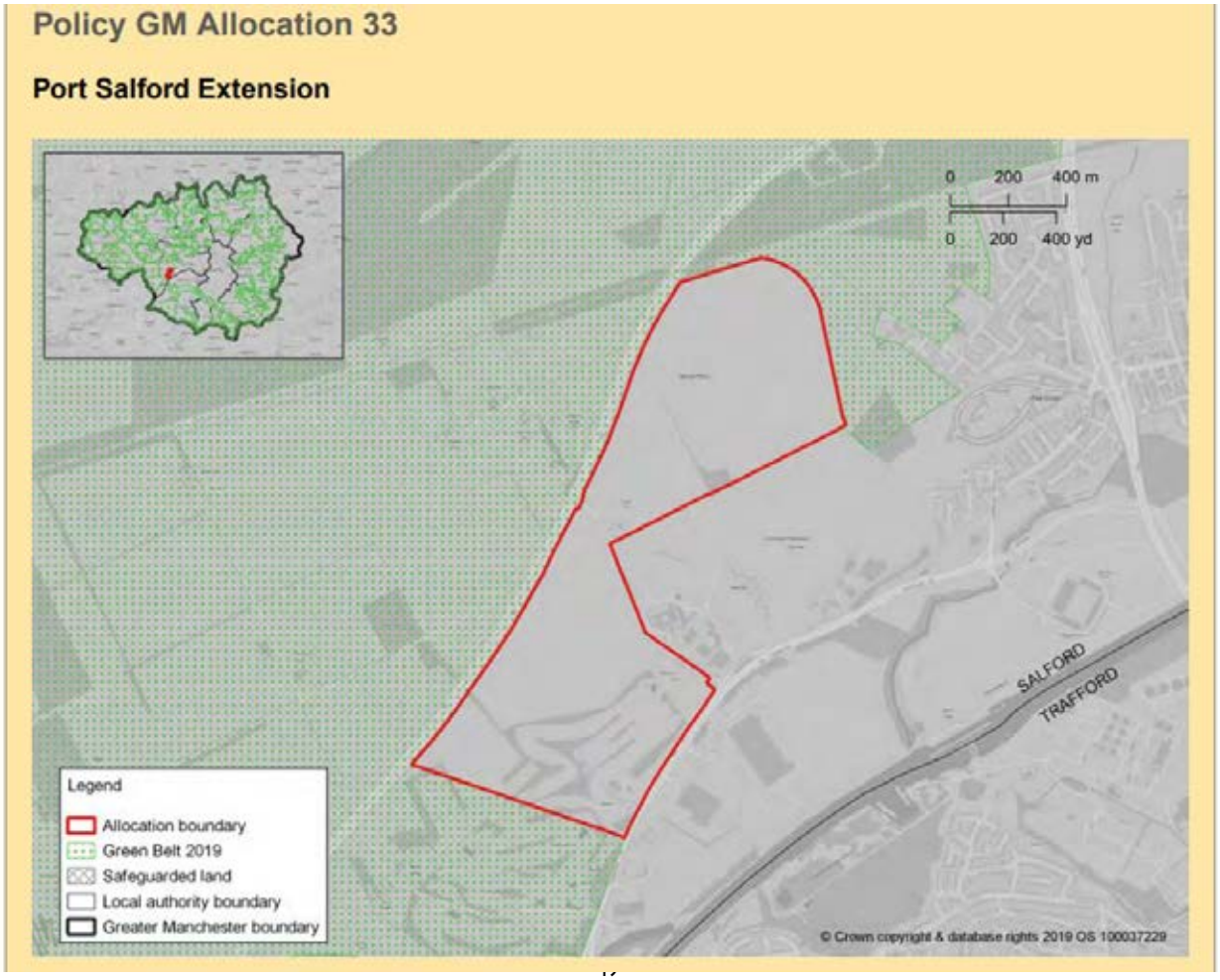
8.8. The following paragraphs consider Site 1 against these planning and environmental constraints that have been identified as potentially **precluding** development. This will establish if any areas within Site 1 should be set aside at this stage of the Assessment.

Planning: Land with an Existing Use

8.9. None of the areas within Site 1 are built out and hence none of the site is therefore unavailable.

Planning: Land with a Committed Use

8.10. Land within the Southern Quadrant of Site 1 forms part of the draft Greater Manchester Spatial Framework (GMSF Jan 2019) housing allocation (GM Allocation 33) to provide for 1600 new dwellings. On this basis this part of the Site 1 is unlikely to be available to accommodate an MSA. On this basis, this element of land within this Site is excluded at Stage 2 and will not be assessed any further.



Planning: Heritage Constraints

8.11. None of Site 1 falls within a Grade II Registered Park and Garden. Grade II Listed Great Woolden Hall and Scheduled Ancient Monument are located approx. 360m to the south of the site across the M62. Grade II Listed Glazebrook Station is located approx. 440m to the west of the site. These are not considered showstoppers at this stage.

Environmental: Flood Zone 3

8.12. Site 1 is located within Flood Zone 1.

Environmental: Other Significant Environmental Designations e.g. SSSI

8.13. Part of the southern quadrant of Site 1 is within the Holcroft Moss SSSI Impact Risk Zone, approx. 770m to the west but this is not considered to be a showstopper at this stage.

Site Area

8.14. Site 1 is of the requisite site area to accommodate an MSA.

Stage 2 Assessment Summary

8.15. Site 1 is not currently being promoted as an MSA and hence further assessment is required of its delivery potential. One part of Site 1 is being promoted for an alternative use (residential) and hence it has been discounted, but the remainder of Site 1 will be taken forward for more detailed assessment to ascertain whether it is deliverable to meet the identified need and whether in comparison to any off-line (Junction) sites, it is the most appropriate location to accommodate an MSA.

Stage 3 – Alternative Sites Assessment

8.16. Following the Stage 1 and 2 assessments, the following sites have been taken forward for Stage 3 assessment:

On-Line Locations:

- Section of the M62 east of Junction 11 (Site 1) (reduced site area).

Junction Locations:

- Junction 11 North East Quadrant (Site 2)
- Junction 11 North West Quadrant (Site 3)

- Junction 11 South East Quadrant (Site 4)

Potential new Junction locations:-

- Junction 11A Northern Quadrant (Site 5)
- Junction 11A South East Quadrant (Site 6)
- Junction 11A South West Quadrant (Site 7)

These sites are illustrated on the plan below:


Leigh
Worsley Golf Club
Cleavley Athletics Track
M60
Glazebury
AJ Bell Stadium
intu Trafford
Site 5
Site 6
Site 7
M62
Davyhulme
Park Golf Club
SS Sports Horses
Cadishead and Little
Woolden Moss
Culcheth
Site 1
Urmston
Irlam
M62
Site 3
Site 2
M61
Site 4
Carrington
Birchwood Park
Glazebrook
Risley
Cadishead
Carrington Moss

Assessment Criteria

8.17. The Stage 3 assessment will now consider whether there are any planning, highways, engineering safety, operational or environmental constraints that would preclude development on each of these sites having regard to the following criteria set out in Circular 02/2013:

Planning Criteria

- Green Belt Status – whether there are any non-Green Belt alternatives to meet the MSA need within the Optimal Search Area. It is essential to establish each site's Development Plan status at an early stage in order to ensure that non-Green Belt sites are prioritised for development before Green Belt sites are considered for development.

- Existing Use – sites that are unavailable or committed for alternative development have been excluded at Stage 2. The existing use of the site is however also an important consideration for Stage 3.

- Planning Policy Position – consideration of the existing and emerging planning policy position can be useful in determining whether land may be considered to be an appropriate development site.

- Impact on Adjacent Uses – consideration needs to be given as to whether an MSA would be compatible with surrounding land uses and whether any sensitive uses need to be taken into account.

- Proximity of Residential Properties – given the 24 hour nature of an MSA, consideration needs to be given to the location of any existing properties in relation to any potential site.

- Impact on Heritage Assets – consideration needs to be given as to whether an MSA would have any significant adverse impact upon any surrounding Listed Buildings or Scheduled Ancient Monuments; albeit recognising that the M62 Motorway will already have a degree of impact upon setting.

- Relevant Planning History – consideration needs to be given as to whether planning permission has already been granted for alternative development upon any of the sites and if so, whether there are reasonable prospects of this development coming forward.

- Minimising the need for car borne travel – consideration needs to be given to whether sites can offer modal choice for staff in terms of public transport, walking or cycling alternatives to the private car or whether staff trips will be made by car which will require local trips being made on the Strategic Road Network.

Engineering, Safety and Operational Issues

- Highways Engineering – the potential of a site to be able to provide an appropriate access to an MSA in highway engineering terms needs to be considered.

- The ability of a site to provide safe access to an MSA is a key consideration. Key considerations include the layout of the junction and connecting roads; capacity on the Road Network; whether safe and suitable access can be achieved at a reasonable cost; the convenience of access / egress; and any impact of additional vehicular movements upon the Road Network.

Environmental Considerations

- Other Environmental Constraints – these include matters such as Flood Zone / Risk; Ecology and Bio-diversity; topography; ground conditions; existing infrastructure; agricultural land grade and any landscape and visual impacts.

8.18. This assessment is intended to provide a high level strategic comparison of sites which can then be used to prioritise suitable locations for a new MSA. Detailed site appraisals and potential layouts have not been produced for each site at this stage and full account has not been taken as to how any impacts could be mitigated although some consideration has been given to these matters where possible.

On-line Sites

Site 1 – Section of M62 East of Junction 11

Planning	Comment
Green Belt Impact	All the land is within the Green Belt within the Salford Unitary Development Plan (UDP). The Green Belt in this location is expansive and generally open in character. Development of an MSA in this location would have an adverse impact upon this openness. In terms of Green Belt purposes, development of the site for an MSA could result in sprawl of the built up area of Caddishead (dependent upon where the MSA was sited); and development will result in encroachment into the countryside. It is not considered that it would result in neighbouring towns merging into one another nor would it affect the setting and special character of historic towns.
Existing Use	The existing uses are predominantly agricultural.
Planning Policy Position	All the land is within the Green Belt within the Salford UDP. It is also subject to policy EN11 in relation to Mosslands. The Revised Draft Salford Local Plan proposes to retain the majority of the Site within the Green Belt (other than the proposed GMSF housing allocation (Allocation 32)).
Impact on Adjacent Uses	The Site is large and there are opportunities to mitigate impact upon residential properties (subject to detailed design).
Proximity of Residential Properties	The northern Quadrant accommodates scattered farm buildings and houses. The southern Quadrant abuts housing to the south and east.
Impact on Heritage Assets	Grade II Listed Great Woolden Hall and Scheduled Ancient Monument are located approx. 250m to the west and Grade II Listed Glazebrook Station is located approx. 440m to the west of the of the southern Quadrant of the Site.
Relevant Planning History	None applicable
Highways, Engineering, Safety and Operational Issues	**Comment**
Highways Engineering	Safe access: likely to be achievable with appropriate weaving distances to J11 and J12. Would require some land either side of the M62 and new bridge over mainline to access site (at significant cost).
Highways Safety and Impact on the Road Network	Impacts: Likely to be acceptable following completion of Smart Motorway improvements.
Environmental	**Comment**
Flood Zone	The Site is within Flood Zone 1.

Other Constraints	The western half of the Site is within Holcroft Moss SSSI Impact Risk Zone, approx. 680 - 770m to the west and Bedford Moss SAC approx. 1.8km to the north (of the northern quadrant).
Conclusion	
Since the Site lies within the Green Belt, then the development of an MSA would be considered to be inappropriate development and as such, very special circumstances would need to be provided to show that the potential harm to the Green Belt by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations. Development of an MSA in this location could have a significant adverse impact upon the openness of the Green Belt in this location as well as adverse impact upon two of the purposes of Green Belt (unrestricted sprawl of large built up areas; and safeguarding countryside from encroachment). Location within the Green Belt would not preclude development if such very special circumstances were demonstrated. There are no other environmental or operational constraints that could not be addressed at a more detailed stage. As such the site is in principle capable of accommodating an on-line MSA.	

Table 5: Site 1

On-Line Site Summary- Site 1

8.19. The Site lies within the Green Belt and due to its open character, there would be policy harm related both to impact upon openness and to two Green Belt purposes from the development of this site as an MSA. There is sufficient land to accommodate an MSA within Site 1 and it may be possible to mitigate the environmental and heritage issues raised with this Site.

8.20. Site 1 is in several ownerships. There is no evidence at this stage that their interests are aligned nor that they would support an MSA on the Site. Whilst the Site has the potential to accommodate an MSA, there is no evidence that it will be brought forward as a potential MSA in the near future. The multiple ownership delivery constraints associated with this Site and the significant highway engineering costs are relevant material considerations in this Alternative Sites Assessment.

8.21. In light of the above assessment, it can be concluded that:-

- Whilst Site 1 has the potential to accommodate an on-line MSA there will be adverse Green Belt impacts which would need to be overcome by very special circumstances but it is **unlikely to be delivered in the short term** to meet the identified need

due to multiple ownerships and significant highway reengineering costs associated with the Site.

Off-Line (Junction) Sites

Site 2 - Junction 11 North East Quadrant

Planning	Comment
Green Belt Impact	The Site lies within the Green Belt in the adopted Warrington Local Plan Core Strategy. In the Green Belt Assessment (June 2017) that supports the draft Warrington Local Plan the site is shown as part of Parcel 2B which has a "moderate contribution" to the Green Belt but Appendix B subdivides Parcel 2B and identifies the site as WR14. WR14 is identified as having a "weak" contribution to Green Belt.
Existing Use	The Site is currently in agricultural use.
Planning Policy Position	The Site is Green Belt within the adopted Warrington Local Plan Core Strategy. It is proposed to be retained as Green Belt in the submission draft Warrington Local Plan (2017 – 2037).
Impact on Adjacent Uses	The adjacent uses are open in nature and hence an MSA would not present a constraint on adjacent uses. The alignment of HS2 is proposed along the northern boundary of the Site.
Proximity of Residential Properties	There are no existing residential properties in close proximity to the site.
Impact on Heritage Assets	Grade II Listed Hope Farmhouse is located approx. 1.6km from the western boundary of the site and hence an MSA will have no impact upon this heritage asset.
Relevant Planning History	Planning permission was refused and an appeal dismissed (August 2008) for the extension of the adjacent Risley Landfill onto the Site. The Inspector considered that "very special circumstances" had not been proven in that case.
Highways, Engineering, Safety and Operational Issues	**Comment**
Highways Engineering	Safe access: access could be taken via northern stub arm of M62 J11. Should be possible to create a safe access at reasonable cost. Convenience of access / egress: access directly available from circulatory carriageway of M62 J11 roundabout.
Highways Safety and Impact on the Road Network	Impacts: MSA traffic could be accommodated at roundabout junction, with some potential improvements (signalisation) required.
Environmental	**Comment**

Flood Zone	All the Site is within Flood Zone 1.
Other Constraints	The Site is agricultural land with a public footpath running along its western edge. The site also accommodates a gas pipeline running north to south towards its eastern edge. There are no nationally or local nature designations on the site. A detailed Environmental Assessment of the Site and MSA proposal has been undertaken which shows that there are no significant environmental issues that cannot be suitably mitigated.
Conclusion	
Since the Site lies within the Green Belt, then the development of an MSA would be considered to be inappropriate development and as such, very special circumstances would need to be provided to show that the potential harm to the Green Belt by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations. The Site has been shown in the Warrington Local Plan Green Belt assessment to have a "weak" contribution to the Green Belt. It does not lie within a strategic gap between settlements and its existing boundaries will preclude both unrestricted sprawl and the level of encroachment into the open countryside. The Site is visually well contained by the existing adjacent landforms and hence development of it as an MSA will not have a significant impact upon Green Belt openness. Location within the Green Belt would not preclude development if such very special circumstances were demonstrated. A full Transport Assessment has been undertaken to show that there are no highways engineering, safety and operational issues that would preclude development. A detailed Environmental Assessment of the Site and MSA proposal has been undertaken which shows that there are no significant environmental issues that cannot be suitably mitigated. There are no over-riding planning considerations that would preclude development of the Site as an MSA.	

Table 6: Site 2

Site 3 - Junction 11 North West Quadrant

Planning	Comment
Green Belt Impact	The Site lies within the Green Belt in the adopted Warrington Local Plan. In the Green Belt Assessment (June 2017) that supports the draft Warrington Local Plan the site is shown as part of Parcel 2B which has a "moderate" contribution to the Green Belt.
Existing Use	The Site is a former landfill operated by Biffa.
Planning Policy Position	The Site is Green Belt within the adopted Warrington Local Plan Core Strategy. It is proposed to be retained as Green Belt in the submission draft Warrington Local Plan (2017 – 2037).

Impact on Adjacent Uses	The adjacent uses are open in nature and hence an MSA would not present a constraint on adjacent uses. The alignment of HS2 is proposed along the northern boundary of the Site.
Proximity of Residential Properties	There are no existing residential properties in close proximity to the Site.
Impact on Heritage Assets	The Site has been the subject of landfill and restoration and hence it is unlikely to have any remaining below ground heritage assets. Grade II Listed Hope Farmhouse is located approx. 645m from the western boundary of the Site and hence an MSA will have no impact upon this heritage asset.
Relevant Planning History	The Site has the benefit of planning permission (2008 / 13753) for waste disposal operations and restoration of the Site. The permission was the subject of a Section 106 Agreement and conditions requiring landscape restoration of it. The Section 106 Agreement also precludes any further landfilling or waste treatment development. The landscape restoration and wetland areas scheme has been approved pursuant to the discharge of conditions and the Section 106. The restoration works are now complete and aftercare obligations are in place during the site life required for the waste in the landfill to become inactive (currently 30 years).
Highways, Engineering, Safety and Operational Issues	**Comment**
Highways Engineering	Safe access: access could be taken via northern stub arm of M62 J11. Should be possible to create a safe access at reasonable cost. Convenience of access / egress: access directly available from circulatory carriageway of M62 J11 roundabout.
Highways Safety and Impact on the Road Network	Impacts: MSA traffic could be accommodated at roundabout junction, with some potential improvements (signalisation) required.
Environmental	**Comment**
Flood Zone	All the Site is within Flood Zone 1.

Other Constraints	The landscape restoration scheme creates a new woodland, grassland and wetland habitat along with controlled recreational use through new paths within the development. The Site has been the subject of landfill and is being monitored for both settlement and gas.
Conclusion	
Since the Site lies within the Green Belt, then the development of an MSA would be considered to be inappropriate development and as such, very special circumstances would need to be provided to show that the potential harm to the Green Belt by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations. The Site has been shown in the Warrington Local Plan Green Belt assessment to have a "moderate" contribution to the Green Belt. It does not lie within a strategic gap between settlements and its existing boundaries will preclude both unrestricted sprawl and the level of encroachment into the open countryside. The Site comprises a large mound in what is an otherwise relatively flat landscape. Development of an MSA on raised land will have an adverse impact upon the openness of the Green Belt. Location within the Green Belt would not preclude development if such very special circumstances were demonstrated. From the above assessment, it is clear that the Site cannot be developed as an MSA due to its former use as a landfill which would mean very difficult ground conditions and highly expensive stabilisation and also its recent restoration and ongoing aftercare (including controlled public access) obligations mean that it is unavailable as it is now a landscape, bio-diversity and recreational asset. The impact of development of an MSA upon Green Belt openness and purposes would be greater for this Site than for Site 2.	

Table 7: Site 3.

Site 4 - Junction 11 South East Quadrant

Planning	Comment
Green Belt Impact	The Site lies partially within the Green Belt and partially within an area identified as a Local Wildlife Site in the adopted Warrington Local Plan. In the Green Belt Assessment (June 2017) that supports the draft Warrington Local Plan the Site is shown as part of Parcel 3A which has a "Strong" contribution to the Green Belt.
Existing Use	The Site comprises in part, the Gorse Covert Mounds which is a bio-diversity and recreational area owned by the Woodland Trust. The rest of the site is agricultural land.
Planning Policy Position	The Site is partially Green Belt within the adopted Warrington Local Plan Core Strategy and it is proposed to be retained as Green Belt in

	the submission draft Warrington Local Plan (2017 – 2037). The rest of the site is a Local Wildlife Site in the adopted Warrington Local Plan Core Strategy and it is proposed to be retained as such in the Submission Draft Warrington Local Plan (2017 – 2037).
Impact on Adjacent Uses	The adjacent uses are residential properties on Inglewood Close. The 24 hour uses at an MSA could have a significant adverse amenity effect on them. Similarly the Gorse Covert Mound contains statutorily protected species such as Great Crested Newts and hence a new access from Junction 11 of the M62 could adversely affect these protected species.
Proximity of Residential Properties	There are existing residential properties in close proximity to the Site which could be adversely affected by an MSA.
Impact on Heritage Assets	Grade II Listed Hope Farmhouse located approx. 1.8km from the western boundary of the Site and hence an MSA will have no impact upon this heritage asset.
Relevant Planning History	The Pestfurlong Mounds which form part of Gorse Covert Mounds are manmade, created from spoil heaps formed from the demolition of a bomb factory in the 1960s.
Highways, Engineering, Safety and Operational Issues	**Comment**
Highways Engineering	Safe access: Realignment and upgrade of Silver Lane required to form 5th arm to roundabout. Would likely require a dual carriageway access, in addition to the future dualled Birchwood Way immediately adjacent, which will be difficult to achieve requisite standards. Convenience of access / egress: access directly available from circulatory carriageway of M62 J11 roundabout
Highways Safety and Impact on the Road Network	Impacts: will create a relatively heavily trafficked roundabout arm in very close proximity to westbound slip-road, Birchwood Way (dual carriageway) and westbound slip-road. This would lead to several conflicting traffic movements needing to be accommodated within a limited space; adequate mitigation potentially difficult to identify and provide.
Environmental	**Comment**
Flood Zone	All the Site is within Flood Zone 1.

Other Constraints	The Gorse Covert Mounds provide recreational walks as well as providing woodlands, ponds and meadows. The Gorse Covet Mounds also include Pestfurlong Hill and Moss which are protected as a Site of Importance for Nature Conservation. The Woodland Trust confirm that the area contains bog land, woodland, ponds and meadow. They also confirm that it contains marsh marigolds, Great Crested Newts, orchids and many bird species. The Site is owned by the Woodland Trust and maintained for bio-diversity and public access. Part of the Site has been created from demolition material from a former bomb factory and hence may suffer from settlement and landfill gas.
Conclusion	
The Gorse Covert Mounds are protected for their bio-diversity value. They also provide public access for recreational purposes. They are owned by the Woodland Trust for the above uses. These uses are incompatible with an MSA and its access from Junction 11 of the M62. Residential properties lie immediately adjacent to the Site which could also be incompatible with a 24 hour MSA. Access from Junction 11 of the M62 is difficult to achieve due to the junction arrangements of the Birchwood Way and its recent improvements. Any access corridor from the Junction could have adverse impacts upon the Gorse Covert Mounds area. Since part of the Site lies within the Green Belt, then the development of an MSA would be considered to be inappropriate development and as such, very special circumstances would need to be provided to show that the potential harm to the Green Belt by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations. The Site has been shown in the Warrington Local Plan Green Belt assessment to have a "strong" contribution to the Green Belt. It forms part of the strategic gap between Warrington and Caddishead. It has no strong western boundaries and hence development of it could result in both unrestricted sprawl and a level of encroachment into the open countryside. Location within the Green Belt would not preclude development if such very special circumstances were demonstrated. In light of the above assessment, the Site cannot be developed as an MSA due to the restricted access opportunities; environmental quality of the land in question, ownership by the Wildlife Trust, current use for recreation and public access; and the proximity to existing residential properties.	

Table 8: Site 4.

Off-line Site Summary – Sites 2, 3 and 4.

8.22. In light of the above assessment, it can be concluded that:-

- **Site 2 (NE Quadrant of Junction 11) <u>can accommodate an MSA</u>** without any planning, highways, engineering safety, operational or environmental constraints that would preclude development.

- **Site 3 (NW Quadrant of Junction 11) <u>cannot accommodate an MSA</u>** due to the former landfill activities within the Site and the restoration and aftercare proposals that will be retained in place during the Site life required for the waste in the landfill to become inactive (currently 30 years).

- **Site 4 (SE Quadrant of Junction 11) <u>cannot accommodate an MSA</u>** due to the environmental quality of the land in question, ownership by the Wildlife Trust, current use for recreation and public access; and the proximity to existing residential properties.

Potential Off-Line (Junction 11A) Sites

Site 5 - Junction 11A Northern Quadrant

Planning	Comment
Green Belt Impact	The Site lies within the Green Belt in the adopted Salford Unitary Development Plan. The Green Belt in this location is expansive and generally open in character. Development of an MSA in this location would have an adverse impact upon this openness. In terms of Green Belt purposes, development of the site for an MSA will result in unrestricted sprawl of large built up areas and in encroachment into the countryside. It is not considered that it would result in neighbouring towns merging into one another nor would it affect the setting and special character of historic towns.
Existing Use	The Site is currently in agricultural use as well as accommodating Chat Moss Peat Works and a fishing lake.

Planning Policy Position	The Site is Green Belt within the adopted Salford Unitary Development Plan. It is proposed to be retained as Green Belt in the Revised Draft Salford Local Plan and the Greater Manchester Spatial Framework.
Impact on Adjacent Uses	The adjacent uses are open in nature and hence an MSA would not present a constraint on adjacent uses.
Proximity of Residential Properties	There are no existing residential properties in close proximity to the site.
Impact on Heritage Assets	Grade II Listed buildings at Barton Aerodrome are located approx. 1km from the eastern boundary from the Site and hence an MSA would have no impact upon this heritage asset.
Relevant Planning History	Planning permission was approved (LPA ref. 10/58869/FUL) at Moss Farm for change of use of land to farm visitors' centre and fishing lake.
Highways, Engineering, Safety and Operational Issues	**Comment**
Highways Engineering	Safe access: weaving distances for eastbound traffic may not be acceptable due to proximity to lane drop on approach to interchange with M60 at J12, but potential for engineering solution. Would require some land either side of the M62 to form the junction and a new bridge over mainline to access site (at significant cost).
Highways Safety and Impact on the Road Network	Impacts: Likely to be acceptable.
Environmental	**Comment**
Flood Zone	All the Site is within Flood Zone 1.
Other Constraints	The Site is agricultural land and a fishing / visitor centre. The Site is within the Astley & Bedford Mosses SSSI Impact Risk Zone, approx. 1.6km to the north-west and the Manchester Mosses SAC lies approx. 1.6km to the north-west
Conclusion	
Since the Site lies within the Green Belt, then the development of an MSA would be considered to be inappropriate development and as such, very special circumstances would need to be provided to show that the potential harm to the Green Belt by reason of	

inappropriateness, and any other harm, is clearly outweighed by other considerations. Development of an MSA in this location could have a significant adverse impact upon the openness of the Green Belt in this location as well as adverse impact upon two of the purposes of Green Belt (unrestricted sprawl of large built up areas; and safeguarding countryside from encroachment). Location within the Green Belt would not preclude development if such very special circumstances were demonstrated.

The above assessment shows that the GMSF has identified the potential for a new motorway junction adjacent to this Site but that such a new junction is tied into the GMSF process and the North West Quadrant Study. The GMSF process is expected to take until at least 2021 to be adopted and the North West Quadrant Study timescale is of a similar timescale. No detailed new junction designs are in the public domain and there is no evidence that such detailed feasibility and design work has been undertaken. From the adoption of the GMSF and the completion of the North West Quadrant Study in 2020 / 21, it is reasonable to assume that planning and procurement processes to deliver such a new junction would mean that an MSA would not be open for use until the medium term (i.e. at least 5 years away).

On this basis any potential that this off-line site may have for an MSA cannot be progressed until the uncertainty created by the GMSF proposal and the North West Quadrant Study is completed in 2020 / 21. If such a new Junction is supported then an MSA would be unlikely to be available until the medium term.

Table 9: Site 5.

Site 6 - Junction 11A South East Quadrant

Planning	Comment
Green Belt Impact	The Site lies within the Green Belt in the adopted Salford Unitary Development Plan. The Green Belt in this location is less open in nature than to the north. Development of an MSA in this location would therefore have a less adverse impact upon this openness. In terms of Green Belt purposes, development of the site for an MSA will result in encroachment into the countryside and unrestricted sprawl of large built-up areas. It will also extend the urban area of Irlam to the east which is a key gap between it and Peel Green / Barton. It is not considered that it would affect the setting and special character of historic towns.
Existing Use	The Site is currently in agricultural use as well as accommodating part of a Golf course.

Planning Policy Position	The Site is Green Belt within the adopted Salford Unitary Development Plan. It is proposed to be re-allocated in the Revised Draft Salford Local Plan and the Greater Manchester Spatial Framework for employment purposes as an expansion to Port Salford.
Impact on Adjacent Uses	The adjacent uses are open in nature and hence an MSA would not present a constraint on adjacent uses.
Proximity of Residential Properties	There are no existing residential properties in close proximity to the site.
Impact on Heritage Assets	Grade II Listed buildings at Barton Aerodrome are located approx. 520 – 640m from the northern boundary from the site and hence an MSA would have little impact upon this heritage asset.
Relevant Planning History	None applicable
Highways, Engineering, Safety and Operational Issues	**Comment**
Highways Engineering	Safe access: weaving distances for eastbound traffic may not be acceptable due to proximity to lane drop on approach to interchange with M60 at J12, but potential for engineering solution. Would require some land both sides of the M62 and new bridge over mainline to access site in the form of a new Junction (at significant cost).
Highways Safety and Impact on the Road Network	Impacts: Likely to be acceptable.
Environmental	**Comment**
Flood Zone	All the Site is within Flood Zone 1.
Other Constraints	The Site is within the Astley & Bedford Mosses SSSI Impact Risk Zone, which is approx. 3.2km to the north-west and the Manchester Mosses SAC lies approx. 3.2km to the north-west.
Conclusion	

Since the Site lies within the Green Belt, then the development of an MSA would be considered to be inappropriate development and as such, very special circumstances would need to be provided to show that the potential harm to the Green Belt by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations. Development of an MSA in this location could have an adverse impact upon the openness of the Green Belt in this location as well as adverse impact upon two of the purposes of Green Belt (unrestricted sprawl of large built up areas; and safeguarding countryside from encroachment). Location within the Green Belt would not preclude development if such very special circumstances were demonstrated.

The Site is proposed to be allocated for employment uses (320,000 m2) to take advantage of the new port facilities, rail link and highway improvements that have been completed as part of Port Salford. The GMSF allocation 33 notes "this will provide one of the most well-connected and market-attractive industrial and warehousing locations in the country, with a strong focus on logistics activities but also incorporating high quality manufacturing floorspace".

The above assessment shows that the GMSF has identified the potential for a new motorway junction adjacent to this Site but that such a new junction is tied into the GMSF process and the North West Quadrant Study. The GMSF process is expected to take until at least 2021 to be adopted and the North West Quadrant Study timescale is of a similar timescale. No detailed new junction designs are in the public domain and there is no evidence that such detailed feasibility and design work has been undertaken. From the adoption of the GMSF and the completion of the North West Quadrant Study in 2020 / 21, it is reasonable to assume that planning and procurement processes to deliver such a new junction would mean that an MSA would not be open for use until the medium term (i.e. at least 5 years away).

On this basis any potential that this off-line site may have for an MSA cannot be progressed until the uncertainty created by the GMSF proposal and the North West Quadrant Study is completed in 2020 / 21. If such a new Junction is supported then an MSA would be unlikely to be available until the medium term. Notwithstanding the timescale for delivery of the new Junction, the Site is seen as being strategically important as an extension to Port Salford and hence irrespective of the delays associated with the GMSF and North West Quadrant Study processes, this Site is not available for an MSA, as it is being promoted as an expansion to Port Salford.

Table 10: Site 6.

Site 7 - Junction 11A South West Quadrant

Planning	Comment
Green Belt Impact	The Site lies within the Green Belt in the adopted Salford Unitary Development Plan. The Green Belt in this location is less open in nature than to the north. Development of an MSA in this location would therefore have a less adverse impact upon this openness. In terms of Green Belt purposes, development of the site for an MSA will result in encroachment into the countryside and unrestricted sprawl of large built-up areas. It is not considered that it would affect the setting and special character of historic towns.
Existing Use	The Site is currently in agricultural use as well as accommodating a Golf Course.

Planning Policy Position	The Site is Green Belt within the adopted Salford Unitary Development Plan and it is proposed to be retained in the Green Belt in the Revised Draft Salford Local Plan and the Greater Manchester Spatial Framework.
Impact on Adjacent Uses	The adjacent uses to the south are residential and hence an MSA may present a constraint on these adjacent uses.
Proximity of Residential Properties	There are existing residential properties in close proximity to the Site as above.
Impact on Heritage Assets	Grade II Listed buildings at Barton Aerodrome are located approx. 520 – 640m from the northern boundary from the site and hence an MSA would have little impact upon this heritage asset.
Relevant Planning History	None applicable
Highways, Engineering, Safety and Operational Issues	**Comment**
Highways Engineering	Safe access: weaving distances for eastbound traffic may not be acceptable due to proximity to lane drop on approach to interchange with M60 at J12, but potential for engineering solution. Would require some land both sides of the M62 and new bridge over mainline to access site in the form of a new Junction (at significant cost).
Highways Safety and Impact on the Road Network	Impacts: Likely to be acceptable.
Environmental	**Comment**
Flood Zone	All the Site is within Flood Zone 1.
Other Constraints	The Site is within the Astley & Bedford Mosses SSSI Impact Risk Zone, which is approx. 3.2km to the north-west and the Manchester Mosses SAC lies approx. 3.2km to the north-west.
Conclusion	
Since the Site lies within the Green Belt, then the development of an MSA would be considered to be inappropriate development and as such, very special circumstances would need to be provided to show that the potential harm to the Green Belt by reason of	

inappropriateness, and any other harm, is clearly outweighed by other considerations. Development of an MSA in this location could have an adverse impact upon the openness of the Green Belt in this location as well as adverse impact upon two of the purposes of Green Belt (unrestricted sprawl of large built up areas; and safeguarding countryside from encroachment). Location within the Green Belt would not preclude development if such very special circumstances were demonstrated.

The Site is proposed to be retained in the Green Belt even though the adjacent site is proposed to be released from the Green Belt as an extension of Port Salford within the GMSF.

The above assessment shows that the GMSF has identified the potential for a new motorway junction adjacent to this Site but that such a new junction is tied into the GMSF process and the North West Quadrant Study. The GMSF process is expected to take until at least 2021 to be adopted and the North West Quadrant Study timescale is of a similar timescale. No detailed new junction designs are in the public domain and there is no evidence that such detailed feasibility and design work has been undertaken. From the adoption of the GMSF and the completion of the North West Quadrant Study in 2020 / 21, it is reasonable to assume that planning and procurement processes to deliver such a new junction would mean that an MSA would not be open for use until the medium term (i.e. at least 5 years away).

On this basis any potential that this off-line site may have for an MSA cannot be progressed until the uncertainty created by the GMSF proposal and the North West Quadrant Study is completed in 2020 / 21. If such a new Junction is supported then an MSA would be unlikely to be available until the medium term.

Table 11: Site 7.

Potential Off-line Junction 11A Site Summary – Sites 5, 6 and 7.

8.23. Although there is sufficient land to accommodate an MSA within Sites 5, 6 and 7 and it may be possible to mitigate the environmental and heritage issues raised with these Sites, there is significant uncertainty in delivery associated with them due to the GMSF process and the potential for a new motorway junction adjacent to the sites. The GMSF process is expected to take until at least 2021 to be adopted and the North West Quadrant Study timescale is similar. No detailed new junction designs are in the public domain and there is no evidence that such detailed feasibility and design work has been undertaken. From the adoption of the GMSF and the completion of the North West Quadrant Study in 2020 / 21, it is reasonable to assume that planning and procurement processes to deliver such a new junction could mean that an MSA would not be open for use until the medium term.

8.24. In addition, in respect of Site 6, the GMSF proposes an extension to Port Salford (GM Policy 33) to accommodate 320,000m2 of employment space and hence this Site is unavailable irrespective of whether a new motorway junction is brought forward.

8.25. As a result of this uncertainty Sites 5, 6 and 7 cannot be delivered in the short term to meet the identified need.

8.26. In light of the above assessment, it can be concluded that:-

- **Site 5 (N Quadrant of Junction 11A)** has the potential to accommodate an off-line MSA but there will be adverse Green Belt impacts and it is **unlikely to be delivered in the short term** without the delivery of a new motorway junction which is being promoted through the GMSF and being considered within the North West Quadrant Study and which is unlikely to be available for use until the medium term. In light of this there are planning, highways and engineering safety constraints that would preclude development.

- **Site 6 (SE Quadrant of Junction 11A)** has the potential to accommodate an off-line MSA but there will be adverse Green Belt impacts and it is **unlikely to be delivered in the short term** without the delivery of a new motorway junction which is being promoted through the GMSF and being considered within the North West Quadrant Study and which is unlikely to be available for use until the medium term. In addition the Site is in the draft Salford Local Plan and GMSF as an employment allocation as a strategic extension to Port Salford. In light of this there are planning, highways and engineering safety constraints that would preclude development.

- **Site 7 (SW Quadrant of Junction 11A)** has the potential to accommodate an off-line MSA but there will be adverse Green Belt impacts and it is **unlikely to be delivered in the short term** without the delivery of a new motorway junction which is being promoted through the GMSF and being considered within the North West Quadrant Study and which is unlikely to be available for use until the medium term. In light of this there are planning, highways and engineering safety constraints that would preclude development.

Stage 4 – Identification of a preferred location for a new MSA to meet the identified need

8.27. In undertaking this Alternative Sites Assessment, Stage 1 has identified a broad range of search locations that would satisfy the identified, policy defined need for a new MSA within the North West Region. Stage 2 has identified and set aside any sites that have key constraints that could preclude development unless no other more suitable sites are available. These sites will only be reconsidered if no other suitable sites can be found. Stage 3 has assessed each of the remaining sites on a high level basis against a set range of criteria. Stage 4 will now draw together the above information in order to identify a preferred location for a new MSA to meet the identified policy defined need on the M62 / M60 / M6 / M67 and M58 corridors in the North West Region. This is the site that best meets the need with the least development constraints.

8.28. **In reaching a conclusion on which is the best site to meet the identified need it is also important to ensure that such a site is deliverable as the public safety need exists now and has been identified since at least 2010. Where sites reflect similar characteristics but one site has fewer delivery constraints than another, then preference will be given to that which can come forward in the shortest timescale to meet the need.** Such delivery constraints will equate to:-

- Is the site in multiple ownerships or a single ownership?
- Does the site require significant infrastructure delivery that will take a significant length of time to deliver and / or may make it unviable?
- Is the site backed by a Developer who can deliver an MSA?

8.29. Table 4 below summarises the findings of Stage 3 and cross references these against the locational requirements set out at Stage 1 and more substantial constraints identified in Stage 2 as well as the planning, highways / operational and environmental considerations of Stage 3. **The locations highlighted in green best meet these criteria**. The conclusions of the Stage 2 and 3 assessments are summarised against each location.

Site Number	Location	Meeting the Need	Planning constraints (including Impact upon Green Belt)	Transportation Constraints	Environmental Constraints	Delivery Constraints	Overall Conclusion
1	**On-line (M62)**	Meets all 4 gaps.	Has significant impact upon Green Belt Openness and Purposes.	Requires a new pedestrian bridge over the motorway and slip roads.	Environmental constraints are mitigatable.	Multiple ownerships and not backed by a MSA Developer.	**Potentially suitable (medium term)**
2	**J11 NE**	Meets all 4 gaps.	Site makes a "weak" contribution to the Green Belt.	Requires localised improvements to Junction 11.	Environmental constraints are mitigatable.	MSA Developer has option on all land required to deliver an MSA and is preparing a planning application for an MSA.	**Most suitable (short term)**
3	**J11 NW**	Meets all 4 gaps.	Site makes a "moderate" contribution to the Green Belt.	Requires localised improvements to Junction 11.	Insurmountable environmental constraints.	Owned by Biffa with long term management and maintenance obligations. Not backed by a MSA Developer.	**Not suitable**
4	**J11 SE**	Meets all 4 gaps.	Site makes a "strong" contribution to the Green Belt.	Requires localised improvements to Junction 11.	Insurmountable environmental constraints.	Owned by Woodland Trust for environmental purposes. Not backed by a MSA Developer.	**Not suitable**

Site Number	Location	Meeting the Need	Planning constraints (including Impact upon Green Belt)	Transportation Constraints	Environmental Constraints	Delivery Constraints	Overall Conclusion
5	**Potential J11A N**	Meets all 4 gaps.	Has significant impact upon Green Belt Openness and Purposes.	Requires the delivery of a new motorway Junction which is unlikely until the medium term.	Environmental constraints are mitigatable.	Requires the delivery of a new Junction at significant cost and timescale.	**Potentially suitable (medium term)**
6	**Potential J11A SE**	Meets all 4 gaps.	Has significant impact upon Green Belt Openness and Purposes.	Requires the delivery of a new motorway Junction which is unlikely until the medium term.	Environmental constraints are mitigatable.	Requires the delivery of a new Junction at significant cost and timescale.	**Potentially suitable (medium term)**
7	**Potential J11A SW**	Meets all 4 gaps.	Has significant impact upon Green Belt Openness and Purposes.	Requires the delivery of a new motorway Junction which is unlikely until the medium term.	Environmental constraints are mitigatable.	Requires the delivery of a new Junction at significant cost and timescale.	**Potentially suitable (medium term)**

Table 12: Summary of assessment of potential on line and off-line (Junction) locations

8.30. **All the Sites (Sites 1 – 7) are within the Green Belt in the currently adopted Local Plans (Warrington and Salford). In this regard all the Sites are subject to the same "very special circumstances" test and there are no non-Green Belt alternatives that could meet the identified need. It is therefore clear that to meet the need for an MSA in the Optimum Search Area, a Green Belt site will need to be developed.**

8.31. Site 1 is the only on-line opportunity for an MSA within the Optimal Search Area. Whilst it has the potential to accommodate an MSA, there is no evidence that it is capable of being brought forward to meet the currently identified need. It is within multiple ownerships and is not backed by a MSA Developer, and hence it is unlikely to be deliverable in the short term.

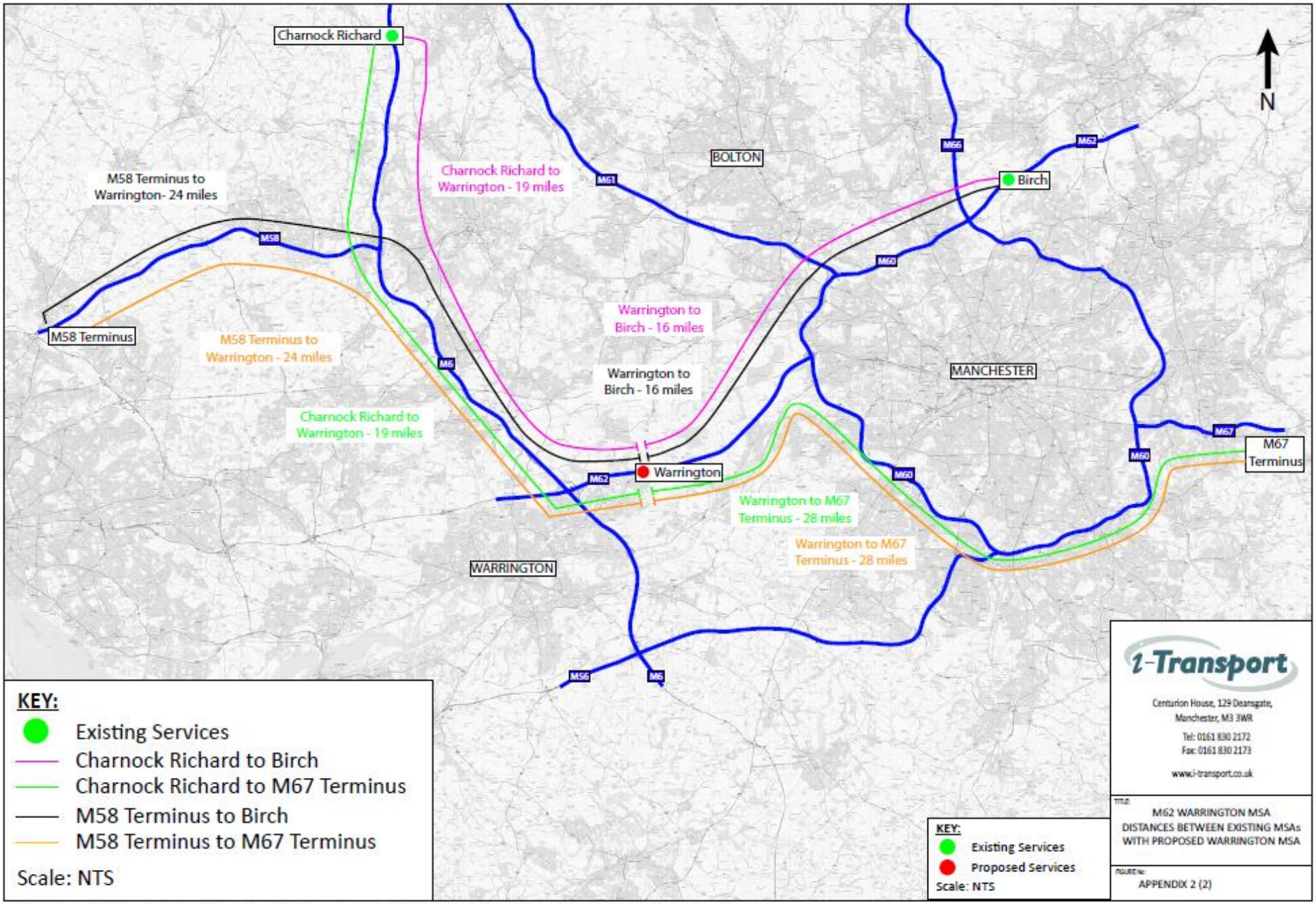
8.32. All other sites are off-line opportunities. Sites 3 and 4 are ruled out due to environmental constraints and hence cannot accommodate an MSA.

8.33. Sites 5, 6 and 7 have the potential to accommodate an MSA but a new M62 Junction 11A will be required to facilitate their delivery. There is considerable uncertainty associated with the delivery of such a new motorway junction, the potential for which has been identified in the GMSF and within the North West Quadrant Study, but which is unlikely to be open for public use until the medium term. There is no evidence that these sites can come forward any earlier to meet the currently identified need. In addition Site 6 is further constrained by also being in the draft Salford Local Plan and GMSF as an employment allocation as a strategic extension to Port Salford.

8.34. **In this context, the Assessment identifies that land within the NE Quadrant of Junction 11 (Site 2) is the most sequentially preferable location upon which to site a new MSA having regard to the specific locational requirements to meet the identified need along with the consideration of planning, engineering, safety, operational and environmental factors. The Assessment also shows that of the Sites identified, it has the least Green Belt impact, being classified as having a "weak" contribution with the emerging Warrington Local Plan evidence base.**

8.35. Given that a suitable site (Site 2) has been identified, it is not necessary at this stage to revisit any of the sites that were provisionally set aside as part of the Stage 2 assessment. It is also unnecessary to undertake a further search for locations outside of the Optimal Search Area.

8.36. **The plan below incorporates a new MSA strategically and optimally located at M62 Junction 11 and demonstrates beyond doubt that the FOUR unmet gaps on the M6 / M62 / M60 / M67 / M58 within the North West Region will be fully addressed by a new MSA at M62 J11.**



Plan xx: Preferred location that meets all FOUR gaps

8.37. **As is shown in Table 13 below, the 40 mile non-compliant gap between M58 Terminus and Birch Services will be reduced to 24 miles; the 35 mile non-compliant gap from Charnock Richards Services to Birch Services will be reduced to 19 miles; the 52 mile non-compliant gap between M58 Terminus and M67 Terminus will be reduced to 16 miles; the 47 mile non-compliant gap from Charnock Richards Services to M67 Terminus will be reduced to 28 miles. All of these distances are below or comply with the 28 mile maximum.**

From	To	Current Route	Current Distance	New Route	Proposed Distance
M58 Terminus (Switch Island)	Birch Services	M58/M6/M62/M60/M62	40 miles	M58/M6/M62	24 miles
Charnock Richard Services	Birch Services	M6/M62/M60/M62	35 miles	M6/M62	19 miles
M58 Terminus (Switch Island)	M67 Terminus (Hattersley Roundabout)	M58/M6/M62/M60/M67	52 miles	M62/M60/M62	16 miles
Charnock Richard Services	M67 Terminus (Hattersley Roundabout)	M6/M62/M60/M67	47 miles	M62/M60/M67	28 miles

Table 13: Policy compliant MSA Provision in the North West Region

8.38. Following the identification of a 'preferred site', MSA Extra have now progressed site investigations and detailed design works in order to inform the layout, scale, form and boundaries of any future scheme, along with any necessary mitigation measures. Viability and land ownerships issues are key factors that may prevent the preferred site from coming forward. The Developer has secured an option from the landowner to bring the preferred site forward. Following design work, the Developer considers that a commercially and

operationally viable MSA can be delivered on the preferred site. Should it ultimately prove not to be the case, then it would be necessary to revisit alternative options as the public safety 'need' would still remain unmet.

9. Summary and Conclusions

9.1. The Strategic Road Network plays a key role in the movement of goods and people around the country and its safe and efficient operation is critical to the performance of the economy. It is also essential in helping to facilitate planned economic growth.

9.2. The approach to determining 'need' for an MSA on the Strategic Road Network is set out in Circular 02/2013. The 'need' for an MSA is established wherever spacing between MSAs on any stretch of the Strategic Road Network is a greater distance than 28 miles (equating to a maximum travelling time of 30 minutes). As paragraph B8 of the Circular makes explicit, once such a gap is shown to exist, it is not necessary to have regard to other considerations in determining whether a need exists (i.e. the existence of a gap is in, and of, itself conclusive evidence of need for planning purposes). A 'need' either exists, or it does not.

9.3. The application of the policy tests set out in Circular 02/2013 clearly and unequivocally demonstrates that a 'need' exists for a new MSA located for routes from the M58, M62, M6, M60 and M67. It is in the national and local interest to ensure that this need is addressed as soon as possible.

9.4. This Document outlines the Alternative Sites Assessment process that has been undertaken to identify a preferred site which best meets the need for a new MSA on this stretch of the Strategic Road Network with the least number of planning, engineering and environmental constraints having regard to both on-line and off-line (Junction) locations and the policy guidance contained in Circular 02/2013 and the NPPF 2019.

9.5. In undertaking this assessment, the broad locations that would satisfy the identified need for a new MSA within the North West Region were first identified. This appraisal concluded that there is an Optimal Search Area which is the best performing location to meet all **FOUR** identified gaps in the network of MSA provision. This Optimal Search Area is situated on the M62 stretch of the Strategic Road Network running from M62 Junction 11 and eastwards for 4 miles.

9.6. At Stage 2, sites that were already in beneficial use; committed for alternative development; predominantly in Flood Zone 3; contain listed structures or have other significant environmental designations were then set aside. These sites would only be reconsidered if no

other suitable sites could be found. At this stage, no sites were put aside but part of Site 1 was excluded.

9.7. Each remaining site was then considered on a high level basis against a set range of criteria. At this stage it was not possible to identify any necessary mitigation measures, design features required to address identified constraints, infrastructure requirements or the costs associated with these without detailed site investigations and discussions with landowners and other stakeholders. This would take place at the detailed design stage of development. Known site constraints were however considered where possible and a basic comparison was made between sites. At this stage it became clear that Sites 3 and 4 were constrained by environmental considerations; that sites 1, 5, 6, and 7 were constrained by delivery considerations; and that site 2 was relatively free from constraint.

9.8. Stage 4 considered the findings of Stages 1, 2 and 3 in order to identify a preferred location for a new MSA to meet the identified need. This is the site that best meets the need with the least development constraints.

9.9. **The Assessment identifies that land within the North East Quadrant of Junction 11 of the M62 Motorway (Site 2) is the most sequentially preferable location to meet the identified need having regard to the locational requirements of the new MSA and a wider range of environmental, planning and engineering constraints. This site lies within the Optimal Search Area of public safety need identified having regard to the policy requirements set out in Circular 02/2013 and will fully address the FOUR unmet gaps on the M6 / M62 / M60, M58 and M67 corridors in the North West Region, reducing distances between MSAs to at or below the 28 mile maximum.**

9.10. **Whilst the preferred site is in Green Belt so are all the other sites that have been assessed through this Alternative Sites Assessment. Any MSA brought forward to meet the need within the Optimal Search Area would therefore have to be accommodated within the Green Belt.**

9.11. Any planning application for an MSA on a site within the Green Belt would have to demonstrate "very special circumstances" (VSC). Extra MSA Group has obtained Leading Counsel's Opinion on the role of "need" for an MSA with regard to the "very special

circumstances" test for inappropriate development within the Green Belt. Counsel advised that *"In order to establish VSC it is necessary to demonstrate that the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations (NPPF, para. 144). The question of whether VSC exist for any given proposal is decided on a case by case basis, and whether a matter or combination of matters constitute VSC sufficient to outweigh the harm by reason of inappropriateness and any other harm is quintessentially a matter of planning judgment for the decision-maker. "Need" generally, and the specific need for an MSA to meet the strategic need for road side facilities in accordance with Government policy, has long been accepted as a matter that can either by itself or in combination with other matters outweigh the harm to the Green Belt by reason of inappropriateness and any other harm. Many existing MSAs are situated in the Green Belt, and were justified by reference to "need". Whether a particular proposal for an MSA meets the test of VSC has to be decided by reference to a range of factors, which will include need, whether the proposal causes "other harm", the extent of such "other harm" and the availability or otherwise of alternative sites where the need can be met without causing such harm or causing less harm"* A copy of the full advice is included in Appendix 1.

9.12. The preferred Site adjoins the M62 Motorway and has safe and convenient access from M62 Junction 11. Provision of an MSA in this location can be designed to be compatible with the Birchwood Park employment area and the adjacent Risley landfill restoration scheme. It is therefore compatible with current neighbouring land uses, and it can also be designed such that it does not preclude the future potential HS2 alignment to the north. Discussions are ongoing with HS2 to accommodate access to their potential compound for construction activities. In these circumstances, the North East Quadrant of land at M62 Junction 11 is the optimal location in which to provide a bespoke MSA to meet the needs of motorists in a sustainable and accessible location that is central to the identified gap in provision in the North West Region.

9.13. Following the identification of a 'preferred Site' the Developer has now progressed site investigations and detailed design works in order to inform the layout, scale, form and boundaries of a future scheme, along with any necessary mitigation measures.

Appendices

Appendix 1 – Counsel's written opinion on Highway Need

IN THE MATTER OF:

WARRINGTON MOTORWAY SERVICE AREA
JUNCTION 11 OF THE M62

OPINION

Introduction

1. Extra Motorway Service Area Group ("Extra") is in the process of preparing an outline planning application proposing the erection of a "New Concept" Motorway Service Area ("MSA") within the north eastern quadrant of Junction 11 of the M62 Motorway situated approximately 5.6km (3.5 miles) to the north of Warrington Town Centre. The proposal is for an off-line MSA on a site extending to approximately 16ha of land, and will comprise of facilities building, hotel, fuel filling station, parking facilities, landscaping and amenity area. The proposals will be fully compliant with the minimum requirements for an MSA as set out in Table B1 of Annex B to Department of Transport Circular 02/2013. Drivers will have indirect access to the M62, which runs along the southern boundary of the proposed site and connects through to the M6 and M60, and onwards to the M58 and M67. The MSA will be known as Warrington Services.

2. The site currently comprises agricultural land in arable use, and is designated as Green Belt in the adopted development plan for the area.

3. We are asked to advise on:

a. how the question of whether or not there is a "need" for an MSA should be resolved;

b. the relevance of off-line versus on-line MSA provision;

c. whether, if there is a need, this need is capable of constituting the very special circumstances ("VSC") needed to justify what Extra accepts would constitute inappropriate development in the Green Belt.

Need

4. The method for establishing a need for an MSA is set out in DfT Circular 02/2013. This Circular and the National Planning Policy Framework (February 2019) ("the Framework") are the only documents to which reference is necessary to establish what the test is for demonstrating need.

5. The starting point is paragraph 104(e) footnote 42 of the Framework. This provides that "The primary function of roadside services should be to support the safety and welfare of the road user." It is clear from this that the purpose of an MSA is to ensure the safety of drivers on the strategic road network ("SRN"). This point is reinforced in Annex B of the Circular, which states at paragraph B4

"Motorway service areas and other roadside facilities perform an important road safety function by providing opportunities for the travelling public to stop and take a break in the course of their journey. Government advice is that motorists should stop and take a break of at least 15 minutes every 2 hours. Drivers of many commercial and public service vehicles are subject to a regime of statutory breaks and other working time restrictions and these facilities assist in compliance with such requirements."

6. The Circular then goes on to explain (at B5) how decisions regarding the location of MSAs on the SRN have been informed by the need to ensure this safety objective is realized by giving drivers the opportunity to stop and take a break every two hours:

   "The network of service areas on the strategic road network has been developed on the premise that opportunities to stop are provided at intervals of approximately half an hour. However the timing is not prescriptive as at peak hours, on congested parts of the network, travel between service areas may take longer."

7. The requirement, or "need", to ensure driver safety through the provision of an MSA at intervals of approximately half an hour leads directly to the recommendation of the Highways Agency that there should an opportunity for drivers to stop and rest at a MSA every 28 miles (at B6):

   "The Highways Agency <u>therefore</u> recommends that the maximum distance <u>between motorway service areas</u> should be <u>no more</u> than 28 miles. The distance between services can be shorter, but to protect the safety and operation of the network, the access/egress arrangements of facilities must comply with the requirements of the Design Manual for Roads and Bridges including its provisions in respect of junction separation" (emphasis added).

8. It follows from the above that if the Government's objective of ensuring the safety and welfare of road users is to be realised, there is a "need" to provide an MSA on those stretches of the SRN where there is a gap of 28 miles. In other words, a "need" for an MSA is established wherever any particular stretch of the SRN has a gap of more than 28 miles (i.e where drivers are currently driving for more 28 miles before they have the opportunity to stop at a MSA).

9. There are currently four MSAs located on the SRN in and around the Warrington area: on the M6 there are Charnock Richard Services and Lymm Services, and on the M62 there are Birch Services and Burtonwood Services.

However, having regard to terminus points of the M58 and M67 and the ability of drivers to leave one motorway and join another through the various junctions around this area, it is quite clear that some drivers will be driving for more than 28 miles (and significantly longer than 30 minutes) on the SRN before they encounter a MSA. There are four such "gaps":

a. A driver taking the route from the M58 Terminus to Birch Services on the M62 will drive 40 miles (M58/M6/M62/M60/M62);

b. A driver taking the route from Charnock Richard Services on the M6 to Birch Services on the M62 will drive 35 miles (M6/M62/M60/M62);

c. A driver taking the route from the M58 Terminus to the M67 Terminus will drive 52 miles without encountering a MSA (M58/M6/M62/M60/M67);

d. A driver leaving Charnock Richard Services on the M6 and driving to the M67 Terminus will drive 47 miles with no opportunity to stop at a MSA (M6/M62/M60/M67).

10. It can be seen from the above that the existence of Burtonwood Services and Lymm Services do not address the identified gaps, for the simple reason that some drivers will take a journey whereby despite the existence of these two MSAs they will drive for more than 28 miles (and significantly longer than 30 minutes) before they encounter a MSA. How many such drivers there will be is irrelevant for the purposes of applying the Government's policy on need - as paragraph B8 of the Circular makes explicit, once such a gap is shown to exist, it is not necessary to have regard to other considerations in determining whether a need exists (i.e. the existence of the gap is in and of itself conclusive evidence of need for planning purposes):

"The distances set out above are considered appropriate for to (sic) all parts of the strategic road network and to be in the interests of and for the benefit of all road

users regardless of traffic flows or choice. In determining applications for new or improved sites, local planning authorities should not need to consider the merits of the spacing of sites beyond conformity with the maximum and minimum spacing criteria established for safety reasons. Nor should they seek to prevent competition between operators; rather they should determine applications on their specific planning merits."

11. The 2013 Circular was a deliberate departure from previous policy in that the Government decided to make clear that once a gap of more than 28 miles has been identified, the need for an MSA will be established (i.e the absence of an MSA in such a situation frustrates the Government's objective of supporting the safety and welfare of the road user). The local planning authority in such a situation should not concern itself with the merits of spacing beyond asking itself whether (a) the proposed MSA will help ensure that the maximum distance of 28 miles is not breached, and (b) that the new facility will not breach the requirements set out in the Design Manual for Roads and Bridges. For the purposes of applying the policy on "need" as set out in the Circular, it is not permissible to take a graduated approach to need by reference to the number of drivers using a particular stretch of the strategic road network or any other considerations such as route choice or the nature of the journeys. The existence of the requisite gap is conclusive evidence of need, and in the particular circumstances of this case it removes any necessity to debate how many drivers will choose a particular route (for example M6 South – M62 East, in preference to any other route).

On-line versus Off-line

12. Annex B of the Circular at B13 to B15 provides that where competing MSA sites are under consideration, the Highways Agency has a preference for on-line locations over off-line locations. It must however be noted that, firstly, this is a "preference" only (i.e it is not a mandatory requirement that an on-line location must always be selected over an off-line location); and secondly the preference is subject to the very important caveat "on the assumption

that all other factors are equal".

13. All other factors are rarely equal in life, and the sphere of planning is no exception. So, for example, the Circular itself at B15 acknowledges that an on-line facility may simply not be possible because of safety, operational or environmental constraints. We would go further and add that such a facility may be available, but the safety, operational or environmental disbenefits of such a location may outweigh the advantages that flow from being on-line as opposed to off-line, such that the latter location is considered preferable once regard is had to all matters that are relevant to what is ultimately a planning decision.

14. If there is a choice to be made between on-line and off-line facilities, the planning authority must have regard to all material considerations relevant to that choice, and that will include not only the Highways Agency "preference" (understood subject to the express caveats provided in the Circular itself), but also all of the benefits that a particular off-line location may provide when compared with a particular on-line location. So, for example, on the specific facts of a given case, the off-line location may provide broader sustainability benefits when compared with the only on-line location that is in contention.

Green Belt

15. In order to establish VSC it is necessary to demonstrate that the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations (NPPF, para. 144). The question of whether VSC exist for any given proposal is decided on a case by case basis, and whether a matter or combination of matters constitute VSC sufficient to outweigh the harm by reason of inappropriateness and any other harm is quintessentially a matter of planning judgment for the decision-maker.

16. "Need" generally, and the specific need for an MSA to meet the strategic need for road side facilities in accordance with Government policy, has long been accepted as a matter that can either by itself or in combination with other matters outweigh the harm to the Green Belt by reason of inappropriateness and any other harm. Many existing MSAs are situated in the Green Belt, and were justified by reference to "need".

17. Whether a particular proposal for an MSA meets the test of VSC has to be decided by reference to a range of factors, which will include need, whether the proposal causes "other harm", the extent of such "other harm" and the availability or otherwise of alternative sites where the need can be met without causing such harm or causing less harm.

Conclusion

18. We have addressed the matters raised in our Instructions. If additional matters arise we would be pleased to assist further.

MARTIN KINGSTON QC
SATNAM CHOONGH
Number 5 Chambers

14 May 2019

IN THE MATTER OF:

WARRINGTON MOTORWAY SERVICE AREA
JUNCTION 11 OF THE M62

ADVICE NOTE

Counsel: Martin Kingston QC
Satnam Choongh

YOUR REF: PO-TP-SPA-LT-P4151-0002-A

SPAWFORTHS
JUNCTION 4
BUSINESS COURT
EAST ARDSLEY
LEEDS
W YORKSHIRE
WF3 2AB
Tel: 01924 873873

E-MAIL: mail@spawforths.co.uk

Appendix 2 – Email from Highways England confirming gapping

Our ref:
Your ref:

Julie Prince
Senior Policy Advisor
Piccadilly Gate
Store Street
Manchester
M1 2WD

www.highwaysengland.co.uk

Direct Line: 0300 470 5293

By Email
Alison Gough
Development Management
Economic Regeneration, Growth and Environment
Directorate
Warrington Borough Council
New Town House
Buttermarket Street
Warrington
WA1 2NH

11 June 2019

Dear Sirs,

RE: Proposed Motorway Service Area - M62 Junction 11

I understand that you are in Pre-Application dialogue with Extra MSA Group and their retained Transport Consultant, i-Transport, about Extra's proposed Planning Application for the development of a new Motorway Service Areas ("MSA") on land immediately adjacent to M62 J11 (northeast quadrant and accessible from and to the Motorway Junction).

I understand you have specifically requested guidance on the approach that Highways England will adopt when responding to Planning Applications.

I can confirm that Extra has engaged with Highways England and have provided preliminary details for the new MSA proposal. Most recently this has included a meeting with Extra MSA Group and i-Transport.

Any consultation response Highways England makes in respect of any forthcoming application for new MSA facilities at the above site will be informed by the guidance set out in the National Planning Policy Framework ("NPPF") and DfT Circular 02/2013 ("the Circular").

Paragraph 31 of the NPPF states that:

'The primary function of roadside facilities for motorists should be to support the safety and welfare of the road user.'

Annex B of the Circular expands on this point. Paragraph B4 of the Circular states that:

'Motorway service areas and other roadside facilities perform an important road safety function by providing opportunities for the travelling public to stop and take a break in the course of their journey. Government advice is that motorists should stop and take a break of at least 15 minutes every 2 hours. Drivers of many commercial and public service vehicles are subject to a regime if statutory breaks and other working time restrictions and these facilities assist in compliance with such requirements.'

Paragraph B5 of the Circular then explains how decisions regarding the location of MSAs on the strategic road network have been informed by the need to ensure this safety objective is realised by giving drivers the opportunity to stop and take a break every two hours:

'The network of service areas on the strategic road network has been developed on the premise that opportunities to stop are provided at intervals of approximately half an hour. However, the timing is not prescriptive as at peak hours, on congested parts of the network, travel between service areas may take longer.'

Highways England therefore recommends (as identified at Paragraph B6 of the Circular) that the maximum distance between MSAs should be no greater than 30 minutes travelling time, which subject to traffic congestion is typically 28 miles. The distance and travelling time between MSA facilities can be shorter than 30 minutes/28 miles, subject to access and egress arrangements complying with the requirements of the Design Manual for Roads and Bridges (DMRB), including its provisions in respect of junction spacing.

Paragraph B8 of the Circular concludes that the maximum travelling time of 30 minutes (maximum distance of typically 28 miles) identified above is:

'…in the interests and for the benefit of all road users regardless of traffic flows or route choice.'

The same paragraph concludes that:

'In determining applications for new or improved sites, local planning authorities should not need to consider the merits of spacing of sites beyond conformity with the maximum and minimum spacing requirements established for safety reasons. Nor should they seek to prevent competition between operators; rather they should determine applications on their specific planning merits.'

In 2010, Highways England produced a report titled 'Spatial Planning Framework: Review of Strategic Road Network Service Areas". The report

identified MSA gaps on the Strategic Road Network including the Northwest Region.

Gap analysis presented by i-Transport during our meeting reflected the same gaps identified in the 2010 report and is summarised below:

From	To	Route	Distance
M58 Terminus	Birch Services	M58/ M6/ M62/ M60/ M62	40 miles
Charnock Richard Services	Birch Services	M6/ M62/ M60/ M62	35 miles
M58 Terminus	M67 Terminus	M58/ M6/ M62/ M60/ M62	52 miles
Charnock Richard Services	M67 Terminus	M6/ M62/ M60/ M67	47 miles

The provision of a new MSA at M62 J11 ("Warrington Services") would result in the following reduced separation distances on the respective sections of the Motorway Network described above:

From	To	Route	Distance
M58 Terminus	Warrington MSA	M58/ M6/M62	24 miles
Charnock Richard Services	Warrington MSA	M6/M62	19 miles
Warrington MSA M62 J11	Birch Services	M62/M60/M67	16 miles
Warrington MSA	M67 Terminus	M62/M60/M67	28 miles

In this context and not pre-empting any formal Highways England's response in relation to Extra's proposed Planning Application, I can confirm that Highways England would have no objection in principle to the proposed development of a new MSA at M62 J11 ("Warrington Services") on the grounds of spacing.

Notwithstanding the above, Highways England will need to review and be satisfied in transport modelling terms that the proposed access/egress arrangements meet with the requirements of Design Manual for Roads and Bridges and that any further mitigations that may be needed can be met.

I trust this provides you with the clarification you are seeking at this early stage in your decision-making process.

Yours Sincerely

Julie Prince

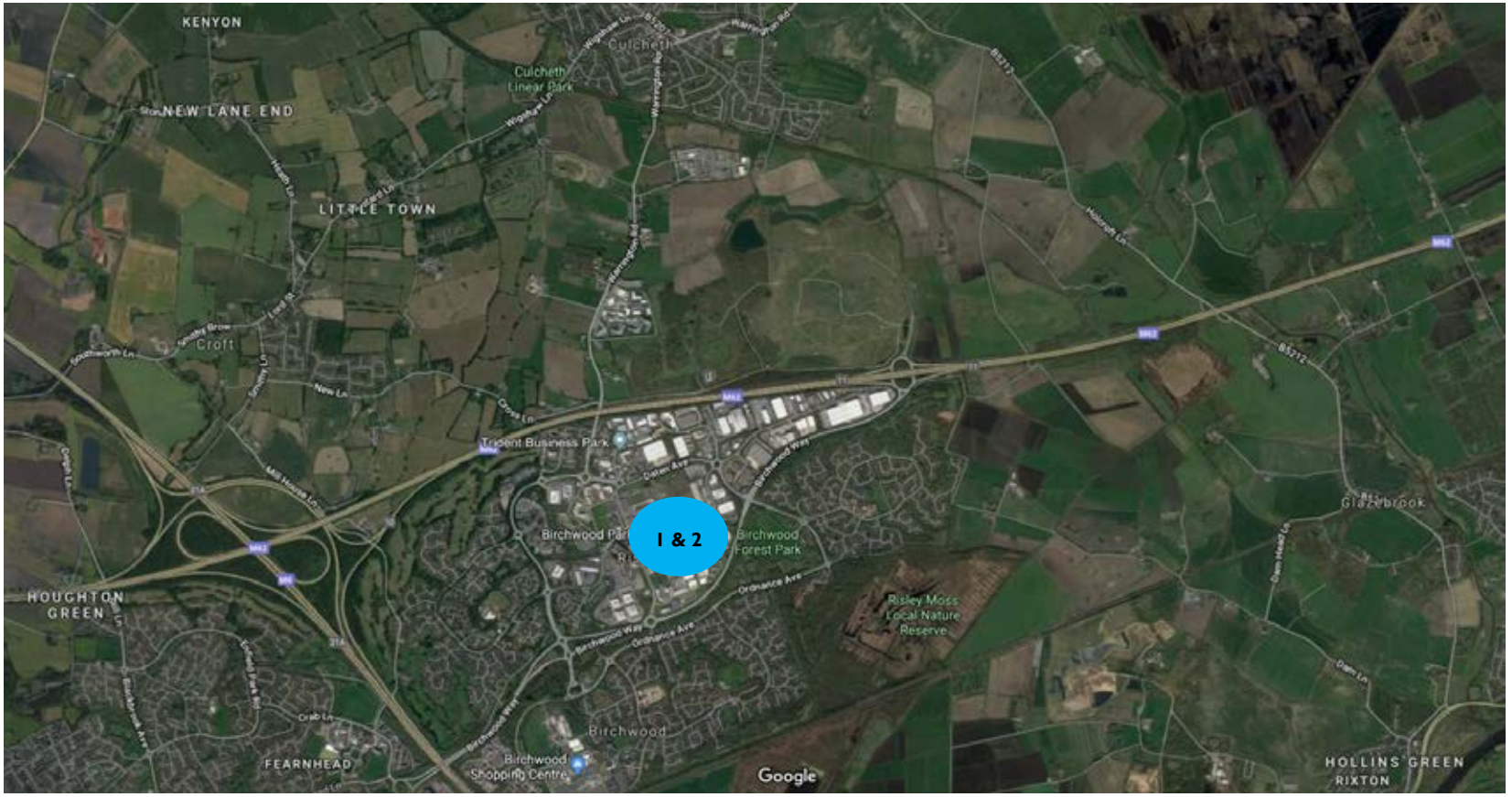
Julie Prince, Senior Policy Advisor

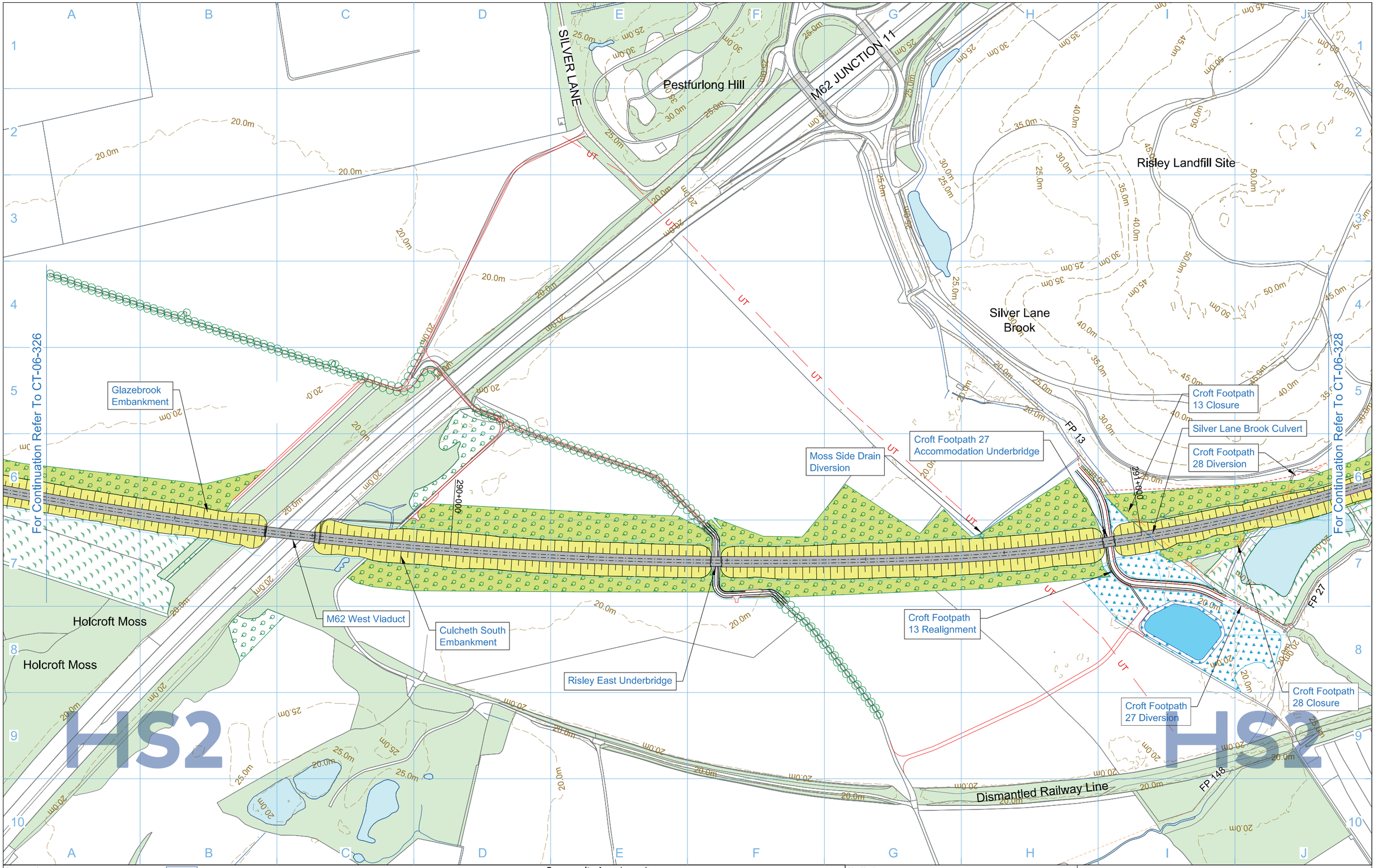
ES Part 1 Appendix 14

Cumulative Developments

	Cumulative Development	Status	Technical Areas to consider cumulative development	Technical Areas where cumulative development is not relevant
1	The Quadrant, Cavendish Avenue, Birchwood Park, Warrington, WA3 6AE Application Ref: 2014/23358	Seven units for general industry and/or warehouse/distribution (Use Class B2 and/or B8) Area 7 of 3.64ha site area 12,225m^2 of development Within area 7 of original outline permission g Planning Permission Granted 12-08-2014	- Socio Economic - Waste - Air Quality (dust and PM_{10} during construction) - Noise (during construction)	Traffic and Transport, Noise and Air Quality consider the impacts of traffic associated with the committed development within the main assessment, so it is not reconsidered as part of the cumulative assessment. Given the distance from the site, its detachment from the site and context set within an industrial estate, it is not relevant to the following technical areas: - Ground Conditions and Contamination - Water Resources - LVIA - Ecology and Nature Conservation - Cultural Heritage and Archaeology - Agricultural Land and Soils - Climate Change
2	Eastern Edge of Birchwood Park Plots 107, 300, 501-502, 611-612, 701-702 and Quadrant, Birchwood Park, Warrington, WA3 6AE Application Ref: 2015/26044	Part developed. Outline Planning Permission Granted 29-10-2015 (10 year permission) Demolition of existing buildings and erection of new buildings for a combination of offices (B1); light and general industrial (B1/B2); warehousing development (B8) and ancillary retail/ financial & professional services/ non-residential institutions/ assembly and leisure (A1/A2/D1/D2) floor space.		
3	HS2 (adjacent to the Site)	Land safeguarded for the HS2 route Government consultation. Current programme: Advanced works Q4 2022 Development Q4 2024 Commissioning Q4 2031 – Q3 2033	- Water Resources - Ecology and Nature Conservation - Agricultural Land and Soils (construction) - LVIA - Cultural Heritage (construction) - Socio Economic - Air Quality (construction)	- Traffic and Transport (construction – lack of available information for traffic movements) - Air Quality and Noise (in respect of traffic movements associated with construction due to the lack of information available) - Noise (HS2 is considered in main assessment, so not reconsidered as part of the cumulative) - Waste - Geology and Ground Conditions - Climate Change

Warrington MSA, J11 M62 – Cumulative Developments





Legend

- Depot, station, headhouse or portal building
- Tunnel portal
- Electricity substation
- Ecological mitigation pond
- Balancing pond
- Replacement floodplain storage
- Pumping Station
- Woodland habitat creation
- Wetland habitat creation
- Grassland habitat creation
- Landscape mitigation planting (scrub / woodland)
- Grassed areas
- Public realm
- Engineering earthworks
- Landscape earthworks
- Rail alignment formation
- Tunnels external extent
- Community Area boundary
- Watercourse diversion
- Existing watercourse
- Ditches - new
- Hedgerow habitat creation
- UT — Location of major utility
- Existing public right of way (PRoW)
- New, diverted or realigned PRoW
- PRoW Closure
- County boundary
- Borough / District boundary
- 130.0m Existing contours
- HS2 access road
- Noise fence barrier
- Rail alignment
- 10+000 Chainage (e.g. 10+000)

Map Number: CT-06-327

Map Name: CT-06 - Proposed Scheme WDES

Community Area: MA05 Risley to Bamfurlong

Registered in England
Registration No. 06791686
Registered office:
2 Snow Hill, Queensway,
Birmingham, B4 6GA

Scale at A3: 1:5,000

0 50 100 150 200 250 Metres

Doc Number: 2DE01-MWJ-EV-DPL-M002-600327 P03 **Date:** 09/07/18

ES Part 1 Appendix 15

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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

EXTRA MSA GROUP

MOTORWAY SERVICES, WARRINGTON

CHAPTER 14: ARBORICULTURAL IMPACT ASSESSMENT

JULY 2019

wardell armstrong

Wardell Armstrong LLP
36 Park Row, Leeds, LS1 5JL, United Kingdom
Telephone: +44 (0)113 8315533 www.wardell-armstrong.com

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REPORT NUMBER:	**0014**

EXTRA MSA GROUP

MOTORWAY SERVICES, WARRINGTON

ARBORICULTURAL IMPACT ASSESSMENT

JULY 2019

PREPARED BY:		
Scott Reid	Senior Arboriculturist	
REVIEWED BY:		
Moray Simpson	Principal Arboriculturist	
APPROVED BY:		
Tim Palmer	Technical Director	

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FIGURES

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APPENDICES

DRAWINGS	TITLE	SCALE
SH11739-033 Rev. B	Tree Protection Plan	1:1000@A1

1 INTRODUCTION

1.1 Brief

1.1.1 Wardell Armstrong LLP (WA) was commissioned by Extra MSA Group to undertake a BS 5837 tree survey on the site and to assess and report on the impacts on the trees and hedgerows in connection with the construction of a new motorway service area, located to the north of junction 11 on the M62 (Ordnance Survey grid reference SJ 670936). For the purpose of this report this will be referred to as the 'Site' hereafter.

1.1.2 The purpose of this report is to provide an Arboricultural Impact Assessment (AIA), in order to evaluate the direct and indirect effects of the proposed development on the trees surveyed. These include trees identified within the Site, as well as those located off-site but within influencing distance of the Site. Where there are impacts from the development proposal, this report recommends, where feasible, mitigation measures to be taken to ensure that important trees and hedgerows are adequately considered during the design process. Where trees and hedgerows must be removed to enable the development, potential mitigation measures are proposed.

1.1.3 The BS5837 tree survey was undertaken by Scott Reid (Senior Arboriculturist) of Wardell Armstrong on 1st April 2019. This, in combination with the proposed layout, supporting documents/drawing and any liaison we have had with the design team and the LPA, forms the basis of our assessment.

1.1.4 If planning permission is granted for the proposal assessed in this report, it is usual for Local Planning Authority (LPA) to condition an Arboricultural Method Statement (AMS). An AMS would set out the specifications and methodologies for the tree protection measures implementation and would also provide a methodology for any proposed works that either encroach within the root protection areas (RPAs) of retained trees and/ or that have the potential to result in loss or damage to them.

1.1.5 This AIA report and attached Tree Protection Plan (TPP) accords with the methodologies and guidance set out in British Standard BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* (The British Standards Institution, 2012).

1.1.6 This AIA report and the associated TPP is based on a topographical survey plan prepared by WA on 21.01.2019 (Ref. SH11739-019 Rev B). Where tree stem locations are not shown on the topographical survey, these are plotted using GPS plotting and/ or the utilisation of site features to manually plot the tree stem locations and canopy

spreads for tree groups. Aerial photography is also utilised to plot tree group canopy spreads, where utilisation of GPS is not feasible. These methods provide a good representation of the surveyed trees; however, please note that the GPS used is not sub-metre accurate.

1.2 Site Context

1.2.1 The Site is located in an area of arable farmland to the north of junction 11 off the M62. It also incorporates a vehicular access drive which links to the M62 junction 11 roundabout, a linear footpath along the west boundary, areas of boundary trees, shelterbelts and scrub vegetation. Ground levels within the main part of the site are generally level, however; earth banking is present along the west boundary which slopes upwards from east to west.

1.2.2 The surrounding area is characterised mainly by arable farmland (with typical boundary hedgerows and trees). Along the southern boundary is the M62 motorway and further to the south/south west is the district of Birchwood. This includes an area of residential housing and a sizeable commercial development (Birchwood Technology Park).

1.3 Development Proposal

1.3.1 The project description is as follows:

The erection of a Motorway Service Area including Facilities Building, up to 100 bedroom Hotel, service yard, Fuel Filling Station, Electric Charging Station, parking facilities for each category of vehicle, access and internal circulation roads, structured and natural landscaping with outside amenity space/picnic space and dog walking zone, pedestrian and cycle links, boundary fencing, surface water drainage areas, ecological mitigation, pumping station(s), substation(s), retaining structures and associated infrastructure and earthworks.

1.4 Trees and the Planning Process

1.4.1 Under s197 of the Town & Country Planning Act 1990, LPAs have a legal duty to consider the protection of trees and the planting of new trees on development sites when granting planning permission. LPAs must also consider the potential effects, whether detrimental or positive, that proposed developments will have on retained trees, and the effect that these trees will have on the users of the development.

1.4.2 The Site is located within the administrative boundaries of Warrington Borough Council. The LPA's Local Plan Core Strategy was adopted July 2014. This is currently being reviewed although a new plan has not yet been adopted. Supplementary Planning Documents (SPDs) are also available from the LPAs website[1] and of these 'Design and Construction' provides advice in regarding to trees and development under section 10 'Protection of Trees on Development Sites'. The SPD highlights the need to conduct a tree survey in accordance with BS5837 and the provision of a plan which shows the location of protective fencing for retained trees. If an approved development is sited within the vicinity of retained trees and has the potential to cause damage to them, the SPD highlights that an arboricultural method statement may be needed and that this will usually be conditioned where necessary.

1.4.3 Table B.1 taken from British Standard BS 5837:2012 gives guidance on the level of information required by LPAs in order to make an informed decision on the impact of development on trees. The production of an Arboricultural Constraints Report and Plan is the first stage of assessment in the context of the planning process.

In this case we have not been instructed to prepare a Constraints Report and Plan to inform the proposed layout. However, we have conducted a tree survey in accordance with BS5837 and have plotted the trees on the proposed layout so that the specific impacts on the trees can be assessed. This Arboricultural Impact Assessment (AIA) and the associated TPP fulfils the requirement to present the impacts of the proposed development layout on the trees that are located on or immediately adjacent to the Site.

1.4.4 If the proposed development is approved, it is common for the LPA to condition the protection of the retained trees and hedgerows on Site during the proposed development. This will usually take the form of an Arboricultural Method Statement (AMS) and an updated TPP. These will show how the trees and hedgerows will be protected and will provide a methodology for any works within the RPAs of retained vegetation. These steps accord with the recommendations in BS 5837:2012 as detailed in Table B.1 as shown in Figure 1 overleaf.

[1] https://www.warrington.gov.uk/info/200564/planning_policy/2089/supplementary_planning_documents

Table B.1 **Delivery of tree-related information into the planning system**

Stage of process	Minimum detail	Additional information
Pre-application	Tree survey	Tree retention/removal plan (draft)
Planning application	Tree survey (in the absence of pre-application discussions)	Existing and proposed finished levels
	Tree retention/removal plan (finalized)	Tree protection plan
	Retained trees and RPAs shown on proposed layout	Arboricultural method statement – heads of terms
	Strategic hard and soft landscape design, including species and location of new tree planting	Details for all special engineering within the RPA and other relevant construction details
	Arboricultural impact assessment	
Reserved matters/ planning conditions	Alignment of utility apparatus (including drainage), where outside the RPA or where installed using a trenchless method	Arboricultural site monitoring schedule
	Dimensioned tree protection plan	Tree and landscape management plan
	Arboricultural method statement – detailed	Post-construction remedial works
	Schedule of works to retained trees, e.g. access facilitation pruning	Landscape maintenance schedule
	Detailed hard and soft landscape design	

Figure 1: BS 5837:2012 Table 1

1.5 Statutory Legal Protection

1.5.1 The two main sources of protection afforded to trees are i) Conservation Area (CA) control and ii) Tree Preservation Orders (TPO).

1.5.2 Trees within Conservation Areas are protected under the *Town & Country Planning Act 1990 (as amended)*, which affords blanket[2] protection to trees with a stem diameter of 75 mm and above when measured at 1.5 m from ground level.

1.5.3 Trees may also be protected by a TPO under the Town & Country Planning Act 1990 (as amended), The Town and Country Planning (Tree Preservation) (England) Regulations 2012.

1.5.4 It is a criminal offence to carry out any unauthorised works to trees that are either protected by a TPO or located within a CA, including:

- Cutting down, uprooting or wilfully destroying a tree, or wilfully damaging, topping or lopping a tree in such a manner as to be likely to destroy it;
- Any works that contravene the provisions of a TPO; and/or
- Any works in contravention to the regulations.

[2] Protection is similar to that afforded to trees protected by TPO.

1.5.5 Penalties for non-compliance of a TPO and/or CA can be unlimited, if tried in a County Court, and up to £20,000 if tried in a Magistrates Court.

1.5.6 It should be noted that the felling of trees prior to receiving full planning permission may also require a felling licence under the *Forestry Act 1967*. This requires that any persons wishing to fell 5 m^3 of trees within any three-month period (i.e. January to March, April to June, July to September and October to December) apply for a felling licence from the Forestry Commission. There are a number of exemptions to this requirement, with some of the more relevant exemptions including:

- Pruning trees;
- Felling fruit trees or trees growing in a garden, orchard, churchyard or designated public open space;
- Felling trees that, when measured at a height of 1.3 m from the ground, have a diameter of 8 cm or less;
- Felling trees immediately required for the purpose of carrying out development authorised by full planning permission;
- Felling necessary for the prevention of danger or the prevention or abatement of a nuisance[3] (e.g. threat/danger to a third party); and
- Felling necessary to prevent the spread of a quarantine pest or disease.

1.5.7 Other legislation that affords a lesser or indirect level of protection to trees includes the following:

- The *Wildlife & Countryside Act 1981 (as amended)*;
- *Conservation of Habitats and Species (amendment) Regulations 2017*; and
- *Hedgerow Regulations (1997)*.

1.5.8 All of the above provide for the identification and safeguarding of flora and fauna that may be found in association with trees and woodlands.

1.6 Protected Species

1.6.1 Trees can contain features such as cavities, cracks, splits and loose bark which can offer potential habitat to species such as bats. Bats and their roosts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) as well as the Conservation of Habitats and Species Regulations 2018 (as amended) and are also listed under Section 41 of the Natural Environment and Rural Communities Act 2006.

[3] NB - This only applies when a real and/or immediate danger is present.

1.6.2 Trees provide potential nesting habitat for birds and all UK birds and their active nests are protected under the *Wildlife & Countryside Act 1981 (*as *amended)*. Bird species that are listed on Schedule 1 of *The Act* are also protected against disturbance of their active nest(s).

2 THE SURVEY

2.1 Tree Preservation Orders or Conservation Areas

2.1.1 WA utilised Warrington Borough Council's online interactive mapping tool[4] on the 9th April 2019 to ascertain whether any trees within and/or immediately adjacent to the Site are protected by TPO and/or CA status.

2.1.2 This search revealed that there are no TPOs or CAs are present on/immediately adjacent to the Site on the date of the investigation. However; this situation is liable to change as LPA's can assign these designations at any time. Therefore, we advise that the protective status of these trees is checked again prior to undertaking any planned works.

2.2 Survey Methodology

2.2.1 The arboricultural survey was undertaken by Scott Reid on 1st April 2019 using the methodology set out in BS5837:2012 *Trees in Relation to Design, Demolition and Construction* – Recommendations (see Appendices 3 and 4). Weather conditions during the survey were bright and clear.

2.2.2 Each individual surveyed tree (T), tree group (G), woodland (W) and hedgerow (H) was given a sequential reference number.

2.2.3 The surveyed trees and hedgerows were then identified by their common name. Where a number of surveyed trees formed a cohesive feature, such as groups, woodland compartments or whole woodlands, they were recorded, assessed and plotted as groups (G) or as woodland (W). Whilst not every tree within groups are surveyed, a representative sample of the largest edge trees were measured in order to be able to plot the group or woodland crown spreads and RPAs. Where detailed plans show development proposed within a group or woodland, all trees within influencing distance of the development proposals are recorded, plotted and assessed.

2.2.4 A series of measurements were taken where appropriate, including:

- Stem diameters measured at 1.5 m above ground level with a standard diameter measuring tape to enable RPAs to be calculated;

[4] http://mapping.warrington.gov.uk/wml/Map.aspx?MapName=Planning_and_LLC_External

- Tree height, crown height and direction of first significant branch in the crown above ground level measured using a Truepulse 200L laser to inform on ground clearance, crown/stem ratio and shading; and
- Crown (branch) spreads measured with a Truepulse 200L at the four cardinal points (i.e. north, east, south and west) to enable an accurate representation of the crowns to be plotted on the TPP.

2.2.5 A description of the life stage of each surveyed tree is identified as follows:

- Young – Newly planted trees and self-seeded trees;
- Semi-mature – Large nursery stock that can be newly planted or self-seeded trees still in the early stages of establishment;
- Early mature – Trees in the first third of their life cycle which is characterised by their quickness of growth and subsequently significant increase in size;
- Mature – Trees in the second third of their life cycle, characterised by reaching their ultimate size and slowing of annual incremental growth;
- Late mature – Trees in the final third of their life cycle, often characterised by showing signs of decline; and
- Veteran – Trees that show ancient tree characteristics irrespective of their age, such as crown retrenchment and decaying wood habitat.

2.2.6 An assessment of each tree's physiological and structural condition is identified as G (good), F (fair), P (poor) or D (dead). An estimated remaining contribution in years within the context of the current Site usage was identified as <10, 10+, 20+ or 40+.

2.2.7 The trees were then classified in accordance with the BS5837:2012 tree quality assessment categories ‘A’, ‘B’, ‘C’ and ‘U’ (see category criteria and grading within Appendix 3). ‘A’ and ‘B’ category trees are considered as ‘high’ and ‘moderate’ quality, respectively, and are considered as a constraint to development. As such, these trees should be retained and afforded appropriate protection during development. ‘C’ category trees are considered to be of ‘lower’ quality due to their condition or ‘lower’ amenity value and are, therefore not usually considered a constraint to development. ‘U’ category trees are those in such a ‘poor’ condition that they cannot usually be retained within the current Site context for longer than ten years. It should be noted that in some cases, category ‘U’ trees may have valuable habitat/ecological value despite being in poor condition. In such cases, where it is safe to do so, these trees may be recommended for retention and/or pruning works. Where relevant, we will bring such trees to your attention. Where trees are located outside of the red and blue line Site boundaries, irrespective of their BS 5837 categorisation, these should be considered as a constraint during the Site layout design process and protected during construction, as such trees are not within the control of the Site owner.

2.2.8 Root Protection Areas (RPAs) are calculated for individual trees utilising the methodology set out in BS 5837:2012, which is calculated by multiplying the stem diameter (measured at 1.5 m from ground level) by twelve for single-stemmed trees and a variant on this for multi-stemmed trees. For surveys in England (and outside England where it is a Local Planning Policy requirement), individual veteran trees are given a standard BS 5837 RPA and also a secondary veteran tree RPA, to accord with government's standing advice 'Ancient woodland, ancient trees and veteran trees: protecting them from development'[5] and local planning policy, which is based on a calculation of fifteen times the stem diameter or five metres beyond the crown spread, whichever is greater.

2.2.9 For tree groups, woodlands and hedgerows, the calculated RPAs are based on a set distance from the canopy edge of the tree groups, woodlands and hedgerows. This calculation is based on the largest stem diameter of the trees on the edge of the tree groups and woodlands and the crown spread measurement for these edge trees. A variant of the tree group and woodland RPA calculation is used to calculate hedgerow RPAs, with the calculation based on the largest stem diameter of the hedgerow woody plants and the hedgerow width.

2.2.10 Further details for each tree, and the groups of trees surveyed are set out in the Arboricultural Survey Schedule (see Appendix 1) and on the Tree Protection Plan Ref. No. SH11739-033 Rev. B.

2.3 Report Limitations

2.3.1 Trees are influenced by a variety of environmental variables, which can affect the health of trees causing biomechanical and physiological changes. All comments made on tree health reflects their physical condition at the time of the survey. Due to the changeable nature of trees and other site/environmental conditions, which may influence trees, the preliminary management recommendations/ further works for the surveyed trees undertaken, which can be found in Appendix 1 of this report, are only valid for a period of 12 months from the date of the Site survey (1st April 2020). These recommendations relate specifically to the general maintenance of tree health and safety and do not affect the implications of this Arboricultural Impact Assessment and therefore, the results of the survey remain valid.

[5] https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences

2.3.2 Although comments and recommendations on the safety of particular trees may have been made, this survey is not a Tree Risk Management Survey and thus should not be treated as such. All trees were surveyed from ground level only and in a solely visual nature. However, where trees have been identified as presenting an imminent safety risk due to structural defects, this has been brought to the attention of the client and treated as a separate matter. Should trees require further detailed assessment (decay detection, aerial inspections) and do not present an imminent safety risk, the information will be detailed within the survey schedules.

2.3.3 Any management recommendations have been made in accordance with BS3998: 2010 Tree Works – Recommendations; and/or industry best practice. Works have been recommended in accordance with any statutory obligations on the landowners or occupiers.

2.3.4 For the purpose of this report no samples where obtained from Site for analysis or any other reason.

2.3.5 The Phase 1 Environmental Assessment prepared by WA (ref.SH11739 RPT-004) identifies some of the soil as sandy clay. At the time of writing we do not have advice from structural engineers on the shrinkability of soil or the foundation design. Given the distance of the proposed structures to the retained trees, we consider the risk of tree related subsidence to be low; however, this should be confirmed by an engineer. The species list at Appendix 1 and the location of the trees shown on the Tree Protection Plan (SH11739-033 Rev A) should be used against the current National House Building Council (NHBC) guidelines (chapter 4.2) to inform the foundation design.

3 SURVEY RESULTS AND EVALUATION

3.1 Tree Population

3.1.1 The trees assessed included sixteen individual trees and thirteen tree groups which were surveyed on and immediately adjacent to the Site.

3.1.2 Following the survey, 62% of the individual trees were classified as category 'B' quality and 38% were classified as category 'C' quality. None of the individual trees were classified as category 'A' or 'U' quality during the assessment. Category 'C' trees are those of low quality and so generally are not considered to be a major constraint to development.

3.1.3 In terms of tree groups, 46% were classified as category 'B' quality and 54% were classified as category 'C' quality. None of the groups or woodlands were classified as category 'A' or 'U' quality during the assessment.

3.1.4 An assessment of the age class of the individual tree population on Site, reveals that the population is predominantly made up of early-mature trees, with these accounting for 81% of the individual tree population. The remaining individual tree population is made of semi-mature trees, accounting for 6% of the population and mature trees accounting for 13% of the population. On this occasion, no young, late-mature or veteran individual trees were found during the survey. A summary of the age class assessment for individual trees is shown in the graph below in Figure 2.

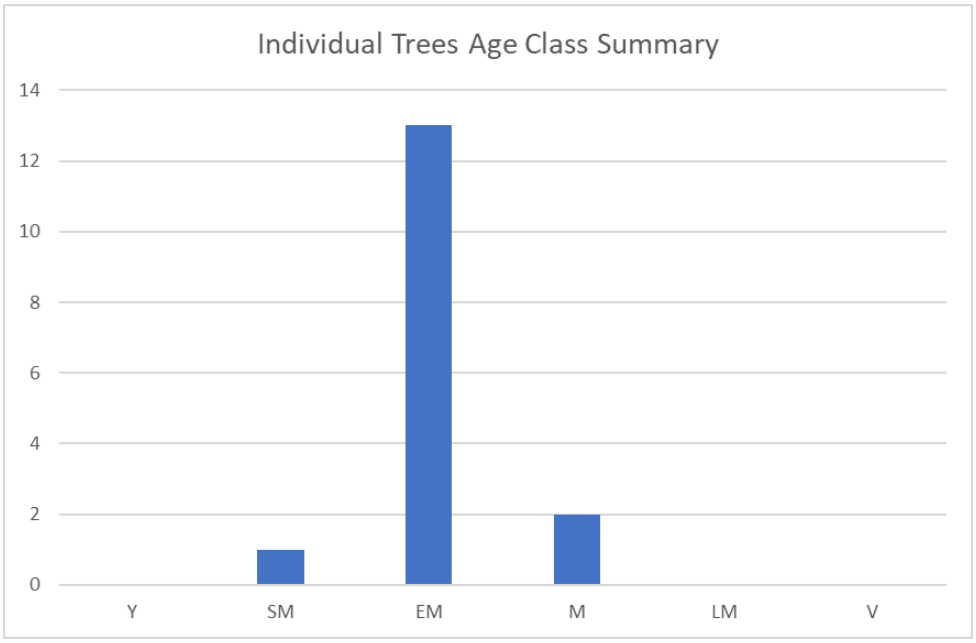


Figure 2: Individual trees age class assessment summary.

3.1.5 A detailed description of all trees and groups of trees surveyed and recommended works can be found in the Tree Survey Schedule in Appendix 1. Table 1 and Table 2 below summarises the BS 5837 quality grading of the trees found on Site, with these figures represented in graph format in Figures 3 and 4.

Table 1: Individual Trees Quality Assessment Summary				
Tree quality	**A**	**B**	**C**	**U**
Individual Trees Identification		T5,T6,T7,T8,T9,T10,T11, T12,T13,T16	T1,T2,T3,T4,T14,T15	
Totals	**0**	**10**	**6**	**0**

Table 2: Tree Groups Quality Assessment Summary				
Tree quality	**A**	**B**	**C**	**U**
Tree Groups and Woodland Identification		G1,G2,G3,G4,G10,G12	G5,G6,G7,G8,G9,G11, G13	
Totals	**0**	**6**	**7**	**0**

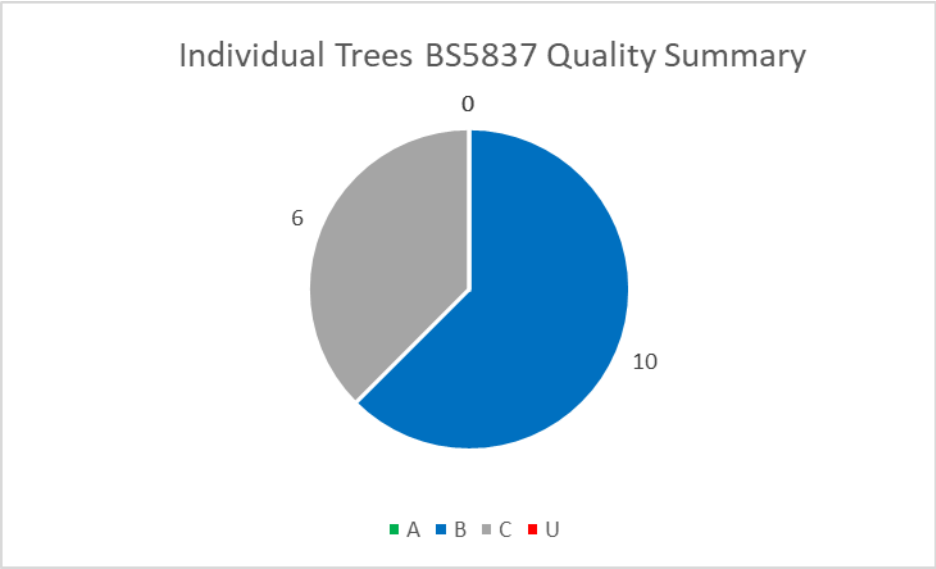


Figure 3: Overview of the BS 5837 quality of individual trees found on Site

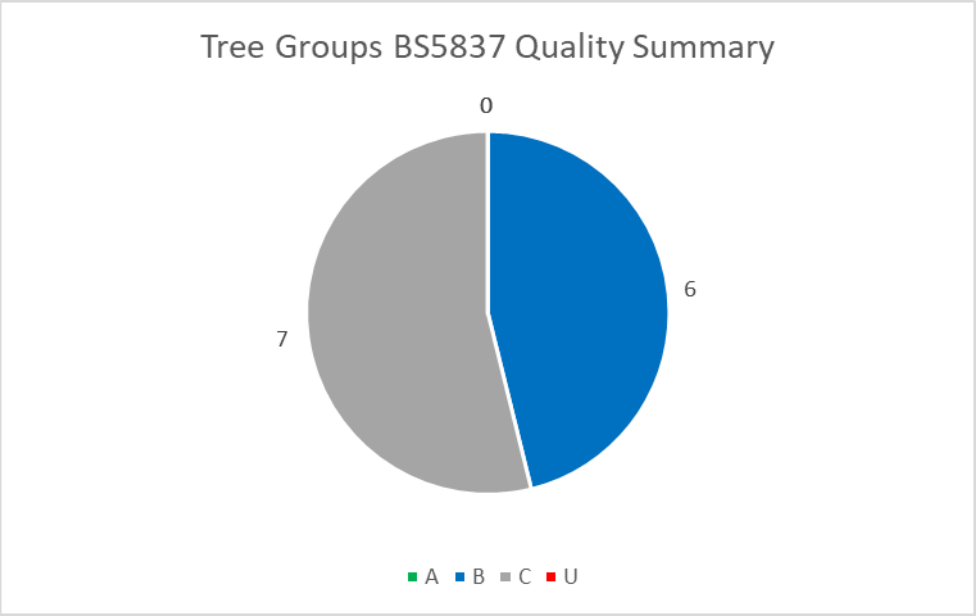


Figure 4: Overview of the BS 5837 quality of tree groups found on Site

3.1.6 WA have conducted a search using the Woodland Trust's Ancient Tree Inventory[6], DEFRA's Magic Map Application[7] and Natural England's Ancient Woodland Inventory[8] to ascertain whether any veteran trees or ancient woodland are located within influencing distance of the Site. This search revealed no ancient woodlands or currently recorded veteran trees within influencing distance of the proposed site.

3.2 General Tree Constraints

3.2.1 Tree impose a constraint to development in a variety of ways. These principally include their rooting areas, referred to as Root Protection Areas (RPAs), their current and future crown spread, and their species characteristics (e.g branch and fruit drop, production of 'honey dew', density of foliage etc). Where located on shrinkable clay soils, trees can also contribute to subsidence damage to buildings.

3.2.2 Consideration should be given during the design stage for any incompatibilities between the design and tree retention. These include (but are not limited to) the

[6] https://ati.woodlandtrust.org.uk/
[7] https://magic.defra.gov.uk/magicmap.aspx
[8] https://naturalengland-defra.opendata.arcgis.com/datasets/ancient-woodlands-england?geometry=-29.201%2C48.076%2C26.302%2C57.349

effects on the amenity value provided by existing trees, working space required during construction, infrastructure/utility requirements, highway visibility requirements and foundation design to prevent the effects of subsidence.

3.2.3 The RPA is calculated using the tree's diameter at 1.5m and represents the minimum area which should be left undisturbed around each retained tree to enable its survival following development.

3.2.4 Tree root morphology is influenced by many factors including, but not limited to; past land use, the presence of roads, structures and underground services, drainage and soils. Any of these factors may result in non-uniform root growth and therefore result in a RPA represented as a polygon RPA that reflects suitable protection of the root system.

3.2.5 The majority of tree roots are generally found within the top 600mm of soil, depending on soil types and profiles. Any disturbance or sudden changes to the rooting environment can result in damage being caused to roots and alterations to the roots physiological ability to absorb water, nutrients and undertake gaseous exchange.

3.2.6 Where alterations have been made within the trees' rooting environment, the damage can often be observed within the crown of the trees, reduced vitality and increased deadwood production. Trees are likely to decline progressively, or in some circumstances may become a hazard where stability and structural integrity has been compromised by Site operations.

3.2.7 The RPA must be protected by the installation of tree protection fencing prior to the commencement of development work on Site. The fencing provides a physical barrier that is secured, to prohibit activities considered detrimental to the retention of healthy trees (e.g. excavations, soil stripping, discharge of substances harmful to trees, storage of materials, fires). In addition to this, it may be necessary to install specialist temporary ground protection which enables access within the RPA, without causing long-term detriment to the health of the tree/s.

3.2.8 No traditional construction works should take place within the RPA of retained trees. However, in some circumstances and where there is an overriding requirement for construction and the retention of trees, it may be appropriate to employ techniques and use materials that allow trees to be retained, whilst enabling the construction. For hard surfacing, such as drives, roads and footways, utilising no-dig construction techniques and using three-dimensional geogrids and permeable wearing course

materials may be appropriate. For built structures within RPAs, the use of pile and above ground level beam foundations and/or cantilevered engineering solutions can enable structures to be constructed within RPAs. The project arboriculturist should be consulted on the appropriateness of building within retained tree RPAs, as this is not appropriate for all trees and soil types.

3.2.9 Where aerial parts of the tree crowns extend beyond the edge of the RPA, consideration should be given to protection of these parts, allowing for protection during development processes including working space. It may be appropriate to consider pruning of aerial parts to allow construction clearances and future nuisance abatement, this however must be considered by the project arboriculturist and the LPA. Where development proposals identify a need for working within the RPA/crown spread of retained trees and it can be demonstrated that retained trees remain viable, then it is important that the project arboriculturist is contacted to advise and prepare an AMS and identify appropriate stages of supervision.

4 DEVELOPMENT IMPACT TO RETAINED TREES

4.1.1 Implementation of the proposed scheme will necessitate the removal of five individual trees and seven tree groups, as detailed in full in Table 3.

4.1.2 In assessing the impacts of the proposed development on the trees on and adjacent to the Site and in proposing mitigation for these impacts, the planning application for development of the Site accords with the requirements of British Standard 5837:2012 and local and national planning policies for trees and development.

4.1.3 The proposed scheme will necessitate the removal of trees within the centre of the Site and those adjacent to the entrance/exit where changes in soil levels will occur.

Table 1: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation/Compensation**	**BS 5837 Quality Categorisation**
G3, G4, G5, G6, G7, G8, G9, T1, T2, T3, T4 & T5	The removal of trees to facilitate the proposed development	Low Impact In order to facilitate the proposed scheme, a number of trees will require removal. These include 1 category 'B' quality and 4 category 'C' quality individual trees. Two category 'B' quality groups and 5 category 'C' quality groups also require removal. The most valuable trees identified in the tree survey have been retained to the margins of the site and will continue to provide amenity and some screening benefit. The proposed removals will have a low impact on local amenity .	Extensive New tree planting forms part of the proposals and this constitutes a substantial net gain in tree numbers, compared to those requiring removal.	**B, C**
G1, G2, G11, G12, G13, T7, T8, T9, T10, T11, T12, T13 & T16	Construction in general vicinity of retained trees.	Potential Impact A number of trees and groups of trees are being retained within the scheme. There is potential for damage to retained trees, unless protective fencing is installed at the locations shown on the Tree Protection Plan, prior to construction commencing on Site.	Protective fencing, in accordance with the BS5338 default barrier specification (Appendix 4) will be installed to protect G11, G12, G13, T7, T8, T9, T10, T11, T12, T13 & T16 throughout the construction process. G1 & G2 are set back from the main construction area and will be provided adequate protection by existing post and rail fencing, as will G10 and T6.	**B, C**

5 SUMMARY AND RECOMMENDATIONS

5.1.1 The requirements of BS 5837:2012 have been complied with in assessing the arboricultural impacts arising from the proposed Motorway Service Area in this report.

5.1.2 None of the surveyed vegetation is covered by TPO or CA protection, nor are there any recorded veteran trees or ancient woodland within influencing distance of the proposed development at the time of writing.

5.1.3 The proposed scheme will necessitate the removal of some trees, the majority of which are low quality category 'C'. The most significant trees and groups on the site are category 'B' and located to the northern and eastern boundaries of the site. These are being retained and protected within the scheme. Furthermore, extensive new tree planting forms part of the proposals which will comprise a significant net gain in tree cover compared with the loses required to facilitate the layout.

5.1.4 The trees that are to be retained on the Site will be protected during the proposed works with tree protection fencing. Unless otherwise stated in an Arboricultural Method Statement (AMS), the protective fencing will comprise the default barrier described in BS5837:2012. An example of this is included at Appendix 4, with the location of the protective barrier shown on the Tree Protection Plan SH11739-033 Rev B. Signage on the fencing will also be required and an example of this is included at Appendix 5. This will be fixed to the fencing at 8 m intervals and should be A3 in size at a minimum.

5.1.5 An AMS and an updated TPP may be required by the LPA prior to commencement of the proposed development, to ensure tree protection measures are fully specified and implemented, which can be conditioned by the LPA if required.

6 REFERENCES

1. British Standard, BS 3998:2010 Tree work. Recommendations. (The British Standards Institution, 2010).
2. British Standard, BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. (The British Standards Institution, 2012).
3. NJUG Volume 4 - Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees (Issue 2:16th November 2007).
4. Quantified Tree Risk Assessment User Manual, (QTRA User_Manual_V5.1.4_2015_01). (Incorporating extracts).
5. Ministry of Housing, Communities and Local Government (2014) Tree Preservation Orders and Trees in Conservation Areas.

   https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas
6. Forestry Commission (2007) Tree Felling – Getting Permission.
7. Claus Mattheck (2007) Updated field guide for Visual Tree Assessment.
8. Forestry Commission & Natural England (Updated 4th January 2018) Ancient Woodland and Veteran Trees: Protecting them from Development – Guidance.

   https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences#veteran-trees

Appendix 1
Tree Survey Schedule

Location: Warrington Motorway Services (Job. No. SH11739)

Estimated Stem Diameters & Other Measurements highlighted in this colour

Surveyor: SR

Weather: Bright and Clear

Survey Date: 01.04.2019

Item type: T (tree), G (group), H (hedge), W (woodland)	Tree/ Group Ref. No.	Botanical Name	Height(m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm)					Number of stems (if more than 5)	Age Class: Y (Young), SM (Semi-Mature), EM (Early-Mature), M (Mature), LM (Late-mature), V (Veteran)	Condition		Estimated Remaining Contribution: (<10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Sub Category	Comments	Preliminary management recommendations/ further works	BS 5837 Root Protection Area (m²)	BS 5837 Root Protection Radius (m)
					North	East	South	West								Physiological Condition: G (Good), F (Fair), P (Poor), D (Dead)	Structural Condition: G (Good), F (Fair), P (Poor)							
G	1	Lombardy poplar, ash, blackthorn, goat willow, hawthorn, Scots pine, downy birch, sessile oak, Rowan, alder & hazel.	20	0 N/A	As per GPS plotting				420						SM-EM	G	G	40+	B	2	Typical planted shelterbelt of mixed species. A decent landscape buffer to the adjacent motorway roundabout.	No action required.	N/A	RPA 2.4m beyond canopy extent
G	2	Lombardy poplar, downy birch, hazel, goat willow, crack willow, hybrid black poplar, red oak & English oak.	21	0 N/A	As per GPS plotting				360						SM-EM	G	G	40+	B	2	Typical, mixed species shelterbelt planting providing some screening to the adjacent fields. Multiple dead stems noted to the west of group, surrounding an area of standing water.	If land use intensifies near group, re-inspect trees for safety/risk management objectives.	N/A	RPA 0.3 beyond canopy extent
G	3	Downy birch, hazel, ash, alder, goat willow, Lombardy poplar, rowan & red oak.	18	0 N/A	As per GPS plotting				400						SM-EM	G	G	40+	B	2	A small, typical mixed shelterbelt group. Offers limited screening to the adjacent fields.	No action required.	N/A	RPA 2.8m beyond canopy extent
G	4	Lombardy poplar, hybrid black poplar & ash.	20	2 N/A	As per GPS plotting				400						SM-EM	G	G	40+	B	2	Small group of poplar and ash adjacent to a field boundary ditch. Small deadwood noted. One small snapped stem noted (acceptable condition at this time).	No action required.	N/A	RPA to canopy extent
G	5	Crack willow & elder.	10	0 N/A	As per GPS plotting				180						SM-EM	F	P	10+	C	1	A small cluster of snapped/collapsing willow stems and small elder trees. Of limited arboricultural value.	No action required.	N/A	RPA to canopy extent
T	1	Crab Apple	6	0 N/A	2	2	2	1	100						EM	G	G	10+	C	1;2	Small, self-set specimen, flailed over footpath for clearance. No major visible defects. Of limited arboricultural value.	No action required.	4.5	1.2
G	6	English oak, blackthorn, goat willow, crack willow, hawthorn & alder.	6	0 N/A	As per GPS plotting				75						SM	G	G	20+	C	1	Linear group of scrub vegetation and small trees along ditch. Of limited arboricultural value.	No action required.	N/A	RPA to canopy extent
G	7	Common Alder	9	0 N/A	As per GPS plotting				120						SM	G	G	40+	C	1	An establishing group of alder surrounding a field ditch.	No action required.	N/A	RPA to canopy extent
T	2	Goat Willow	6	0 N/A	4	4	4	4	240						EM	F	F	10+	C	1	Small tree of limited arboricultural value. Partially uprooted at base. Insect boring holes also at base (species unknown).	No action required.	26	2.9

G	8	Alder, goat willow & elder.	11	0 N/A	As per GPS plotting				180						SM-EM	G	G	40+	C	2	A small planted group of trees beyond fence line (one self-set specimen is present on site side of fence). Occasional small deadwood noted. Acceptable condition at this time.	No action required.	N/A	RPA to canopy extent
T	3	Crack Willow	13	0 N/A	6	5	7	10	430	440					M	F	F	20+	C	1	Bifurcated specimen from base with a well proportioned crown . Multiple branch snap-outs present (typical of species) and more are expected in future due to the genetic propensity of the species to do so.	No action required.	171	7.4
G	9	Elder & willow.	6	0 N/A	As per GPS plotting				150						SM-EM	F	F	10+	C	1	Areas of self-set scrub vegetation of limited arboricultural value. Some dead standing stems noted.	No action required.	N/A	RPA to canopy extent
T	4	Goat Willow	7	0.5 N/A	5	2.5	5	3	160					6	EM	G	G	10+	C	1	And open grown specimen with a well developed crown . Two stems rubbing at base. No major visible defects.	No action required.	70	4.7
T	5	Downy Birch	10	0.5 N/A	3	4	4	1.5	300						EM	G	G	20+	B	1	A self-set specimen with no major visible defects.	No works required.	41	3.6
G	10	Alder, Scots pine, willow, hawthorn, silver birch, ash & hazel.	15	0 N/A	As per GPS plotting				330						EM	G	G	40+	B	2;1	A typical mixed, maturing shelter belt on the far side of boundary fence line. It continues off-site further to the north.	No works required.	N/A	RPA to canopy extent
T	6	Common Oak	10	2.5 SE	4	4	4	6	600						EM	G	G	20+	B	2;1	A larger tree within wider shelter belt, worthy of individual classification. Multiple pruning wounds and dead stubs within crown. Minor ivy on stem. Medium sized deadwood within crown.	No works required.	163	7.2
T	7	Downy Birch	11	1 N/A	5	5	4	4	300	250					EM	G	G	20+	B	1;2	Bifurcated specimen from 1m with a well developed crown. Minor ivy to stem . One snapped branch stub in crown.	No works required.	69	4.7
T	8	Downy Birch	11	1 N/A	5	6	5	6	500						EM	G	F	20+	B	1;2	An open grown specimen with a well balanced crown. The lowest branch is partially snapped. A small cavity is present on the underside of a branch at 4m. Ivy on stem.	No works required.	113	6.0
T	9	Downy Birch	8	1 N/A	4	4	3	4	260	130					EM	G	G	20+	B	2	Multiple pruning wounds due to previous crown lifting, back to stubs works. Bifurcated specimen from 1m, with a well proportioned crown.	No works required.	38	3.5
T	10	Downy Birch	10	1 N/A	4	5	2	4	410						EM	G	G	20+	B	2;1	Minor wound at base with onset of decay. Multiple stubs due to previous crown lifting over field. Acceptable condition at this time.	No works required.	76	4.9
T	11	Downy Birch	10	1.5 E	4	5	4	3	330						EM	G	G	20+	B	1;2	And open grown specimen with a well developed crown. Small wound at base with onset of decay. Multiple stubs in lower crown due to previous crown lifting.	No works required.	49	4.0

T	12	Downy Birch	9	1 W	4	4	3	4	270						EM	G	G	20+	B	2	Small column of decay forming at base of stem. Occasional branch stubs in crown due to previous lifting.	No works required.	33	3.2
T	13	Downy Birch	11	1 N	4	4	2	3	260	240					EM	G	F	20+	B	2	And open grown tree with a well balanced crown. Multiple cavities forming in the crown due to wounding. Stubs in crown due to previous crown lifting.	No works required.	57	4.2
G	11	Common Elder	6	0 N/A	As per GPS plotting				120					7	EM	F	F	10+	C	1	A group of self-set trees of limited arboricultural value. Some uprooted specimens within the group.	No works required.	N/A	RPA to canopy extent
G	12	Downy Birch	16	0 N/A	As per GPS plotting				490						EM	F	F	40+	B	1;2	A large, cohesive landscape feature comprising of a linear group of birch with an occasional understory of elder. The birch are situated along the far side bank of the boundary ditch and the root plates of many trees are gradually becoming eroded/undermined. Occasional decay noted on some specimens. Occasional dead standing stems within the group. Acceptable condition at this time, given the current land usage.	Re-inspect for safety/ risk management objectives, post development.	N/A	RPA to canopy extent
T	14	Common Ash	6	0 S	3	4	4	4	260						SM	G	G	40+	C	1;2	A small self-set specimen situated off site on the motorway embankment. Of limited arboricultural value. No major visible defects. Occasional Pruning wounds due to crown previous lifting.	No works required.	31	3.1
T	15	Hawthorn	7	0 N/A	4	4	4	4	270						M	G	G	10+	C	1	Situated off site on the motorway embankment. A self-set, open grown specimen with a balanced crown. Of limited arboricultural value.	No works required.	33	3.2
G	13	Hawthorn, elder & blackthorn.	8	0 N/S	1	1	1	1	200						M	G	G	10+	C	1	A group of maturing boundary trees, likely originally part of a now lapsed hedgerow. situated off site on the motorway embankment. One elder has split out towards the slip road and should be removed.	Remove elder that has split out towards the slip road (marked on the Tree Protection Plan) - as soon as practically possible.	N/A	RPA to canopy extent
T	16	Sycamore	13	2.5 N/A	5	5	5	6	300	270	170				EM	G	G	40+	B	1	Trifurcated specimen from base with a well developed crown. Occasional Pruning wounds due to previous crown lifting. No major visible defects.	No works required.	87	5.3

Appendix 2

Survey Methodology

The following features of each tree, group of trees or woodland have been recorded in the Arboricultural Data Sheets:

- Species includes common names.
- Height measured in metres from the stem base. Where the ground has a significant slope, the higher ground is selected.
- Crown height is measured in metres and is an indication of the average height at which the main crown begins.
- Stem diameter is measured in millimetres at 1.5m above the adjacent ground level (upslope on sloping ground).
- Crown spread is measured in metres and taken at the four cardinal points to derive an accurate representation of the crown.
- Age class of the tree is described as young, semi-mature, early-mature, late-mature, mature or veteran.
- Physiological condition is classed as good, fair, poor, or dead. This is an indication of the health of the tree and takes into account vitality, presence of disease and dieback.
- Structural condition is classed as good, fair or poor. This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions.
- Life expectancy is classed as: less than 10 years (<10), at least 10 years (10+), at least twenty years (20+) or at least 40 years (40+). This is an indication of the number of years before the removal of the tree is likely to be required.
- Comments include a brief description of the tree with comments on the form, vitality, health and any significant defects that may be present.

Appendix 3

Tree Categorisation Method

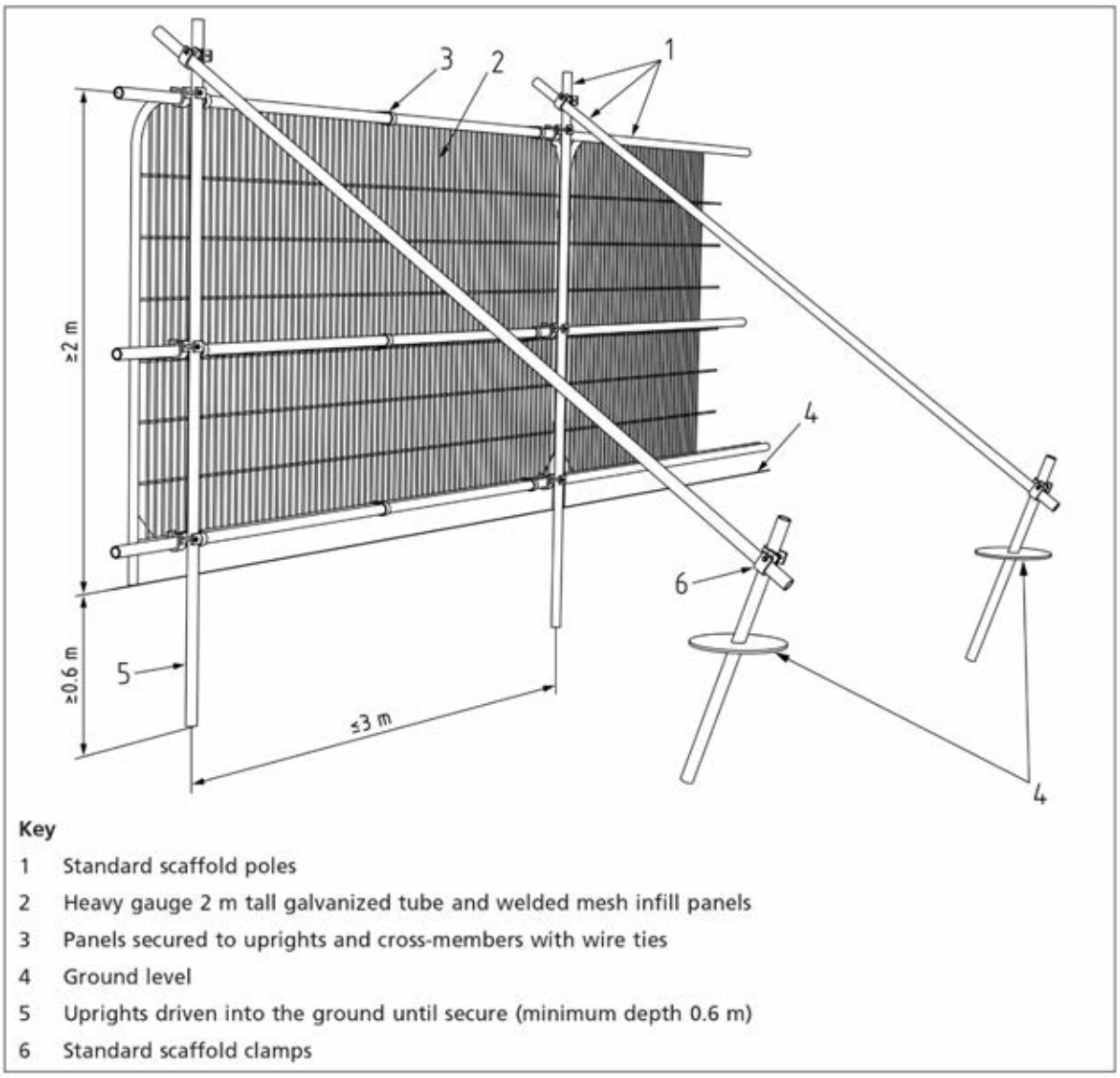
Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7**.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

A single tree, group or woodland can come under one or more sub-headings. This does not confer on it a higher value than a tree with a single value. For the purposes of this report.

Appendix 4

Tree Protection Fencing



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Appendix 5
Tree Protection Signage


PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.


TREE PROTECTION AREA
KEEP OUT !
(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION
ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

Appendix 6

Glossary of Common Terms Used in Arboriculture

Abscission. The shedding of a leaf or other short-lived part of a woody plant.
Abiotic. Pertaining to non-living agent's e.g. environmental factors.
Absorptive Roots. Non-woody short-lived roots, generally having a diameter less than one millimetre, the primary function of which is the uptake of water and nutrients.
Access Facilitation Pruning. One off pruning operation to provide access for development operation. Pruning that will not be detrimental to trees health or amenity.
Arboricultural Method Statement (AMS). A methodology for the implementation of development where encroachment within the RPA has the potential to cause damage or loss of retained trees.
Arboriculturist. Someone who through relevant training and experience has gained knowledge in the expertise of trees.
Adaptive Growth. The process by where wood formation rates increasing in the cambial zone, as well as wood quality, responds to gravity and other forces acting on the cambium.
Adaptive Roots. The adaptation of existing roots; or a production of new roots in response to damage or decay.
Adventitious Buds, Roots, Shoots. Which grow in other than primary apical control.
Anchorage. The process in which a tree uses its roots system to support itself within the soil structure.
Ancient: A tree that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species.
Arisings. Parts of the tree that has been removed for disposal, branches, leaves, roots etc.
Canker. Area of dead cambium killed by overlying pathogenic tissues.
Cavity. A hole in the woody structure of the tree; often caused through decay.
Cleaning Out. The removal of dead, diseased crossing branches, damaged branches and alien structures.
Competent Person. Person with training and experience in accordance with the proposed matter being addressed, having an understanding of a particular matter being approached.
Condition. An indication of the physiological vitality of a tree, but not the stability of a tree.
Construction. A Site based operation that has the potential to affect retained trees.
Construction Exclusion Zone. An area based on the RPA from which construction activity is prohibited.
Coppicing. Removal of all aerial parts of the tree leaving a stump for regeneration of new shoot.
Crown/Canopy. The parts of the tree that supports the leaves.
Crown Lifting. The removal of limbs and small branches to a specified height above ground level.
Crown Thinning. The removal of a proportion of secondary branch growth throughout the crown to produce an even density well balanced crown structure.
Crown Reduction/Reshaping. Removal in the height to a specified description to maintain a flowing crown structure.
Deadwood. Non-functional branches which no longer support natural growing conditions of the tree but may be beneficial for the support of habitats and species, possibly including rare saproxylic invertebrates. Thus, may also be referred to as 'Decaying Wood Habitat' or 'Dysfunctional wood'. Size ranges for deadwood referred to in this report and/or Appendix 1: - Small (<75 mm diameter), Medium (76 – 150 mm), Large (151-300) mm and Very large >301 mm. For some species such as oak etc, the risk of deadwood falling from the tree can be lesser than for other species, due to the variety of wood strengths of different tree species.

Defect. Any area of the tree that longer has an optimal mechanical uniformity of stress, making the tree unsuitable for its location.
Dieback. Death of woody parts of the tree starting at distal ends of the tree.
Disease. Damage occurring to living organisms as a result of pathenogenic micro-organisms.
Distal. Furthest distance away from the main body of the tree.
Dysfunction. In woody tissues, the loss of physiological function, especially water conduction, in sapwood.
Epicormic Growth. Growth from dormant or adventitious buds, not developing from the first shoot.
Girdling Roots. A circling root which constricts the stem or roots, with the potential to cause death and the restriction of flow within the phloem.
Heartwood. Dysfunctional xylem which no longer has conductive properties, but which has become an integral structural part of the tree.
Heave. The swelling of shrinkable clay soils, often when vegetation has been removed allowing soil rehydration to develop, with the potential for listing structures (e.g. walls).
Included Bark/Acute Forks. Face to face contact of bark usually at fork unions, or branch unions.
Lopping/Topping. A term used to describe the removal of large sized branches
Monolith. Removing some or most of the trees crown and sometimes the upper stem, in order to retain as much of the tree as standing deadwood habitat for ecological reasons.
Pathogen. A micro-organism that causes disease within another organism.
Phytotoxic. Toxic to plants.
Pollarding. The removal of the tree canopy to produce knuckles where new growth develops and is removed cyclically usually performed on young trees.
Pruning. Selective removal of parts of the tree to achieve a desired outcome.
Root Protection Area(RPA). An area around a tree identified by multiplying the stem diameter at 1.5 m from ground level by 12 to produce a radial area or rooting volume around a tree to be protected Ref. BS 5837: 2012.
Service. Any above and below ground structure or apparatus for utility provision.
Size of part. Relating to risk assessments, identifying the size of the hazard, or parts of a tree which may cause harm if failure occurs.
Stem(s). The main structure from the ground up supporting the crown.
Stress. In plants, the physiological depletion as a result of environmental influences.
Structure. A manufactured object, such as building, roads, path, wall or excavated structures.
Structural Roots. The primary larger diameter roots which hold and support the aerial parts of the tree.
Subsidence. The shrinkage of soil through the absorption of water via vegetation and the sinking effects on surrounding architectural structures.
Targets. In risk assessment, persons or property at risk of harm as a result of a hazard (falling tree, branch, etc.).
Tree Protection Plan (TPP). A scaled drawing informed by descriptive text where necessary, based upon finalised Site proposals, showing trees for retention and illustrating the tree and landscape protection measures.

Veteran Tree. Tree that, by recognized criteria, shows features of biological, cultural or aesthetic characteristics of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.
Windthrow. The blowing over a tree at its roots.

DRAWING

DO NOT SCALE FROM THIS DRAWING

KEY

- RED LINE BOUNDARY
- HEDGE
- TREES REMOVED DUE TO CONDITION AND/OR TO ENABLE DEVELOPMENT
- LOCATION OF TREE PROTECTION FENCING
- CATEGORY A CROWN SPREAD
- CATEGORY B CROWN SPREAD
- CATEGORY C CROWN SPREAD
- CATEGORY U CROWN SPREAD
- ROOT PROTECTION AREA
- T1/G1/W1/H1 TREE/TREE GROUP/WOODLAND/HEDGE NUMBER

TREES
QUALITY CATEGORIES BASED ON BS5837:2012 TREES IN RELATION TO DESIGN, DEMOLITION AND CONSTRUCTION - RECOMMENDATIONS
RPA - ROOT PROTECTION AREA
WHERE RPA IS NOT VISIBLE IT EXTENDS TO THE SAME DISTANCE AS THE CANOPY.
THE ORIGINAL OF THIS DRAWING WAS PRODUCED IN COLOUR - A MONOCHROME COPY SHOULD NOT BE RELIED UPON.

366800E 366900E 367000E 367100E 367200E

393900N 393800N 393700N 393600N 393500N 393400N 393300N

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16
G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12 G13
J11

96m GTL Easement
12m GTL Easement
Gas Transmission Line
12m GTL Easement
Car park entrance 3
Caravan Parking (75 spaces)
Maintenance Access
Coach Parking (16 Spaces)
Car park entrance 2
Service Yard
Car Parking (536 Spaces)
Car park entrance 1
Silver Lane Brook - Diversion
Drain
Bunding
FFL: 20.65m AOD
Play Area
HGV Parking (105 Spaces)
Peat Habitat Zone
Long Load Parking
Tanker
HGV Fuel Filling Station
FFL: 22.55m AOD
Car Fuel Filling Station
Silver Lane Brook - Diversion
Elder within G13 to be removed

SCALE BAR
0m 50 100 150
Metres

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
C	Drawing revised to include building layout from RMS - 519 - ZZ - XX - DR - A - 0751	02.08.19	HP		
B	Revised with updated red line boundary.	22.07.19	HP		
A	First Issue	18.04.19	YK	MS	MS

CLIENT
EXTRA MSA GROUP

PROJECT
MOTORWAY SERVICES. WARRINGTON

DRAWING TITLE
TREE PROTECTION PLAN

DRG No.	REV
SH11739-033	C

DRG SIZE	SCALE	DATE
A1	1:1000	08/04/2019

DRAWN BY	CHECKED BY	APPROVED BY
MAB	MS	MS

wardell armstrong
STOKE ON TRENT | TEL 01782 276700
WWW.WARDELL-ARMSTRONG.COM
BIRMINGHAM BOLTON CARDIFF CARLISLE EDINBURGH GLASGOW LONDON MANCHESTER NEWCASTLE UPON TYNE SHEFFIELD

N:\SH\SH11739 - MOTORWAY SERVICES, WARRINGTON\03 - DESIGN\AUTOCAD\SH11739-033-C TREE LOCATION AND CONSTRAINTS PLAN.DWG

wardell-armstrong.com

STOKE-ON-TRENT
Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)1782 276 700

BIRMINGHAM
Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

BOLTON
41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

CARDIFF
Tudor House
16 Cathedral Road
Cardiff
CF11 9LJ
Tel: +44 (0)292 072 9191

CARLISLE
Marconi Road
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)1228 550 575

EDINBURGH
Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GLASGOW
2 West Regent Street
Glasgow
G2 1RW
Tel: +44 (0)141 433 7210

LEEDS
36 Park Row
Leeds
LS1 5JL
Tel: +44 (0)113 831 5533

LONDON
Third Floor
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)207 242 3243

MANCHESTER
76 King Street
Manchester
M2 4NH
Tel: +44 (0)161 817 5038

NEWCASTLE UPON TYNE
City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

TRURO
Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International offices:

ALMATY
29/6 Satpaev Avenue
Regency Hotel
Office Tower
Almaty
Kazakhstan
050040
Tel: +7(727) 334 1310

MOSCOW
21/5 Kuznetskiy Most St.
Moscow
Russia
Tel: +7(495) 626 07 67

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ES Part 1 Appendix 16

BRENTWOOD
LIGHTING DESIGN

Extra MSA Group

Warrington Motorway Service Area, J11 M62

Lighting Assessment

August 2019

Revision	Description	Issued by	Date	Checked by
-	Draft Issue	LG	11/04/19	LG/SM
P01	Draft Issue	LG	27/06/19	LG/SM
P02	Draft Issue	LG	19/07/19	LG/SM
P03	Review Issue	LG	02/08/19	LG/SM
P04	Review Issue	SM	07/08/19	LG/SM
P05	Final Issue	LG	22/08/19	LG/SM

Contents

0 Executive Summary

This report examines the existing lighting environment and assesses any adverse effects of the obtrusive light effect of the Proposed Development. In particular, it considers the potential effects of horizontal and vertical light trespass, glare and direct sky glow.

Where:

- Light Trespass: The spilling of light beyond the boundary of a property which may cause nuisance to others - Horizontal (ground level) and Vertical (residential windows and ecology zones);
- Glare: The uncomfortable brightness of the light source against a dark background which results in dazzling the observer, which may cause nuisance to residents and a hazard to road users;
- Direct Sky Glow: The direct upwards spill of light into the sky which can cause a glowing effect and is often seen above cities when viewed from a dark area.

Overview of the Site and Adjacent Area

The Proposed Site is located near Birchwood, between Culcheth and the M62 Motorway within Cheshire. The landscape setting of the Site is characterised by an extensive unlit patchwork of mixed agriculture and farmed landscape to the North & East, with an industrial park to the South West and M62 motorway areas to the South (both of which are artificially illuminated).

Taken on a regional scale, existing saturated sky glow is notable from bordering major urban development associated with nearby locations (e.g. Birchwood, Birchwood Park (Industrial), Culcheth, Warrington, Manchester, and the M62 Motorway).

Within the Site boundary, the environment is generally unlit. However, notable light spill from the motorway does encroach on to the southern boundary and associated land area. A study has been undertaken to identify relevant legislation, good practice guidance, local designations and relevant planning policy in relation to lighting following the CIE 126 (1997), Institute of Lighting Professionals – Guidance Notes for the Reduction of Obtrusive Light GN01: 2011 and CIE 150 (2017) guidance.

Appendix 1.0 provides an overview of the measured survey undertaken.

The Institute of Lighting Professionals – Guidance Notes for the Reduction of Obtrusive Light GN01: 2011 provides reference for the Environmental Zone Criteria for light nuisance into windows (measured in Lux) defined as:

- E0: Protected surroundings, dark landscapes – UNESCO Starlight reserves, IDA Dark Sky Parks;
- E1: Intrinsically dark landscapes - National Parks, Areas of Outstanding Natural Beauty etc.;
- E2: Low district brightness areas – Village or relatively dark outer suburban locations;
- E3: Moderate district brightness – Small town centres or suburban locations; and
- E4: High district brightness – Town/city centres with high levels of night-time activity.

This guidance then provides limiting obtrusive light thresholds for the respective zone.

Due to the presence of local skyglow, existing artificial urban and highway lighting bordering the Proposed Development, it is considered that this area is typical of an E2 / partial E3 zone. However, due to the rural nature of the location and areas of natural conditions, on a precautionary approach the thresholds are based on E2 Zone classification (Low district brightness).

Sensitive Receptors included within this Assessment

The study area includes sensitive receptors within and outside the boundaries of the Site which are likely to have a direct line of sight towards the Proposed Development and which may therefore be affected during the operational phase. The likelihood of obtrusive light impact (Lux) is subject to distance and can exclude some potential receptor locations.

- Residential
- Ecology – Light Sensitive
- Viewpoints
- Silver Brook Diversion
- Dark Sky

Completed Development (Operational) Lighting Parameters

External Operational Lighting Parameters have been prepared for the purposes of this application. Detailed lighting design, which will be prepared within these parameters and any mitigation recommended within this report, will be completed as a subsequent detailed submission.

Appendix 2.0 provides the parameters for the assessment lighting arrangements (MSA and Access Roundabout).

Quantified assessment provides the obtrusive light effect of the operational phase for the Proposed Development. This forms the basis of information for relevant chapters of the Environmental Statement.

Regarding ecological and viewpoint receptors the significance of effect as a result of operational lighting is not determined within this report. However, assessment results are provided to advise and inform the assessment within each respective chapter.

Quantitative Assessment - Completed Development (Operational) Phase

The intention of the assessment is to convey how the Proposed Development will fit into the existing Illumination profile of the area and how that will comply with relevant legislation requirements and best practise Design Guidance.

In terms of adverse effects, it is noted that this predominately relates to ecology locations to the western, southern and south westerly boundaries, where light spill from the new roundabout lighting proposals and the proposed perimeter lighting causes light trespass toward proximity areas. This is

also the case for the proposed Silver Brook diversion (primarily within the eastern area of the Site). However, it should be noted that the majority of southern boundary locations already experience existing baseline conditions in excess of natural conditions as a result of the current motorway and roundabout lighting.

In relation to minimising adverse effects to landscape viewpoints, the MSA operational lighting proposals are limited in height and intensity to achieve the required illumination standards. This effectively controls the possibility of glare (being the key indicator for observer locations) for all distant viewpoints, however proximity viewpoints may suffer from a slight adversity unless mitigated accordingly.

With respect to the proposals for the new roundabout lighting (due to height), unless screened it is likely that glare will be experienced from a number of viewpoint locations and proximity residential R04 – Birchwood Residential Area - Rear Aspect to South of Site (Inglewood Close).

Mitigation

In general, it is considered that the above potential adverse effects can be effectively mitigated to a degree of minimal significance over the current baseline condition.

With due regards to the outlined embedded good practise measures, the following mitigation measures (operational) should be considered in the detailed lighting design / installation:

- Where practical, adopting an appropriate control strategy for the operational lighting so that, when not required and subject to Health and Safety assessment and site security requirements, non-essential lighting is switched off (occupancy sensing) at a pre-determined time in order to further reduce the effect.

- Where feasible, all luminaires used around the perimeter of the site should be mounted within the Site, so that the main photometric distribution of the luminaire will be towards the task area, keeping all light within the boundary of the development and preventing artificial light spilling outside of this;

- Wherever possible consideration should be given to the need for lighting in areas where ecology habitat crosses or is situated directly adjacent to. Should H&S require artificial lighting to these areas all luminaires should be directed away from the habitat area and shielded appropriately (light shields applied post installation in addition to being integral to the luminaire). Being particularly relevant to the Site perimeter ecology areas the Silver Brook diversion and proximity viewpoints.

- Wherever possible and subject to landscape design, the retention of trees to the Site perimeter.

- Wherever possible and subject to landscape design, the implementation of new / supplementary dense natural screening (treelines, foliage etc.) / buffer zones where applicable to minimise light spill and luminaire visibility. Being particularly relevant to the Site perimeter ecology areas the Silver Brook diversion and proximity viewpoints.

1 Introduction

The intent for this Lighting Assessment is to provide a quantified assessment of potential obtrusive light impact to confirmed sensitive receptor locations in relation to published guidance limiting thresholds, policy and specialist discipline recommendation.

Where applicable, this will outline the requirements of mitigation measures (over standard embedded measures) to be implemented at design and operational stages in order to reduce or remove this potential impact.

The potential impacts of obtrusive light are categorised as follows:

- Light Trespass: The spilling of light beyond the boundary of a property which may cause nuisance to others - Horizontal (ground level) and Vertical (residential windows and ecology zones);
- Glare: The uncomfortable brightness of the light source against a dark background which results in dazzling the observer, which may cause nuisance to residents and a hazard to road users;
- Direct Sky Glow: The direct upwards spill of light into the sky which can cause a glowing effect and is often seen above cities when viewed from a dark area.

It is intended that this Lighting Assessment supports the forthcoming planning application.

Note: The Assessment and Parameters currently exclude future lighting alterations and additions to the motorway, slip roads, roundabout and primary access routes.

2 Relevant Policy and Guidance

Legislation

Clean Neighbourhoods and Environment Act (CNEA) 2005 [1]

The Clean Neighbourhoods and Environment Act (CNEA) 2005 gives Local Authorities additional powers to deal with artificial lighting by classifying artificial light emitted from defined premises as a statutory nuisance (from April 2006). Guidance produced on Sections 101 to 103 of the CNEA extends the duty on local authorities to ensure their areas are checked periodically for existing and potential sources of statutory nuisances including nuisances arising from artificial lighting. Local authorities must take reasonable steps to investigate complaints of such nuisances from artificial light.

Empowerment to Light Roads - The Highways Act 1980 [2]

Section 97 empowers a Highway Authority to provide lighting for any highway or proposed highway for which they are or will be the Highway Authority. District Councils and many Parish or Town Councils also have the power to provide lighting as local lighting authorities

National Planning Policy

The National Planning Policy Framework 2019 [3]

The National Planning Policy Framework (NPPF) encourages good design with planning policies and decisions limiting the effect of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

National Planning Practice Guidance – Light pollution [4]

The National Planning Practice Guidance (NPPG) advises on how to consider light within the planning system, specifically focusing on:

- When light pollution is relevant to planning;
- What factors should be considered when assessing whether a development proposal might have implications for light pollution;
- What factors are relevant when considering where, when and how much light shines;
- What factors are relevant when considering possible ecological effect.

Regional Planning Policy

Warrington Borough Council – Local Plan Core Strategy – Adopted July 2014 [5]

This policy report (Section 10, Policy QE 6) notes that the Council, in consultation with other Agencies, will only support development which would not lead to an adverse impact on the environment or amenity of future occupiers or those currently occupying adjoining or nearby properties, or does not have an unacceptable impact on the surrounding area. The Council will take into consideration the following:

- Levels of light pollution and impacts on the night sky.

Policy MP 5 also states that proposals should demonstrate that they would not have an adverse impact in terms of;

- Unacceptable problems of noise, vibration, lighting, emissions, or other pollution for neighbouring occupiers.

Warrington Borough Council – Environmental Protection Supplementary Planning Document – Adopted May 2013 [6]

This supplementary planning document sets out in detail, the Council's approach to dealing with Environmental Protection issues, including lighting pollution, and identifies associated impacts that could affect public health and wellbeing.

Under Section 5 – Light Pollution, the document states that by establishing the objectives of any lighting scheme and agreeing guidelines a compromise can be met to reduce the impact of any scheme and potentially save energy and expense to the Applicant/Developer.

The Council would advise prospective Developers/Applicants to check with the LPA before installing any lighting scheme. Developers/Applicants are encouraged to submit details of lighting schemes (nature and extent), including light scatter diagrams, as part of the planning application in order to demonstrate that the proposed scheme is appropriate in terms of its purpose and setting. In so doing, the LPA aims to minimise potential pollution from glare and spillage to neighbouring properties, roads and rural areas. It may be necessary to condition a planning approval to allow the LPA to monitor the development and enforce the condition if necessary, this is discussed in Section 5.3.3.

To achieve the necessary minimisation of obtrusive light the Applicant/Developer should adhere to the general principles taken from the Institute of Lighting Professionals, Guidance Notes for the Reduction of Obtrusive Light, GN01: 2011.

Obtrusive Light and Design Guidance

Institute of Lighting Professionals – Guidance Notes for the Reduction of Obtrusive Light GN01:2011 [7]

This Guidance provides measurable design guidance limits and recommendations to ascertain acceptability of obtrusive light levels at night.

CIE – 150:2017 - Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations [8]

The purpose of this Guide is to help formulate guidelines for assessing the environmental effects of outdoor lighting and to give recommended limits for relevant lighting parameters to contain the obtrusive effects of outdoor lighting within tolerable levels. As the obtrusive effects of outdoor lighting are best controlled initially by appropriate design, the guidance given is primarily applicable to new installations; however, some advice is also provided on remedial measures which may be taken for existing installations. This Guide refers to the potentially adverse effects of outdoor lighting on both natural and man-made environments for people in most aspects of daily life, from residents, sightseers, transport users to environmentalists and astronomers.

CIE 126 (1997) Guidelines for Minimising Sky Glow [9]

This Guide gives general guidance for lighting designers and also policy makers about the ways the interference by light of astronomical observations can be reduced or even avoided. The report gives guidance for the design of lighting installations and lighting equipment. Practical implementation of the general guidance is left to National Regulations.

CIE Technical Report Document 129 - 1998 Guide for lighting exterior work areas [10]

The purpose of this Guide is to provide guidance for the design of lighting for exterior work areas. The objectives of lighting for exterior work areas are to ensure:

- Efficient working conditions;
- Safe movement and traffic; and
- Safety and security of people and property.

BS5489-1: 2013 – Code of practice for the design of road lighting – Part 1: Lighting of roads and public amenity area [11]

This part of BS 5489 gives recommendations on the general principles of road lighting, and its aesthetic and technical aspects, and advises on operation and maintenance.

BS EN 13201-2: 2015 – Road lighting – Part 2: Performance requirements [12]

This part of this European Standard defines, according to photometric requirements, lighting classes for road lighting aiming at the visual needs of road users, and it considers environmental aspects of road lighting.

BS EN 12464-2: 2014 – Lighting of Work Places – Part 2: Outdoor Work Places [13]

This European standard specifies lighting requirements for outdoor work places, which meet the needs for visual comfort and performance. All usual visual tasks are considered.

Campaign to Protect Rural England (CPRE) – Night Blight 2016 [14]

CPRE – Night Blight data (2016) gives a broad-brush indication of upwards light (sky glow) experienced within the UK. The interactive mapping tool allows specific areas and locations to be assessed with regards to a baseline condition.

Bats and Lighting Guidance

BCT / ILP – Guidance Note 08/18 – Bats and Artificial Lighting in the UK [15]

This document is aimed at lighting professionals, lighting designers, planning officers, developers, bat workers/ecologists and anyone specifying lighting. It is intended to raise awareness of the impacts of artificial lighting on bats, and mitigation is suggested for various scenarios.

3 Baseline Conditions

The Proposed Site is located near Birchwood, between Culcheth and the M62 Motorway within Cheshire. The landscape setting of the Site is characterised by an extensive unlit patchwork of mixed agriculture and farmed landscape to the North & East, with an industrial park to the South West and motorway areas to the South (both of which are artificially illuminated).

Within the Site boundary, the environment is generally unlit. However, notable light spill from the motorway does encroach on to the southern boundary and associated land area. A study has been undertaken to identify relevant legislation, good practice guidance, local designations and relevant planning policy in relation to lighting following the CIE 126 (1997), Institute of Lighting Professionals – Guidance Notes for the Reduction of Obtrusive Light GN01: 2011 and CIE 150 (2017) guidance.

Appendix 1.0 provides an overview of the measured survey undertaken.

The study area includes sensitive receptors within and outside the boundaries of the Site which are likely to have a direct line of sight towards the Proposed Development and which may therefore be affected during the operational phase. The likelihood of obtrusive light impact (Lux) is subject to distance and can exclude some potential receptor locations. The following provides an overview of the sensitivities included / not included within this assessment.

Sensitive Receptors included within this Assessment:

- **Residential**

There are a number of existing residential locations beyond the perimeter of the Site.

- **Ecology – Light Sensitive**

In terms of ecology, the applicant ecologist has identified a number of potential roosting and flight path areas within the vicinity of the Proposed Site location. Relating to other nocturnal species, no other populations have been identified.

- **Viewpoints**

As part of the LVIA, these are notable landscape locations where the view of the Proposed Development is assessed. In support of this, assessment is given towards potential notable glare from the Proposed Development towards observer positions at these locations.

- **Silver Brook Diversion**

In addition, consideration is given towards the proposed Silver Brook diversion and assessment is made for the likely maximum adverse locations on the proposed brook passage.

- **Dark Sky**

When considering sky glow, as a result of direct upwards light, there is the possibility of a site wide impact being visible from darker environments.

Taken on a regional scale, existing saturated sky glow is notable from bordering major urban development associated with nearby locations (e.g. Birchwood, Birchwood Park (Industrial), Culcheth, Warrington, Manchester, and the M62 Motorway).

On a local scale, sky glow is visible and is comparable to that received on the regional scale.

Sensitive Receptors excluded from this Assessment

- **Lit and Unlit Highway**

With respect to the nature of the Site, embedded mitigation (flat glass, controlled glare, minimal mounting height and tilt etc.) and the expected luminaire types predominately being highway and associated area lighting (inherent glare control) based on professional judgement disability glare is not considered to present any significant impact and is therefore excluded from the future assessment.

- **Landscape**

Due to distance and/or landscape topology interference landscape sensitivities are excluded from this assessment.

- **Public Rights of Way**

Relating to obtrusive light and unless ecologically / view point designated, Public Rights of Way are considered to be nil in terms of sensitivity due to limited frequencies and durations of night time human use and activity. As such, are not included as part of the future assessment.

- **Rail**

In terms of the surrounding rail, the Liverpool to Glazebrook (Cheshire Lines Cmte) rail track runs approximately 1.65km to the South of the Proposed Development. Due to distance, it is unlikely that obtrusive light will be the cause of any significance and it therefore excluded from this assessment.

- **Heritage**

There are a small number of Grade 2 listed buildings located approximately 1.25 – 2 km from the Site. Due to distance from the Proposed Development the potential for obtrusive light trespass and luminaire source visibility (based on embedded mitigation) is considered to be nil and an increase in obtrusive light condition is unlikely. As such, these locations are not considered further within this assessment.

- **Other Locations**

Due to the expected type and nature of light effect, in relation to the likely activities and periods of occupation existing commercial, industrial and employment developments are considered to have a nil sensitivity and are therefore excluded from this assessment.

Environmental Zone Classification

Assessment of the designation, use, habitat and external lighting condition dictates the classification of Environmental Zones across the Site and surrounding areas. The Environmental Zones relate to limiting guidance published by the Institute of Lighting Professionals ILP for obtrusive light (residential and highway) - ILP Guidance Notes for the Reduction of Obtrusive Light (2011).

Due to the type of sensitive receptors, although not wholly applicable, the Environmental Zone classification provides a context towards the assessment.

Due to the presence of local skyglow, existing artificial urban and highway lighting bordering the Proposed Development, it is considered that this area is typical of an E2 / partial E3 zone. However, due to the rural nature of the location and areas of natural conditions, on a precautionary approach the thresholds are based on E2 Zone classification (Low district brightness).

The ILP guideline values for the Environmental Zones are outlined in **Table 3.1.**

Table 3.1: ILP Guidance Notes for the Reduction of Obtrusive Light (2011)

Environmental Zone	Sky Glow ULR (Max %) (1)	Light into Windows EV (2)		Source Intensity I (cd) (3)		Building Luminance (4) L (cd/m²) Ave. Before Curfew
		Pre Curfew	Post Curfew	Pre Curfew	Post Curfew	
E0	0	0	0	0	0	0
E1	0	2	0 (1*)	2500	0	0
E2	**2.5**	**5**	**1**	**7500**	**500**	**5**
E3	5	10	2	10000	1000	10
E4	15	25	5	25000	2500	25

Where:

ULR (Upward Waste Light Ratio) = Maximum permitted percentage of luminaire flux that goes directly into the sky.

EV = Vertical Illuminance in Lux - measured flat on the glazing at the centre of the window.

I = Light intensity in Candelas

L = Luminance cd/m2

Curfew = The time after which stricter requirements (for the control of obtrusive light) will apply.

* Permitted only from Public road lighting installations

1 - Upward Light Ratio – Some lighting schemes will require the deliberate and careful use of upward light, e.g. ground recessed luminaires, ground mounted floodlights, festive lighting, to which these limits cannot apply. However, care should always be taken to minimise any upward waste light by the proper application of suitably directional luminaires and light controlling attachments.

2 - Light Intrusion (into Windows) – These values are suggested maxima and need to take account of existing light intrusion at the point of measurement. In the case of road lighting on public highways where building facades are adjacent to the lit highway, these levels may not be obtainable. In such cases where a specific complaint has been received, the Highway Authority should endeavour to reduce the light intrusion into the window down to the post curfew value by fitting a shield, replacing the luminaire, or by varying the lighting level.

3 - Luminaire Intensity – This applies to each luminaire in the potentially obtrusive direction, outside the area being lit. The figures given are for general guidance only and for some sports lighting applications with limited mounting heights, may be difficult to achieve.

4 - Building Luminance – This should be limited to avoid over lighting and related to the general district brightness. In this reference building luminance is applicable to buildings directly illuminated as a night-time feature as against the illumination of a building caused by spill light from adjacent luminaires or luminaires fixed to the building but used to light an adjacent area.

4 External Lighting Parameters and Mitigation

Appendix 2.0 provides an overview of the lighting parameters that have been used within this assessment.

With respect to constraints and internal site allocation, lighting shall only be included where essential to the safe night use of the Proposed Development. This includes activities in relation to development access / internal roadways and activities in relation to the Proposed Development. All other areas, which are currently unlit, will remain as being unlit in the interests of maintaining the current baseline condition to identified local constraints.

With respect to the lighting parameters the following good practice embedded measures are to be included, which are intended as being the base principals for the future light developments of the Site:

- Wherever possible, ensuring the use of controlled light distribution, optimised optics (flat glass - controlled light distribution below the horizontal) minimal inclination and considered luminaire positioning / minimal heights are employed;
- Where possible, modern LED luminaires should be employed throughout the site to minimise the obtrusive light spill footprint and be as energy efficient as possible;
- Where feasible, all luminaires used around the perimeter of the site should be mounted within the Site, so that the main photometric distribution of the luminaire will be towards the task area, keeping all light within the boundary of the development and preventing artificial light spilling outside of this;
- Wherever possible, adopting a light quality that minimises disruption to existing ecological systems in the form of 'LED' light sources (<2700K and >550 nm) which emit minimal UV and blue light.

The following mitigation measures will be considered and, where appropriate, shall be incorporated into the detailed lighting design / installation:

- Where practical, adopting an appropriate control strategy for the operational lighting so that, when not required and subject to Health and Safety assessment and site security requirements, non-essential lighting is switched off (occupancy sensing) at a pre-determined time in order to further reduce the effect.
- Where feasible, all luminaires used around the perimeter of the site should be mounted within the Site, so that the main photometric distribution of the luminaire will be towards the task area, keeping all light within the boundary of the development and preventing artificial light spilling outside of this;
- Wherever possible, consideration should be given to the need for lighting in areas where ecology habitat crosses or is situated directly adjacent to. Should H&S require artificial lighting to these areas all luminaires should be directed away from the habitat area;

- Wherever possible and subject to landscape design, the retention of trees to the Site perimeter;

- Wherever possible and subject to landscape design, the implementation of new / supplementary dense natural screening (treelines, foliage etc.) / buffer zones where applicable to minimise light spill and luminaire visibility;

- Where applicable, and not integral to the luminaire type, additional glare controlling louvres and light shields to be applied post installation.

5 Scope and Methodology of Assessment

Impact Assessment

The calculated impact from the new lighting proposals (all operational) is modelled quantitively and, where applicable to existing baseline measurements, a cumulative impact is provided.

With respect to relative sensitivities the following methodology applies:

- **Residential**

In terms of common locations, orientation and aspects relating to the Proposed Development, individual residential premises are grouped into representative receptor zones.

For occupied residential receptors the lighting assessment to the vertical plane (window locations) has followed the methodology outlined in CIE 126 (1997) and CIE 150 (2017) guidance.

Similarly, obtrusive light effects are also related to glare (luminaire source intensity) from the observer location.

The criteria used to assess the effects of the proposed lighting are derived from CIE 150 (2003), with consideration also given to the Institute of Lighting Professionals – Guidance Notes for the Reduction of Obtrusive Light GN01: 2011.

- **Ecology – Light Sensitive**

The applicant ecologist has advised the bat commuting, foraging and potential roost locations to be surveyed and the relative light effect calculation measurement criteria and heights to support the ecological light effect assessment provided within Ecology and Nature Conservation Chapter.

Currently there is a lack of evidence regarding the light levels below which there are no/reduced effects on bats. Responses of bats to light levels are likely to vary between species and between behaviours. A “light threshold” below which there is little effect on bats may not exist for some species which may be light averse regardless of intensity.

Therefore, light levels at the site are considered in the context of the lux data recorded during pre-development lighting and bat surveys. Where possible post-development light levels should be as close to the light levels recorded at key areas of bat use on the site pre-development.

In support of the Ecology assessment, relative to species, obtrusive light effects are provided on the peak horizontal and vertical effect condition for representative heights (vertical being the more relevant indicator and maximum adverse effect to bat flight) for ecology zones. Where a potential significant effect is possible, tabulated baseline, effect and resultant values are provided for locations on the centre line of the respective ecology zone.

- **Silver Brook Diversion**

Consideration is given towards the proposed Silver Brook diversion and assessment of the resultant horizontal and vertical impact is undertaken at the maximum adverse locations noted along the proposed brook passage.

- **Landscape Viewpoints**

In respect to viewpoint locations, other than visual appearance (at night), the primary adverse effect would be relating to glare (luminaire source intensity) received at the observer location. The criteria used to assess the effects of the proposed lighting are derived from CIE 150 (2003), with consideration also given to the Institute of Lighting Professionals – Guidance Notes for the Reduction of Obtrusive Light GN01: 2011.

The baseline data presents observed conditions at the relevant landscape viewpoints and supports the assessment of the night-time appearance presented within the LVIA chapter (supplemented by the content within **Appendix 1.0 – Baseline** and **Appendix 2.0 – External Lighting Parameters**).

- **Dark Sky**

When considering direct sky glow, as a result of direct upwards light, there is the possibility of a site wide effect being visible from darker environments. Direct Sky Glow cannot be measured. The baseline is professionally judged relative to visual baseline survey conditions and published CPRE – Night Blight data.

The ILP Guidance Notes for the Reduction of Obtrusive Light (2011) provides limiting sky glow percentages relative to the Environmental Zone. This is assessed on a Site wide basis relative to the overarching Environmental Zone classification for intended and existing artificially lit areas.

Assumptions / Limitations

External Operational Lighting Parameters have been be prepared for the purposes of this assessment, refer to **Appendix 2.0.**

For the purposes of demonstrating a robust assessment, the following standard industry precautionary measures are applied to the assessment calculation:

- Assessment is usually provided for a pre and post curfew condition. Where curfew is defined as being the time at which non-essential lighting is turned off (subject to Health and Safety approval). However, due to the Proposed Development being 24-hour operation the assessment is based on full lighting being operational at all times;

- A unity maintenance factor of 1.0 is applied to represent the maximum adverse condition from initial installation (maximum light output not including for light losses through light source degradation and dirt accumulation);

- As per standard industry practice and for the demonstration of maximum effects existing and proposed landscape bunding and planting / trees are not been included within the assessment calculations.

Reflective Properties of Illuminated Surfaces

Guidance is expressed in terms of the direct illuminance component. However, where the surface is relatively light in colour and typically >30% the reflected light component should be taken into account. In the case of this assessment it is assumed that the typical landscape reflectance value is <30% and will not provide significant contribution, by reflection, to the illuminance at the measured point.

6 Assessment

The following provides an obtrusive light assessment, in tandem with the Planning Application, which gives assessment of the exterior operational lighting impact on the surrounding environment.

The intention of the assessment is to convey how the Proposed Development will fit into the existing Illumination profile of the area and how that will comply with relevant legislation requirements and best practise Design Guidance.

Note:

The baseline survey values include for contributary effects from lighting scheduled due for replacement (roundabout and access road).

Due to the future proposals for replacement lighting to the roundabout, through simulation, the current contributary effect from the exsiting lighting has been excluded for the purposes of establishing the future resultant effect.

Therefore, the tabulated future resultant effect comprises of the following contributary elements:

1 – Proposed lighting within the MSA Site

2 – Proposed replacement lighting to the roundabout

3 – Existing and retained lighting to the motorway and slip roads

Overview

Alongside baseline data provided within **Appendix 1.0,** the illustrated horizontal illuminance effect contours within **Figure 4.1** (proposed development only) are provided to inform the application.

Obtrusive Light Effects to Sensitive Receptors

- **Residential**

The data represented in **Tables 4.1 and 4.2** is relevant to identified **Residential Locations** where vertical illuminance to windows (as opposed to horizontal illuminance) and luminaire source intensity (glare) are the recognised key indicators.

- **Ecology – Light Sensitive**

The data represented in **Tables 4.3 and 4.4** is relevant to identified **Ecology – Light Sensitive** where, with reference to the baseline and a resultant value, assessment is provided on the peak horizontal and vertical effect condition for representative ecology zones.

In respect to species, these are assessed within the corresponding Ecology Chapter.

- **Silver Brook Diversion and Landscape View Points**

Table 4.5 provides the effects for horizontal and vertical light trespass to principally affected locations of the Silver Brook Diversion.

In respect to Landscape Viewpoints, these are assessed in terms of glare (luminous source intensity) to the observer location (**Table 4.6**) and within the corresponding LVIA Chapter.

- **Dark Sky**

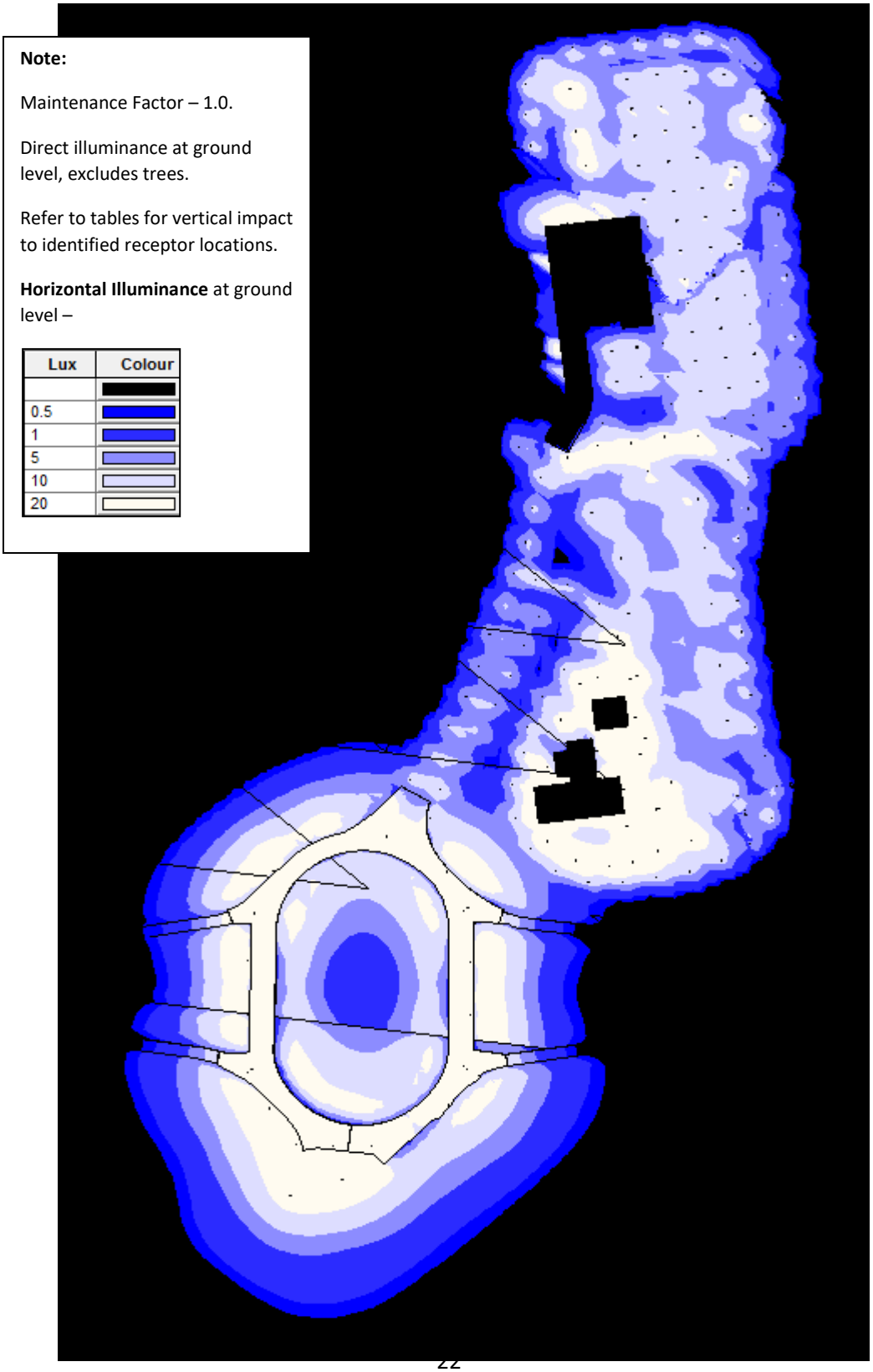
Direct Sky glow is assessed as a Site Wide effect and is based on a scenario where the most onerous of lighting impact is applied relative to the potential uses within each area. In accordance with CIE 150 Section 5.5.2 the Upward Direct Light Ratio is calculated and referenced against ILP sky glow guidance.

Figure 4.2 illustrates the horizontal illuminance levels (Edown) at 1.0m below the lowest luminaire within the Application Site. **Figure 4.3** illustrates the horizontal illuminance levels (Eup) at 1.0m above the highest luminaire.

The data represented in **Table 4.7** is relevant to identified **Direct Sky Glow** where the calculated direct sky glow is assessed as the key indicator.

Overview

Figure 4.1: Graphical representation of horizontal obtrusive illuminance (from the Proposed Development)



Residential

Table 4.1: Vertical Illuminance (Lux)

Note:

The peak vertical illuminance to the window locations of residential premises for an E2 zone is 1 Lux post curfew (ILP Guidance Notes 2011).

Residential	Vertical Illuminance (Lux) at time of Baseline Survey	Future Baseline - Simulated vertical illuminance EXCLUDING lighting scheduled as being subject to replacement (Lux) (1.5m AFL)	Calculated Max. Vertical Illuminance (Lux), the sum of: – Proposed lighting within the MSA Site; – Proposed replacement lighting to the roundabout; – Existing and retained lighting to the motorway and slip roads.	Resultant Calculated Max. Vertical Illuminance (Lux) (maximum value to elevation)
R01 – Birchwood Residential Area - Rear Aspect to South of Site (Rockingham Close)	0.06	0.06	0	**0.06**
R02 – Moss C&G Farm (School Lane)	0.06	0.06	0	**0.06**
R03 – Birchwood Residential Area - Rear Aspect to South of Site (Hamsterley Close)	0.06	0.06	0	**0.06**
R04 – Birchwood Residential Area - Rear Aspect to South of Site (Inglewood Close)	0.06	0.06	0.09	**0.15**
R05 – Wareing H & Son Farm	0.06	0.06	0	**0.06**
R06 – Culcheth Residential Area - Rear Aspect to North West of Site (Severn Road)	0.06	0.06	0	**0.06**
R07 – Ratcliffe House Farm	0.06	0.06	0	**0.06**
R08 – Private House on B5212	0.06	0.06	0	**0.06**

R09 – Hanging Birch Farm	0.07	0.07	0	**0.07**
R10 – Franks Farm	0.06	0.06	0	**0.06**
R11 – Mole Hill Farm	0.06	0.06	0	**0.06**

Table 4.2: Peak Source Intensity (Glare)

Residential	**Source Intensity Max. (ILP Guidance Notes 2011) (cd)** **Post Curfew**	**Calculated Max. Peak Viewed Source Intensity (cd)**
R01 – Birchwood Residential Area - Rear Aspect to South of Site (Rockingham Close)	500	**26**
R02 – Moss C&G Farm (School Lane)	500	**22**
R03 – Birchwood Residential Area - Rear Aspect to South of Site (Hamsterley Close)	500	**29**
R04 – Birchwood Residential Area - Rear Aspect to South of Site (Inglewood Close)	500	**584 (as a result of new Roundabout Lighting)**
R05 – Wareing H & Son Farm	500	**11**
R06 – Culcheth Residential Area - Rear Aspect to North West of Site (Severn Road)	500	**14**
R07 – Ratcliffe House Farm	500	**62**
R08 – Private House on B5212	500	**71**

R09 – Hanging Birch Farm	500	**73**
R10 – Franks Farm	500	**78**
R11 – Mole Hill Farm	500	**17**

Note:

Adversely Affected Receptors

Text denotes noticeable increase in obtrusive light due to the Development Proposals

Text denotes noticeable existing baseline condition exceeding natural conditions

Text denotes noticeable existing baseline condition and a noticeable increase in obtrusive light due to the Development Proposals

Ecology – Light Sensitive

Table 4.3: Horizontal Illuminance (Lux) @ Ground Level

Ecology	1) Horizontal Illuminance (Lux) at time of Baseline Survey	2) Amended Baseline - Simulated horizontal illuminance EXCLUDING lighting scheduled as being subject to replacement (Lux)	Calculated Max. Horizontal Illuminance (Lux), the sum of: – Proposed lighting within the MSA Site – Proposed replacement lighting to the roundabout – Existing and retained lighting to the motorway and slip roads	Resultant Max. Horizontal Illuminance (Lux)
E01 – Bat Foraging & Commuting - North West Site Area	0.06	0.06	18.28	**18.34**
E02 – Bat Foraging & Commuting - North West Site Area	0.06	0.06	6.04	**6.10**
E03 – Bat Foraging & Commuting – West Site Area	0.06	0.06	0.43	**0.49**
E04 – Bat Foraging & Commuting – West Site Area	0.06	0.06	18.92	**18.98**
E05 – Bat Foraging & Commuting - South Site Area	0.12	0.06	35	**35.06**
E06 – Bat Foraging & Commuting - South Site Area	1.95	1.95	10.3	**12.25**
E07 – Bat Foraging & Commuting - South Site Area	1.95	1.42	0.58	**2.00**
E08 – Bat Foraging & Commuting - South Site Area	1.93	1.93	0.06	**1.99**
E09 – Bat Foraging & Commuting - South Site Area	1.97	1.97	0.01	**1.98**
E10 – Bat Foraging & Commuting - South East Site Area	2.71	2.71	0	**2.71**
E11 – Bat Foraging & Commuting - South East Site Area	0.08	0.08	0	**0.08**
E12 – Bat Foraging & Commuting - East Site Area	0.06	0.06	0	**0.06**

E13 – Bat Foraging & Commuting - East Site Area	0.06	0.06	0	**0.06**
E14 – Bat Foraging & Commuting – North East Site Area	0.06	0.06	0	**0.06**
E15 – Bat Foraging & Commuting – North East Site Area	0.06	0.06	0.04	**0.1**
E16 – Bat Foraging & Commuting – South West Site Area	0.06	0.06	16.51	**16.57**
E17 – Bat Foraging & Commuting – South West Site Area	2.71	0.06	31.4	**31.46**
E18 – Bat Foraging & Commuting – South West Site Area	0.08	0.07	0.45	**0.52**
E19 – Bat Foraging & Commuting – South West Site Area	0.06	0.06	3.93	**3.99**
E20 – Bat Foraging & Commuting – North Site Area	0.06	0.06	0.01	**0.07**

Note:

Adversely Affected Receptors

Text denotes noticeable increase in obtrusive light due to the Development Proposals

Text denotes noticeable existing baseline condition exceeding natural conditions

Text denotes noticeable existing baseline condition and a noticeable increase in obtrusive light due to the Development Proposals

Table 4.4: MOST RELEVANT FOR BAT FLIGHT - Vertical Illuminance (Lux) @ 2.0m, 5.0m, 10.0m High

Ecology	**1) Vertical Illuminance (Lux) at time of Baseline Survey** **2) Amended Baseline -Simulated vertical illuminance EXCLUDING lighting scheduled as being subject to replacement (Lux)**						**Calculated Max. Vertical Illuminance (Lux), the sum of:** 1 – Proposed lighting within the MSA Site 2 – Proposed replacement lighting to the roundabout 3 – Existing and retained lighting to the motorway and slip roads			**Resultant Vertical Illuminance (Lux)**		
	2m high		5m high		10m high		2m high	5m high	10 m high	**2m high**	**5m high**	**10m high**
	1	2	1	2	1	2						
E01 – Bat Foraging & Commuting - North West Site Area	0.06	0.06	0.06	0.06	0.06	0.06	0.31	0.01	0	**0.37**	**0.07**	**0.06**
E02 – Bat Foraging & Commuting - North West Site Area	0.06	0.06	0.06	0.06	0.06	0.06	0.01	0	0	**0.07**	**0.06**	**0.06**
E03 – Bat Foraging & Commuting – West Site Area	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.01	0	**0.13**	**0.07**	**0.06**
E04 – Bat Foraging & Commuting – South West Site Area	0.09	0.09	0.06	0.06	0.06	0.06	2.35	0.12	0	**2.44**	**0.18**	**0.06**
E05 – Bat Foraging & Commuting - South West Site Area	0.22	0.22	0.13	0.13	0.06	0.06	0.07	0	0	**0.29**	**0.13**	**0.06**
E06 – Bat Foraging & Commuting - South Site Area	3.13	3.13	1.89	1.89	0.06	0.06	6.29	7.04	1.6	**9.42**	**8.93**	**2.2**
E07 – Bat Foraging & Commuting - South Site Area	3.13	3.11	1.89	1.87	0.06	0.06	0.17	0.09	0.02	**3.28**	**1.96**	**0.08**
E08 – Bat Foraging & Commuting - South Site Area	3.1	3.1	1.86	1.86	0.06	0.06	0.14	0.03	0	**3.24**	**1.89**	**0.06**
E09 – Bat Foraging & Commuting - South Site Area	3.12	3.12	1.87	1.87	0.06	0.06	0.02	0.01	0	**3.14**	**1.88**	**0.06**
E10 – Bat Foraging & Commuting - South Site Area	3.87	3.87	2.32	2.32	0.06	0.06	0.01	0	0	**3.88**	**2.32**	**0.06**
E11 – Bat Foraging & Commuting - South East Site Area	0.13	0.12	0.08	0.07	0.06	0.06	0.03	0.02	0.01	**0.15**	**0.09**	**0.07**
E12 – Bat Foraging & Commuting - South East Site Area	0.07	0.07	0.06	0.06	0.06	0.06	0.02	0.01	0.01	**0.09**	**0.07**	**0.07**

E13 – Bat Foraging & Commuting - East Site Area	0.06	0.06	0.06	0.06	0.06	0.06	0.01	0.01	0	**0.07**	**0.07**	**0.06**
E14 – Bat Foraging & Commuting – North East Site Area	0.06	0.06	0.06	0.06	0.06	0.06	0	0	0	**0.06**	**0.06**	**0.06**
E15 – Bat Foraging & Commuting – North East Site Area	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.01	0	**0.13**	**0.07**	**0.06**
E16 – Bat Foraging & Commuting – North Site Area	0.06	0.06	0.06	0.06	0.06	0.06	15.84	21.23	1.50	**15.9**	**21.29**	**1.56**
E17 – Bat Foraging & Commuting – North Site Area	3.87	1.6	2.32	0.06	0.06	0.06	21.71	23.13	12.97	**23.31**	**23.19**	**13.03**
E18 – Bat Foraging & Commuting – North Site Area	0.13	0.12	0.08	0.07	0.06	0.05	0.41	0.17	0.03	**0.53**	**0.24**	**0.08**
E19 – Bat Foraging & Commuting – North Site Area	0.07	0.06	0.06	0.06	0.06	0.06	0.11	0.01	0	**0.17**	**0.07**	**0.06**
E20 – Bat Foraging & Commuting – North Site Area	0.06	0.06	0.06	0.06	0.06	0.06	0.01	0	0	**0.07**	**0.06**	**0.06**

Note:

Adversely Affected Receptors

Text denotes noticeable increase in obtrusive light due to the Development Proposals

Text denotes noticeable existing baseline condition exceeding natural conditions

Text denotes noticeable existing baseline condition and a noticeable increase in obtrusive light due to the Development Proposals

Silver Brook Diversion

Table 4.5: Horizontal and Vertical Illuminance for Proposed Silver Brook Diversion (Lux)

Silver Brook Diverion	Horizontal Illuminance (Lux)			Vertical Illuminance (Lux) @ 1.5m		
	Baseline	Calculated	Resultant	Baseline	Calculated	Resultant
SB01 – Northern Section	0.06	0.49	**0.54**	0.06	0.04	**0.10**
SB02 – Eastern Section	0.06	2.86	**2.92**	0.07	2.08	**2.15**
SB03 – Southern Section	1.42	3.12	**4.54**	2.66	1.53	**4.19**

Note:

Adversely Affected Receptors

Text denotes noticeable increase in obtrusive light due to the Development Proposals

Text denotes noticeable existing baseline condition exceeding natural conditions

Text denotes noticeable existing baseline condition and a noticeable increase in obtrusive light due to the Development Proposals

Table 4.6: Peak Source Intensity (Glare) at Identified Viewpoint Locations

Viewpoint	Source Intensity Max. (ILP Guidance Notes 2011) (cd) Post Curfew	Calculated Max. Peak Viewed Source Intensity (cd)
VP1	500	**74**
VP2	500	**4509 (as a result of new Roundabout Lighting)**
VP3	500	**53**
VP4	500	**66**
VP5	500	**33**
VP6	500	**200**
VP7	500	**19**
VP8	500	**63**
VP9	500	**44**
VP10	500	**70**
VP11	500	**55**
VP12	500	**23**
VP13	500	**688 (as a result of new Roundabout Lighting)**
VP14	500	**352**
VP15	500	**58**
VP16	500	**80**
VP17	500	**75**
VP18	500	**18592 (as a result of new Roundabout Lighting)**
VP19	500	**75**
VP20	500	**14**
VP21	500	**10**

Note:

Adversely Affected Receptors

Text denotes noticeable increase in obtrusive light due to the Development Proposals

Text denotes noticeable existing baseline condition exceeding natural conditions

Text denotes noticeable existing baseline condition and a noticeable increase in obtrusive light due to the Development Proposals

Dark Sky

The upward spill of light into the sky, which can cause a glowing effect and is often seen above cities when viewed from a dark area. Direct Sky glow is assessed as a Site Wide effect and is based on a scenario where the most onerous of lighting effect is applied relative to the potential uses within each area.

The sample area identified reflects the overall Site and provides assessment for all types and variants of luminaire types. In accordance with CIE 150 Section 5.5.2 the Upward Direct Light Ratio is calculated as follows:

The Direct ULR for the installation is calculated from the following equation:

ULR = Eup / (Edown + Eup)

Eup – Resultant average illuminance taken from a grid 1.0m above the highest luminaire

Edown – Resultant average illuminance taken from a grid 1.0m below the highest luminaire

For the purposes of direct skyglow assessment the majority of the Site is currently considered to be representative Environmental Zone classification of an E2: Low district brightness.

In maintaining a no change / improved environment the ILP Guidance Notes for the Reduction of Obtrusive Light (2011) provides a limiting sky glow percentage of 2.5%.

ULR = Eup / (Edown + Eup)

ULR = 0.00/ (6.0 + 0.00)

ULR = 0.0% < 2.5%

Table 4.7: Direct Sky Glow

Dark Sky	**Direct Sky Glow**		
	Existing Condition	**Sky Glow ULR (Max. %) (ILP Guidance Notes 2011) (cd)**	**Calculated Direct Sky Glow %**
SG01	Mid / high sky glow category (typical for an E2/E3 environment	E2 (precautionary) – 2.5%	**0.0**

Figure 4.2: The downwards light element as horizontal illuminance levels 1.0 m below the lowest external luminaire

Direct Illuminance DOWN @1.0m below lowest luminaire = 6 lux (average)

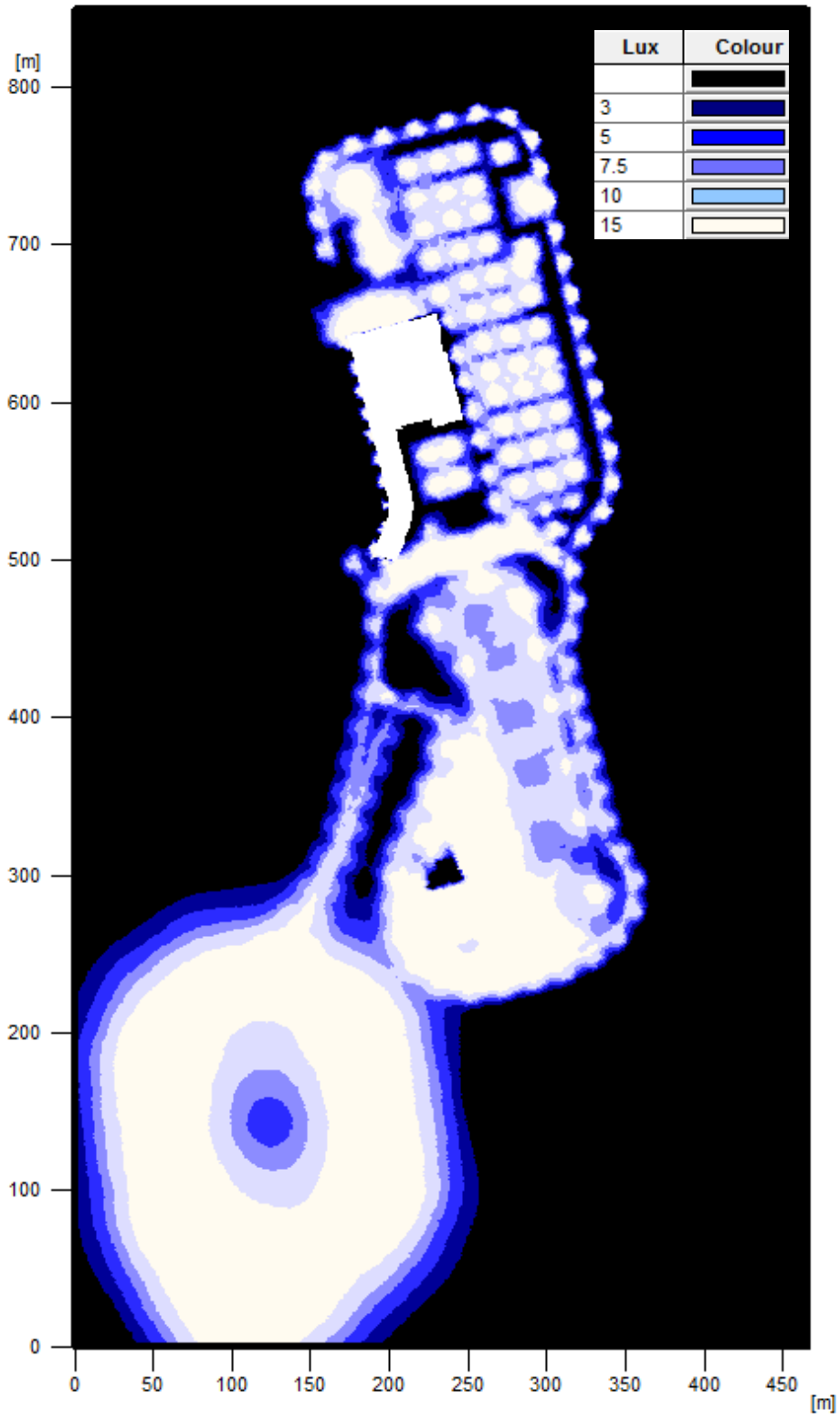
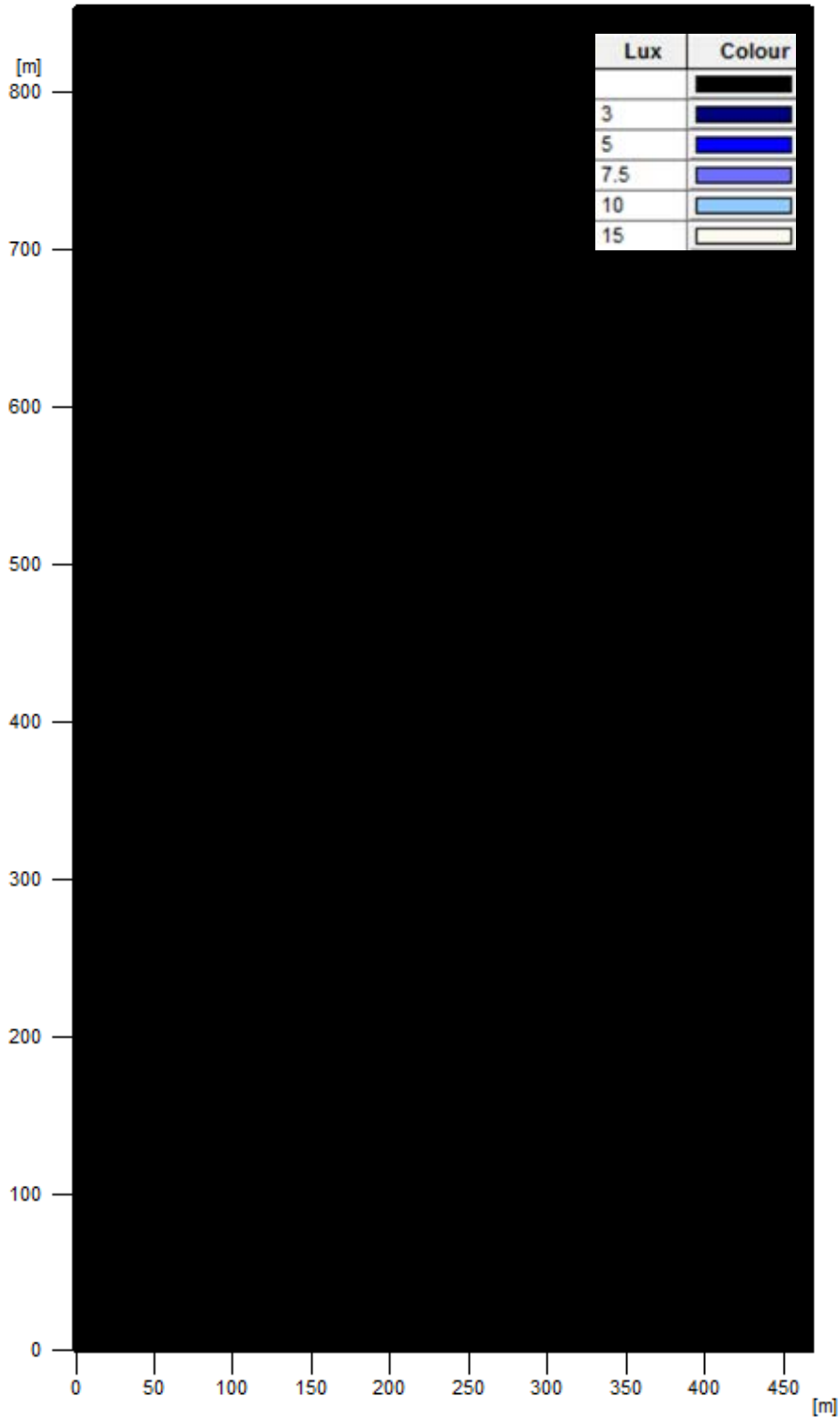


Figure 4.3: The upwards light element as inverted horizontal illuminance levels 1.0 m above the highest external luminaire

Direct Illuminance UP @1.0m below lowest luminaire = 0.00 lux (average)



Appendix 1.0 – Baseline Survey

Introduction

This survey reviews the artificial lighting currently installed on the Application Site area and adjacent surrounding areas. Comment is made regarding the resulting lighting levels found, with regards to current standards and guidelines, where relevant. Ecological receptors are assessed relative to their present lighting conditions to enable a future assessment to be made of the potential impact the proposed development may have. The Moon was not visible in the sky when lighting measurements were taken. The unscreened moonlight condition measured as **0.06 Lux** (Horizontal) and **0.06 Lux** (Vertical).

Light Readings (illuminance levels in Lux) were taken on the evening of 13th February 2019 using a handheld Minolta T-10A illuminance meter. All horizontal lux readings were taken on the ground, all vertical lux readings were taken at arm's length from a standing position; approximately 1.5m above ground.

Study Area

The Site and its sensitive receptors have determined the study area for the light pollution assessment.

The study area includes the areas surrounding / adjacent to the Site and ecology and residential sensitive receptors which may have a direct view towards the future external lighting proposals and which may therefore be affected during the construction and operation of the Proposed Development.

Sensitive Receptors

With input from the project team, the following identifies sensitive receptors which could be at risk of 'effect' from the external lighting of the Proposed Development (**Figure X.1**):

- **R01 to R11 – Residential – Existing Residential Locations**
- **E01 to E20 – Ecological – Existing Bat Foraging and Commuting;**
- **VP1 to VP21 – Landscape Viewpoints**
- **SB01 to SB03 – Silver Brook Diversion**
- **SG01 – Natural – Direct Sky Glow.**

Identification of Sensitive Receptors

Professional judgement and Applicant Team input has advised the following sensitive receptors which could be at risk of 'impact' from the external lighting parameters of the Proposed Development.

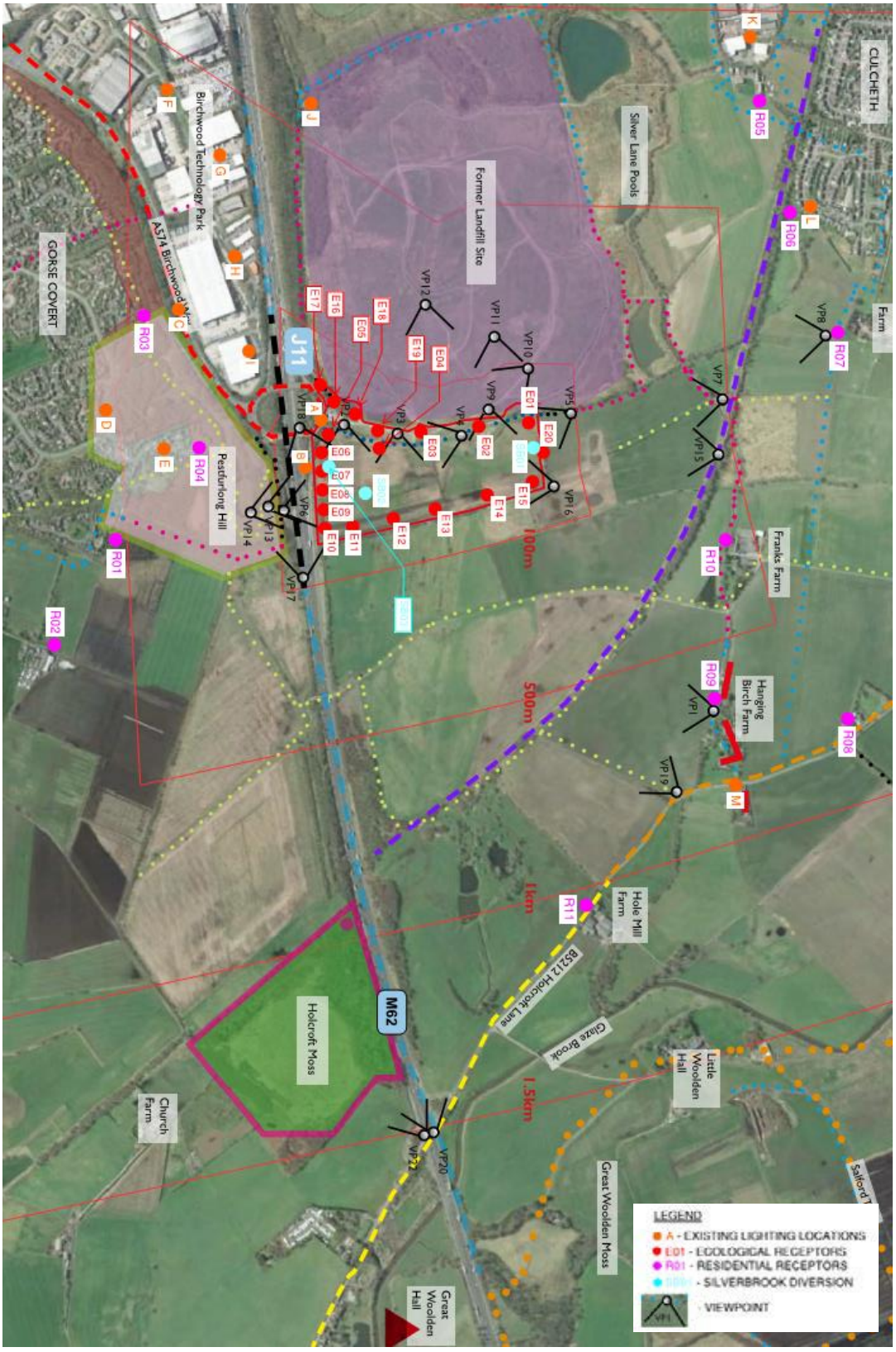
Identified receptors for assessment are listed in **Table X.1** and are illustrated on **Figure X.1** as follows:

Reference	Receptor	Use	Sensitivity	Note	Obtrusive Light Guidance and Assessment
R01 to R11	Existing Residential Locations	Residential	High		ILP Guidance Notes for the Reduction of Obtrusive Light (2011) • Peak Vertical Lux value at window location • Peak Luminous Source Intensity (Glare) received at observer location
E01 to E20	Existing Bat Foraging and Commuting	Ecological	Assessed within ES Chapter – Ecology	Assessed within ES Chapter – Ecology	• Peak Horizontal Lux value at Ground • Peak Vertical Lux value at 2.0m, 5.0m and 10.0m high
SB01 to SB03	Sample locations relating to the Silver Brook diversion	Natural	High		• Peak Horizontal Lux value at Ground • Peak Vertical Lux value at 1.5m high
VP1 to VP21	Landscape View	Natural	Assessed within ES Chapter - Landscape		ILP Guidance Notes for the Reduction of Obtrusive Light (2011). Taken as the environmental zone limit E2. • Peak Luminous Source Intensity (Glare) received at observer location
SG01	Direct Sky Glow	Natural	Moderate		ILP Guidance Notes for the Reduction of Obtrusive Light (2011) • Sky Glow ULR %

Table X.1: Identification and Assessment Parameters of Sensitive Receptors

Figure X.1: Identification of Sensitive Receptor, Existing Lighting, & Viewpoints – Complete Area

Note: Sensitive Receptor SG01 – Direct Sky Glow is not illustrated



Sky Glow

When considering sky glow, as a result upwards light, there is the possibility of a site wide impact being visible from darker environments. Taken on a regional scale, existing saturated sky glow is notable from bordering major urban development associated with nearby locations (e.g. Birchwood, Birchwood Park (Industrial), Culcheth, Warrington, Manchester, and the M62 Motorway)

On a local scale, sky glow is visible and is comparable to that received on the regional scale.

The closest sensitive region (Site of Special Scientific Interest - SSSI) is approximately 1.0km from the Site boundary and any stray upwards light, from the Development Site, is unlikely to exceed or contribute to that already received on a local, regional or national scale.

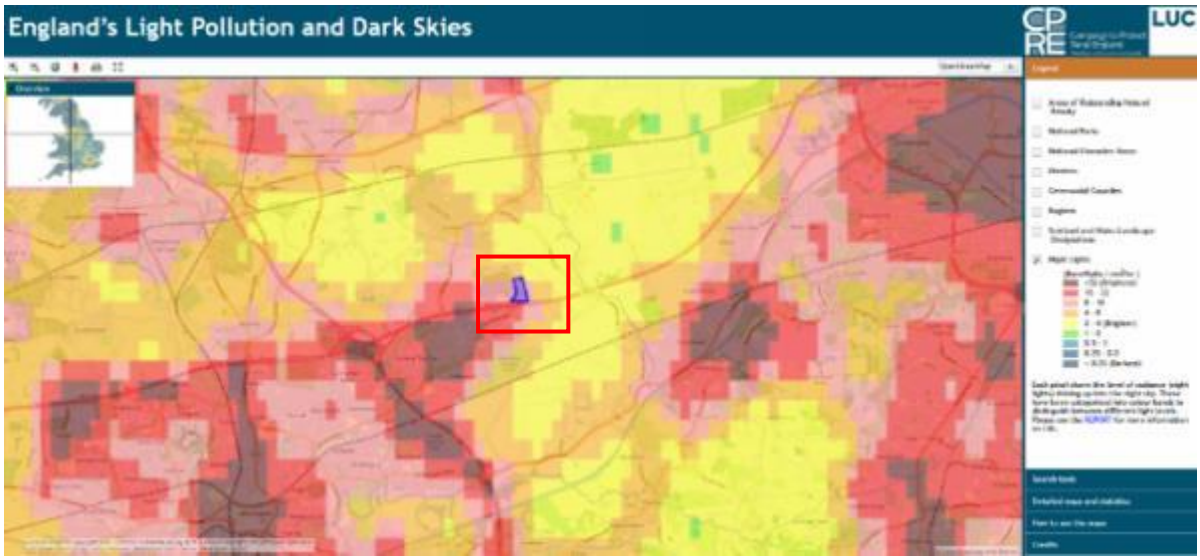


Figure X.2: Night Sky Brightness (Sky Glow), Warrington District

Figure X.2, CPRE – Night Blight within Warrington District gives a broad-brush indication of the upwards light (sky glow) experienced for the year 2016. Satellite measurements range from 0 (being a dark sky) to 255 (being a saturated bright sky at night). It can be seen that the site and surrounding areas experience a mid / high sky glow category (typical for an E2/E3 environment)

It should be noted that the illustration adjacent includes for the reflected sky glow component which is dependent on the reflective properties of the environment.

Reflected sky glow component should be taken into account where landscape surfaces are relatively light in colour and typically >30%. In the case of this assessment, it is assumed that the typical landscape reflectance value is <30% and will not provide significant contribution, by reflection.

As a result, the Sky glow ULR Max. % of the Site is assessed in terms of Direct light component ILP Guidance Notes for the Reduction of Obtrusive Light (2011).

X1.0 - Data Sheet – Existing Lighting

Location	A – Illuminated Motorway Roundabout (M62 J11)
Artificial Lighting	SON Road Lantern (12m columns)
Horizontal Measured Illuminance (Lux @ Ground)	Varies – Up to 23.4 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E3 (Medium district brightness)
Notes:	A number of lighting columns were non-functional at the time of the survey. Resulting in lower light levels than the required maintained illuminance. This resulted in light measurements less than peak at adjacent receptors.

Photograph of Existing Lighting

M62 J11 roundabout illuminated by SON and SOX road lanterns

X1.1 - Data Sheet – Existing Lighting

Location	B – Illuminated Motorway Slip Road (M62 J11)
Artificial Lighting	SON Road Lantern (12m columns)
Horizontal Measured Illuminance (Lux @ Ground)	Not Accessible
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E3 (Medium district brightness)
Notes:	Typical of roadway lighting an amount of glare and light trespass is notable

Photograph of Existing Lighting

M62 J11 slip road illuminated by SON road lanterns

X1.2 - Data Sheet – Existing Lighting

Location	C – Illuminated A-Road (A574 Birchwood Way)
Artificial Lighting	LED Road Lantern (10m columns)
Horizontal Measured Illuminance (Lux @ Ground)	Varies – 17.39 Lux to 26.85 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E3 (Medium district brightness)
Notes:	Civil works being carried out adjacent the existing carriageway as part of Warrington East Phase 3, this will create a dual carriageway from Daten Avenue/Moss Gate Junction to M62 J11. Typical of roadway lighting an amount of glare and light trespass is notable.

Photograph of Existing Lighting

Birchwood Way roadway illuminated by LED road lanterns

X1.3 - Data Sheet – Existing Lighting

Location	D – Illuminated Primary Residential Road (Gorse Covert Road)
Artificial Lighting	LED Road Lantern (8m columns)
Horizontal Measured Illuminance (Lux @ Ground)	Varies – 1.84 Lux to 16.92 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E2 (Low district brightness)
Notes:	Typical of roadway lighting an amount of glare and light trespass is notable.

Photograph of Existing Lighting

Residential roadway illuminated by LED road lanterns

X1.4 - Data Sheet – Existing Lighting

Location	E – Illuminated Primary Residential Road (Inglewood Close)
Artificial Lighting	LED Road Lantern (8m columns)
Horizontal Measured Illuminance (Lux @ Ground)	Varies – 0.95 Lux to 9.55 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E2 (Low district brightness)
Notes:	Typical of roadway lighting an amount of glare and light trespass is notable.

Photograph of Existing Lighting

Residential roadway illuminated by LED road lanterns

X1.5 - Data Sheet – Existing Lighting

Location	F – XPO Logistics
Artificial Lighting	SON Floodlights
Horizontal Measured Illuminance (Lux @ Ground)	Varies – 59.5 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E3 (Medium district brightness)
Notes:	Notable glare and light trespass to the surrounding environment.

Photograph of Existing Lighting

Left - XPO Logistics site entrance, Right - XPO Logistics car park, illuminated by SON Floodlights

X1.6 - Data Sheet – Existing Lighting

Location	G – Farm Foods Distribution Warehouse
Artificial Lighting	LED Floodlights
Horizontal Measured Illuminance (Lux @ Ground)	50 Lux (approximated due to no access)
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E3 (Medium district brightness)
Notes:	Cool white light LED floodlighting causes upwards light spill, light trespass and glare

Photograph of Existing Lighting

Farm Foods service yard illuminated by building mounted LED floodlights

X1.7 - Data Sheet – Existing Lighting

Location	H – Illuminated Industrial Park Road (Leacroft Road)
Artificial Lighting	LED Road Lantern (10m columns)
Horizontal Measured Illuminance (Lux @ Ground)	Varies – 4.35 Lux to 12.55 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E3 (Medium district brightness)
Notes:	Typical of roadway lighting an amount of glare and light trespass is notable.

Photograph of Existing Lighting

Industrial park roadway illuminated by LED road lanterns

X1.8 - Data Sheet – Existing Lighting

Location	I – Topgrade Car Park
Artificial Lighting	LED Floodlights
Horizontal Measured Illuminance (Lux @ Ground)	27.3 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E3 (Medium district brightness)
Notes:	Cool white light LED floodlighting causes upwards light spill, light trespass and glare

Photograph of Existing Lighting

Left – Topgrade Carpark, Right – Distribution Warehouse Adjacent Topgrade

X1.9 - Data Sheet – Existing Lighting

Location	J – BIFFA Facility
Artificial Lighting	Floodlights
Horizontal Measured Illuminance (Lux @ Ground)	Not Accessible
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E2 (Low district brightness)
Notes:	Informed by site manager that site is generally unmanned at night and lighting is PIR activated only once past security gates, therefore assume unlit.

Photograph of Existing Lighting

Aerial phot of Biffa facility adjacent landfill site

X1.10 - Data Sheet – Existing Lighting

Location	K – Taylor Business Park
Artificial Lighting	LED Floodlights
Horizontal Measured Illuminance (Lux @ Ground)	Varies – 23.08 Lux to 88.2 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E3 (Medium district brightness)
Notes:	LED floodlighting causes upwards light spill, light trespass and glare

Photograph of Existing Lighting

Service yard at rear of Taylor business park illuminated by pole and wall mounted LED floodlights

X1.11 - Data Sheet – Existing Lighting

Location	L – Illuminated Residential Road (Severn Road)
Artificial Lighting	LED Road Lantern (8m columns)
Horizontal Measured Illuminance (Lux @ Ground)	Varies – 0.97 Lux to 3.73 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E2 (Low district brightness)
Notes:	Typical of roadway lighting an amount of glare and light trespass is notable.

Photograph of Existing Lighting

Residential roadway illuminated by LED road lanterns

X1.12 - Data Sheet – Existing Lighting

Location	M – Illuminated B-Road Junction (B5212 Holcroft Lane)
Artificial Lighting	Metal Halide Road Lantern (6m columns)
Horizontal Measured Illuminance (Lux @ Ground)	13.53 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	-
Environmental Zone Characteristic	E2 (Low district brightness)
Notes:	Typical of roadway lighting an amount of glare and light trespass is notable.

Photograph of Existing Lighting

Illuminated junction of Holcroft Lane and private road

X2.0 - Data Sheet – Sensitive Receptor

Location	R01 – Birchwood Residential Area - Rear Aspect to South of Site (Rockingham Close)
Use	Residential – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Private lighting in operation at the time of survey. Rear aspect towards proposed site currently shielded by Pestfurlong Hill.

Photograph of Sensitive Receptor

View towards rear of residential houses at location R01.

X2.1 - Data Sheet – Sensitive Receptor

Location	R02 – Moss C&G Farm (School Lane)
Use	Residential – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Rear aspect of farm overlooks unlit fields towards proposed site.

Photograph of Sensitive Receptor

View towards Moss C&G Farm across field at location R02.

X2.2 - Data Sheet – Sensitive Receptor

Location	R03 – Birchwood Residential Area - Rear Aspect to South of Site (Hamsterley Close)
Use	Residential – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Rear aspect towards proposed site currently shielded by Pestfurlong Hill & Birchwood Park.

Photograph of Sensitive Receptor

View towards rear of residential houses at location R03.

X2.3 - Data Sheet – Sensitive Receptor

Location	R04 – Birchwood Residential Area - Rear Aspect to South of Site (Inglewood Close)
Use	Residential – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Private lighting in operation at the time of survey. Rear aspect towards proposed site currently shielded by Pestfurlong Hill.

Photograph of Sensitive Receptor

View towards rear of residential houses at location R04.

X2.4 - Data Sheet – Sensitive Receptor

Location	R05 – Wareing H & Son Farm
Use	Residential – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Some light spill from Taylor Business Park to rear of farm outbuildings. Front aspect of farm overlooks unlit fields towards proposed site but is partly shielded by the existing landfill site.

Photograph of Sensitive Receptor

View towards rear Farm from Taylor Business Park

X2.5 - Data Sheet – Sensitive Receptor

Location	R06 – Culcheth Residential Area - Rear Aspect to North West of Site (Severn Road)
Use	Residential – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Rear aspect towards proposed site currently shielded by disused railway line embankment & treeline.

Photograph of Sensitive Receptor

View towards rear of residential houses at location R06.

X2.6 - Data Sheet – Sensitive Receptor

Location	R07 – Ratcliffe House Farm
Use	Residential – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Rear aspect towards proposed site currently shielded by disused railway line embankment & treeline.

Photograph of Sensitive Receptor

View towards Ratcliffe House Farm from South at location R07.

X2.7 - Data Sheet – Sensitive Receptor

Location	R08 – Private House on B5212
Use	Residential – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Rear aspect towards proposed site currently shielded by disused railway line embankment & treeline.

Photograph of Sensitive Receptor

View towards rear of residential house at location R08.

X2.8 - Data Sheet – Sensitive Receptor

Location	R09 – Hanging Birch Farm
Use	Residential – Light Sensitive
External Lighting Condition	Lit
Horizontal Measured Illuminance (Lux @ Ground)	0.07 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.07 Lux towards site 0.22 Lux towards property
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Private lighting in operation at the time of survey. Rear aspect towards proposed site currently shielded by disused railway line embankment & treeline.

Photograph of Sensitive Receptor

View towards rear of residential house at location R09.

X2.9 - Data Sheet – Sensitive Receptor

Location	R10 – Franks Farm
Use	Residential – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Private lighting in operation at the time of survey. Side aspect towards proposed site currently shielded by disused railway line embankment & treeline.

Photograph of Sensitive Receptor

View towards front (opposite aspect to proposed site) of residential house at location R10.

X2.10 - Data Sheet – Sensitive Receptor

Location	R11 – Mole Hill Farm
Use	Residential – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Private lighting in operation at the time of survey. Front aspect towards proposed site currently shielded by disused railway line embankment& treeline.

Photograph of Sensitive Receptor

View towards front of Mole Hill Farm at location R11.

X2.11 - Data Sheet – Sensitive Receptor

Location	E01 – Bat Foraging & Commuting – North West Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	

Photograph of Sensitive Receptor

View from VP16 towards E01.

X2.12 - Data Sheet – Sensitive Receptor

Location	E02 – Bat Foraging & Commuting – North West Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	

Photograph of Sensitive Receptor

View from VP16 towards E02.

X2.13 - Data Sheet – Sensitive Receptor

Location	E03 – Bat Foraging & Commuting – West Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	

Photograph of Sensitive Receptor

View from VP4 towards E03.

X2.14 - Data Sheet – Sensitive Receptor

Location	E04 – Bat Foraging & Commuting - West Site Area
Use	Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.09 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	

Photograph of Sensitive Receptor

View from VP3 towards E04.

X2.15 - Data Sheet – Sensitive Receptor

Location	E05 – Bat Foraging & Commuting – South West Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Lit – M62 Lighting
Horizontal Measured Illuminance (Lux @ Ground)	0.12 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.22 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	Light spill experienced from Motorway / Roundabout lighting
Notes:	

Photograph of Sensitive Receptor

View from VP3 towards E05.

X2.16 - Data Sheet – Sensitive Receptor

Location	E06 – Bat Foraging & Commuting - South Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Lit – M62 Lighting
Horizontal Measured Illuminance (Lux @ Ground)	1.95 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	3.13 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	Light spill experienced from Motorway / Roundabout lighting
Notes:	

Photograph of Sensitive Receptor

View from E08 towards E06.

X2.17 - Data Sheet – Sensitive Receptor

Location	E07 – Bat Foraging & Commuting - South Site Boundary SB03 – Silver Brook Diversion South
Use	Landscape and Ecology – Light Sensitive
External Lighting Condition	Lit – M62 Lighting
Horizontal Measured Illuminance (Lux @ Ground)	1.95 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	3.13 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	Light spill experienced from Motorway / Roundabout lighting
Notes:	

Photograph of Sensitive Receptor

View from E08 towards E07.

X2.18 - Data Sheet – Sensitive Receptor

Location	E08 – Bat Foraging & Commuting - South Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Lit – M62 Lighting
Horizontal Measured Illuminance (Lux @ Ground)	1.93 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	3.10 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	Light spill experienced from Motorway / Roundabout lighting
Notes:	

Photograph of Sensitive Receptor

Panoramic view from E08 looking North across the proposed site.

X2.19 - Data Sheet – Sensitive Receptor

Location	E09 – Bat Foraging & Commuting - South Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Lit – M62 Lighting
Horizontal Measured Illuminance (Lux @ Ground)	1.97 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	3.12 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	Light spill experienced from Motorway / Roundabout lighting
Notes:	

Photograph of Sensitive Receptor

View from E08 towards E09.

X2.20 - Data Sheet – Sensitive Receptor

Location	E10 – Bat Foraging & Commuting - South East Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Lit – M62 Lighting
Horizontal Measured Illuminance (Lux @ Ground)	2.71 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	3.87 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	Light spill experienced from Motorway / Roundabout lighting
Notes:	

Photograph of Sensitive Receptor

View from E08 towards E010.

X2.21 - Data Sheet – Sensitive Receptor

Location	E11 – Bat Foraging & Commuting - South East Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.08 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.13 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	Light spill experienced from Motorway / Roundabout lighting
Notes:	

Photograph of Sensitive Receptor

View from E08 towards E11.

X2.22 - Data Sheet – Sensitive Receptor

Location	E12 – Bat Foraging & Commuting - East Site Boundary SB02 – Silver Brook Diversion East
Use	Landscape and Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.07 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	

Photograph of Sensitive Receptor

View from E08 towards E12.

X2.23 - Data Sheet – Sensitive Receptor

Location	E13 – Bat Foraging & Commuting - East Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	

Photograph of Sensitive Receptor

View from E08 towards E13.

X2.24 - Data Sheet – Sensitive Receptor

Location	E14 – Bat Foraging & Commuting – North East Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	

Photograph of Sensitive Receptor

View from VP16 towards E14.

X2.25 - Data Sheet – Sensitive Receptor

Location	E15 – Bat Foraging & Commuting - North East Site Boundary
Use	Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	

Photograph of Sensitive Receptor

View from VP16 towards E15.

X2.26 - Data Sheet – Sensitive Receptor

Location	E16 – Bat Foraging & Commuting – South West Site Boundary
Use	Landscape and Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	

Photograph of Sensitive Receptor

X2.27 - Data Sheet – Sensitive Receptor

Location	E17 – Bat Foraging & Commuting - South West Boundary
Use	Landscape and Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	2.71 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	3.87 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	Light spill experienced from Motorway / Roundabout lighting
Notes:	

Photograph of Sensitive Receptor

X2.28 - Data Sheet – Sensitive Receptor

Location	E18 – Bat Foraging & Commuting - South West Site Boundary
Use	Landscape and Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.08 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.13 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	Light spill experienced from Motorway / Roundabout lighting
Notes:	

Photograph of Sensitive Receptor

X2.29 - Data Sheet – Sensitive Receptor

Location	E19 – Bat Foraging & Commuting - West Site Boundary
Use	Landscape and Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.07 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	

Photograph of Sensitive Receptor

X2.30 - Data Sheet – Sensitive Receptor

Location	E20 – Bat Foraging & Commuting - North Site Boundary
Use	Landscape and Ecology – Light Sensitive
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	

Photograph of Sensitive Receptor

View from VP16 towards E20.

X2.31 - Data Sheet – Sensitive Receptor

Location	L01 – Holcroft Moss
Use	Natural - Landscape
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Site was not accessible at the time of the survey as access permit required from Cheshire Wildlife Trust, however it could be seen from distance that the site is unlit, with no lighting on the M62 at this point.

Photograph of Sensitive Receptor

View from VP20 towards Holcroft Moss SSSI.

X3.0 - Data Sheet – Viewpoint

Location	VP1 – Hanging Birch Farm – North East of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.07 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.07 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located at the edge of Hanging Birch Farm looking South West towards the proposed site. The viewpoint area is predominantly open fields bordered by hedges & trees, these extend South West towards the proposed site, but are interrupted by a disused railway line embankment and treeline. The viewpoint was unlit with some light fittings installed on private residences in the immediate area, with noticeable skyglow visible from adjacent urban areas. Provided in support of the LVIA

Photograph of Viewpoint

View from VP1 looking South West towards proposed site

X3.1 - Data Sheet – Viewpoint

Location	VP3 – Western Edge of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.07 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located at the Western edge of the proposed site looking East across the proposed site. The viewpoint area is predominantly open fields, these extend North & East away towards the proposed site. The existing landfill is located to the West directly behind the observer, with the M62 motorway to the South. The viewpoint was unlit with no light fittings in the immediate area (the closest being streetlight columns located on the M62), with very noticeable skyglow visible from adjacent urban areas & the M62 motorway. Provided in support of the LVIA

Photograph of Viewpoint

View from VP3 looking East across proposed site

X3.2 - Data Sheet – Viewpoint

Location	VP4 – Western Edge of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located at the Western edge of the proposed site looking South across the proposed site. The viewpoint area is predominantly open fields, these extend North & East away towards the proposed site. The existing landfill is located to the West directly adjacent the observer, with the M62 motorway to the South. The viewpoint was unlit with no light fittings in the immediate area (the closest being streetlight columns located on the M62), with very noticeable skyglow visible from adjacent urban areas & the M62 motorway. Provided in support of the LVIA

Photograph of Viewpoint

View from VP4 looking South across proposed site

X3.3 - Data Sheet – Viewpoint

Location	VP6 – Silver Lane – South of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	2.14 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	3.89 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located on Silver Lane directly adjacent the M62 motorway, looking North towards the proposed site. The viewpoint area has the M62 motorway to the North, East and West, and Pestfurlong Hill to the South. The viewpoint was unlit with light fittings installed on the M62 in the immediate area, with very noticeable skyglow visible from adjacent urban areas & the M62 motorway. Provided in support of the LVIA

Photograph of Viewpoint

View from VP6 looking North towards the proposed site

X3.4 - Data Sheet – Viewpoint

Location	VP7 – Field Edge Adjacent Disused Railway Line Embankment – North of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located at the edge of a field adjacent the disused railway line, looking South towards the proposed site. The viewpoint area is predominantly open fields to the South and West, with the disused railway line embankment located to the North. The open fields extend South towards the proposed site. The viewpoint was unlit with no light fittings in the immediate area (the closest being streetlight columns located on the M62), with noticeable skyglow visible from adjacent urban areas & the M62 motorway. Provided in support of the LVIA

Photograph of Viewpoint

View from VP7 looking South towards the proposed site

X3.5 - Data Sheet – Viewpoint

Location	VP8 – Ratcliffe House Farm – North of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located adjacent Ratcliffe House Farm, looking South towards the proposed site. The viewpoint area is predominantly open fields to the North, with paddocks to the South, East and West. The disused railway line embankment is located to the South and shields the viewpoint location from the proposed site. The viewpoint was unlit with no light fittings in the immediate area, with noticeable skyglow visible from adjacent urban areas. Provided in support of the LVIA

Photograph of Viewpoint

View from VP8 looking South towards the proposed site

X3.6 - Data Sheet – Viewpoint

Location	VP13 – Pestfurlong Hill (Mid Height) – South of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.10 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.12 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located halfway up Pestfurlong Hill adjacent the M62 motorway, looking North towards the proposed site. The viewpoint area has the M62 motorway to the North, open fields to the East, and Pestfurlong Hill to the South. The viewpoint was unlit with no light fittings in the immediate area (the closest being streetlight columns located on the M62), with very noticeable skyglow visible from adjacent urban areas & the M62 motorway. Provided in support of the LVIA

Photograph of Viewpoint

View from VP13 looking North towards the proposed site

X3.7 - Data Sheet – Viewpoint

Location	VP14 – Pestfurlong Hill (Crest) – South of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.10 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.08 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located at the crest of Pestfurlong Hill adjacent the M62 motorway, looking North towards the proposed site. The viewpoint area has the M62 motorway to the North, open fields to the East, and Pestfurlong Hill & Gorse Covert to the South. The viewpoint was unlit with no light fittings in the immediate area (the closest being streetlight columns located on the M62), with very noticeable skyglow visible from adjacent urban areas & the M62 motorway. Provided in support of the LVIA

Photograph of Viewpoint

View from VP14 looking North towards the proposed site

X3.8 - Data Sheet – Viewpoint

Location	VP16 – Northern Edge of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located at the Northern edge of the proposed site looking South across the proposed site. The viewpoint area is predominantly open fields, these extend North & East away towards the proposed site. The existing landfill is located to the West, with the M62 motorway to the South. The viewpoint was unlit with no light fittings in the immediate area (the closest being streetlight columns located on the M62), with very noticeable skyglow visible from adjacent urban areas & the M62 motorway. Provided in support of the LVIA

Photograph of Viewpoint

View from VP16 looking South across proposed site

X3.9 - Data Sheet – Viewpoint

Location	VP18 – M62 J11 – South of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	4.05 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	5.02 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located at the M62 J11 roundabout to the South of the proposed site, looking East along the M62. The viewpoint area is predominantly open fields to the East intersected by the M62, with the proposed site and existing landfill to the North, Birchwood Park to the West, and Pestfurlong Hill & Gorse Covert to the South. The viewpoint was lit by SON road lanterns mounted on 12m columns, with very noticeable skyglow visible from adjacent urban areas & the M62 motorway. A number of lighting columns were not functioning at the time of the survey. Provided in support of the LVIA

Photograph of Viewpoint

View from VP18 looking East along the M62 Motorway

X3.10 - Data Sheet – Viewpoint

Location	VP20 / 22 – B5212 Bridge Over M62 – East of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located at the B5212 bridge crossing the M62 to the East of the proposed site, looking West along the M62. The viewpoint area is predominantly open fields in all directions, with the M62 motorway intersecting East to West. The viewpoint was unlit with no light fittings in the immediate area, with very noticeable skyglow visible from adjacent urban areas. Provided in support of the LVIA

Photograph of Viewpoint

View from VP18 looking East along the M62 Motorway

X3.11 - Data Sheet – Viewpoint

Location	VP21 – Dam Head Lane Bridge Over Railway Line – East of Proposed Site
Use	Viewpoint
External Lighting Condition	Unlit
Horizontal Measured Illuminance (Lux @ Ground)	0.06 Lux
Vertical Measured Illuminance (Lux @ 1.5m)	0.06 Lux
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	Viewpoint located at the Dam Head Lane bridge crossing the railway line to the South East of the proposed site, looking North West towards the proposed site. The viewpoint area is predominantly open fields in all directions, with the railway line intersecting North East to South West. The viewpoint was unlit with no light fittings in the immediate area, with very noticeable skyglow visible from adjacent urban areas. Provided in support of the LVIA

Photograph of Viewpoint

View from VP21 looking North West towards the proposed site.

X3.12 - Data Sheet – Viewpoint

Location	VP2, VP5, VP9, VP10, VP11, VP12, VP15, VP17, VP19
Use	Viewpoint
External Lighting Condition	-
Horizontal Measured Illuminance (Lux @ Ground)	-
Vertical Measured Illuminance (Lux @ 1.5m)	-
Existing Obtrusive Light Scenario (Receptor Cause)	None
Current Obtrusive Light Impact to Receptor	None
Notes:	On confirmation for the applicant design team, the above viewpoints have been excluded from this baseline survey.

Appendix 2.0 – External Lighting Parameters

Lighting Design Development – Design and Associated Mitigation Measures

The detailed lighting design should consider best practice standards and technology, as appropriate. The external lighting specification(s) and design(s) for the proposed development of the Application Site should be prepared by a specialist lighting engineer with due regard to the sensitivities of surrounding receptors. The lighting specification should include the appropriate selection of column heights, light fittings and luminaire design to ensure that the intensity and direction of the lighting is controlled through retaining tilting angles close to the horizontal to ensure that the effects of light spill, glare and sky glow are minimised. Consideration should be given, where applicable, to the measures in appropriate best practice guidance and standards.

Where applicable all lighting should be designed to comply with relevant codes and guidance, as follows:

- BS5489-1: 2013 – Code of practice for the design of road lighting – Part 1: Lighting of roads and public amenity areas;
- BS EN 13201-2: 2015 – Road lighting – Part 2: Performance requirements;
- BS EN 12464-2: 2007 – Lighting of Work Places – Part 2: Outdoor work places;
- CIBSE LG6 – 2016 – Lighting Guide - The Exterior Environment;
- SLL Guide to Limiting Obtrusive Light – 2012; and
- ILP – Guidance Notes for the Reduction of Obtrusive Light GN01: 2011.

As a detailed lighting design is not available at this stage, for the purposes of assessment a 'precautionary' lighting strategy (internal to the Proposed MSA) has been developed. The following pages provide the lighting strategy and intent for the types of lighting within the areas identified.

Where applicable the lighting strategy includes for the following design and associated mitigation measures:

- Where feasible, ***typical*** lighting product types have been used to minimise cost and specification constraints to the future detailed design.
- The operational lighting, for the Application Site, is based on the use of enhanced lighting technologies (LED) and minimal column heights.
- Where feasible, lamp specification is based on LED <2700K, >550nm peak to minimise UV light distraction to nocturnal ecology.
- Where feasible, all luminaire product uses flat glass technology at minimal inclination.

- Design criteria follows the best practice guidance, as per relevant codes and guidance above.

A comprehensive lighting design for the proposed development of the Application Site will be prepared at the detailed design stages.

External Parameters

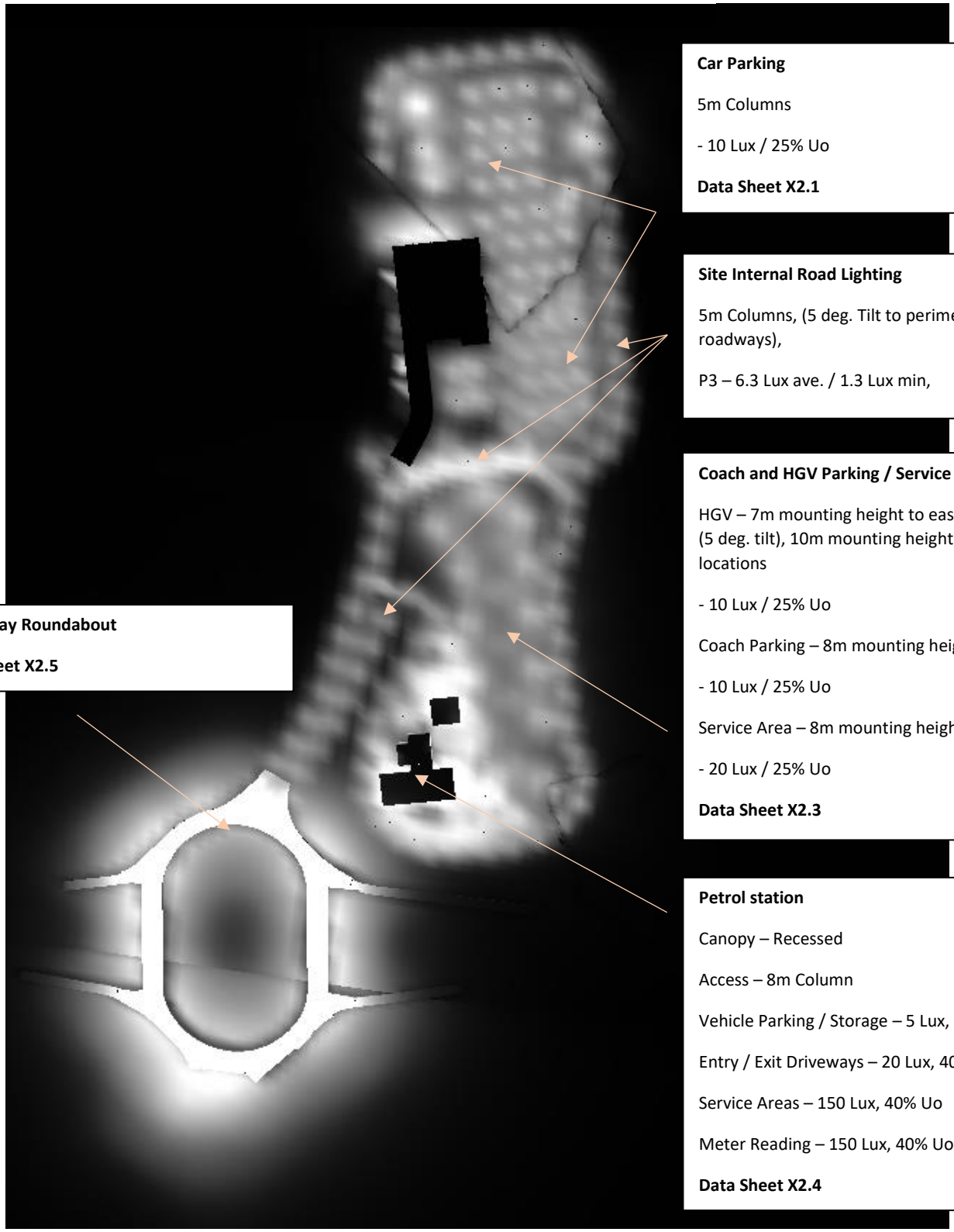
It is expected that the artificial lighting to be installed on the Application Site will be predominantly for:

- Car park Lighting
- Site Internal Access Road Lighting
- HGV Parking Lighting
- Coach Parking Lighting
- Service Areas
- Petrol Station
- Motorway Roundabout

This appendix provides an overview of the precautionary lighting parameters that have been included within the assessment.

Lighting Design Development – Rendered Overview

Below illustrates a rendered overview of the operational lighting for assessment, this is based on the lighting equipment and criteria contained within the following pages:



Car Parking

5m Columns

- 10 Lux / 25% Uo

Data Sheet X2.1

Site Internal Road Lighting

5m Columns, (5 deg. Tilt to perimeter roadways),

P3 – 6.3 Lux ave. / 1.3 Lux min,

Coach and HGV Parking / Service Areas

HGV – 7m mounting height to eastern edge (5 deg. tilt), 10m mounting height central locations

- 10 Lux / 25% Uo

Coach Parking – 8m mounting height

- 10 Lux / 25% Uo

Service Area – 8m mounting height

- 20 Lux / 25% Uo

Data Sheet X2.3

Petrol station

Canopy – Recessed

Access – 8m Column

Vehicle Parking / Storage – 5 Lux, 25% Uo

Entry / Exit Driveways – 20 Lux, 40% Uo

Service Areas – 150 Lux, 40% Uo

Meter Reading – 150 Lux, 40% Uo

Data Sheet X2.4

Motorway Roundabout

Data Sheet X2.5

X2.1 – External Lighting Parameters Data Sheet

Car Parking

Typical Equipment

- DW Windsor Kirium Pro Mini - 16x450mA 2.7K CLO LED Array – C2 Optic
  (One of the advantages of LED lighting is that it can be dimmed. Thus, instead of always lighting an empty street or parking lot at full brightness, LEDs can be turned down, or even off, when they aren't needed and then brought back to full brightness as necessary. This feature both saves on energy and reduces light pollution during the night).
- Flat glass, zero tilt and zero uplight
- 5m mounting height
- Minimum UV / Blue Light
- CCT 2700K, >550 nm Peak (BCT guidance 2018)
- Dusk till dawn operation

Typical Design Criteria

- Medium traffic, e.g. parking areas of department stores, office buildings, plants, sports and multipurpose building complexes
- Table 5: BS 5489-1:2013 – Code of practice for the design of road lighting – Part 1: Lighting of roads and public amenity areas
- Table 5.9 — Parking areas: EN 12464-2:2014
- Assessment based on 10.0 Lux (average), 0.25 Uniformity

X2.2 – External Lighting Parameters Data Sheet

Site Internal Road Lighting

Typical Equipment

- DW Windsor Kirium Pro Mini - 16x450mA 2.7K CLO LED Array – A3 Optic
  (One of the advantages of LED lighting is that it can be dimmed. Thus, instead of always lighting an empty street or parking lot at full brightness, LEDs can be turned down, or even off, when they aren't needed and then brought back to full brightness as necessary. This feature both saves on energy and reduces light pollution during the night).
- Flat glass, and zero uplight, 5 degree tilt to perimeter roadways
- 5m mounting height
- Minimum UV / Blue Light
- CCT 2700K, >550 nm Peak (BCT guidance 2018)
- Dusk till dawn operation

Typical Design Criteria

- BS5489-1: 2013 – Code of practice for the design of road lighting. Lighting of roads and public amenity areas
- BS EN 13201-2: 2015 – Road lighting – Part 2: Performance requirements
- In view of the E2 nature of the Site it is intended to illuminate access roadways within the Site as an S3 classification.
- P3 relates to a low ambient luminance (E2) where the traffic speed is less than 30mph and traffic usage is high and can be associated with local amenities such as clubs, shopping facilities, public houses, etc.
- A P3 classification requires an average 6.3 Lux (minimum maintained) and a minimum of 1.3 Lux (maintained).
- Based on Ra>60, S/P ratio = 1.2

X2.3 – External Lighting Parameters Data Sheet

Coach and HGV Parking / Service Areas

Typical Equipment

- DW Windsor Kirium Pro 2
  (One of the advantages of LED lighting is that it can be dimmed. Thus, instead of always lighting an empty street or parking lot at full brightness, LEDs can be turned down, or even off, when they aren't needed and then brought back to full brightness as necessary. This feature both saves on energy and reduces light pollution during the night).
- Flat glass and zero uplight
  - HGV – 10m, 48 x 1000mA 2.7K CLO LED Array – A3
  - Coach Parking – 8m, 48 x 800mA 2.7K CLO LED Array – C2
  - Service Area – 8m, 48 x 800mA 2.7K CLO LED Array – C2
- Minimum UV / Blue Light
- CCT 2700K, >550 nm Peak (BCT guidance 2018)
- Dusk till dawn operation

Typical Design Criteria

Coach and HGV Parking

- Medium traffic, e.g. parking areas of department stores, office buildings, plants, sports and multipurpose building complexes
- Table 5: BS 5489-1:2013 – Code of practice for the design of road lighting – Part 1: Lighting of roads and public amenity areas
- Table 5.9 — Parking areas: EN 12464-2:2014
- Assessment based on 10.0 Lux (average), 0.25 Uniformity

Service Areas

- Short-term loading and unloading of solid bulk goods
- Table 5.7: BS EN12464-2:2014 – Light and Lighting – Lighting of Work Places, Part 2: Outdoor work places
- Assessment based on 25.0 Lux (average), 0.25 Uniformity

X2.4 – External Lighting Parameters Data Sheet

Petrol Station

Typical Equipment

- Controlled light distribution minimises obtrusive light
- Colour rendering greater than 80Ra for improved visual acuity (LED only)
- Dusk till dawn operation

Canopy Fuel Areas

- 7150 lumen 4000k LED
- ULOR = Zero
- Canopy recessed
- e.g. – Thorlux LEDBAY

Fuel Area Access Routes

- DW Windsor Kirium Pro 2 - 48x800mA 2.7K CLO LED Array
- A3 Optic
- Flat glass, zero tilt and zero uplight
- 8m mounting height, perimeter 5-degree tilt
- Minimum UV / Blue Light
- CCT 2700K, >550 nm Peak (BCT guidance 2018)
- Dusk till dawn operation

Typical Design Criteria

BS EN 12464-2:2014 – Lighting of Work Places – Part 2: Outdoor work places

- Vehicle Parking / Storage – 5 Lux, 25% uniformity
- Entry / Exit Driveways – 20 Lux, 40% uniformity
- Service Areas – 150 Lux, 40% uniformity
- Meter Reading – 150 Lux, 40% uniformity

X2.5 – External Lighting Parameters Data Sheet

Note: Preliminary lighting (1 of 2) layout for assessment purposes, subject to detailed design

X2.5 – External Lighting Parameters Data Sheet

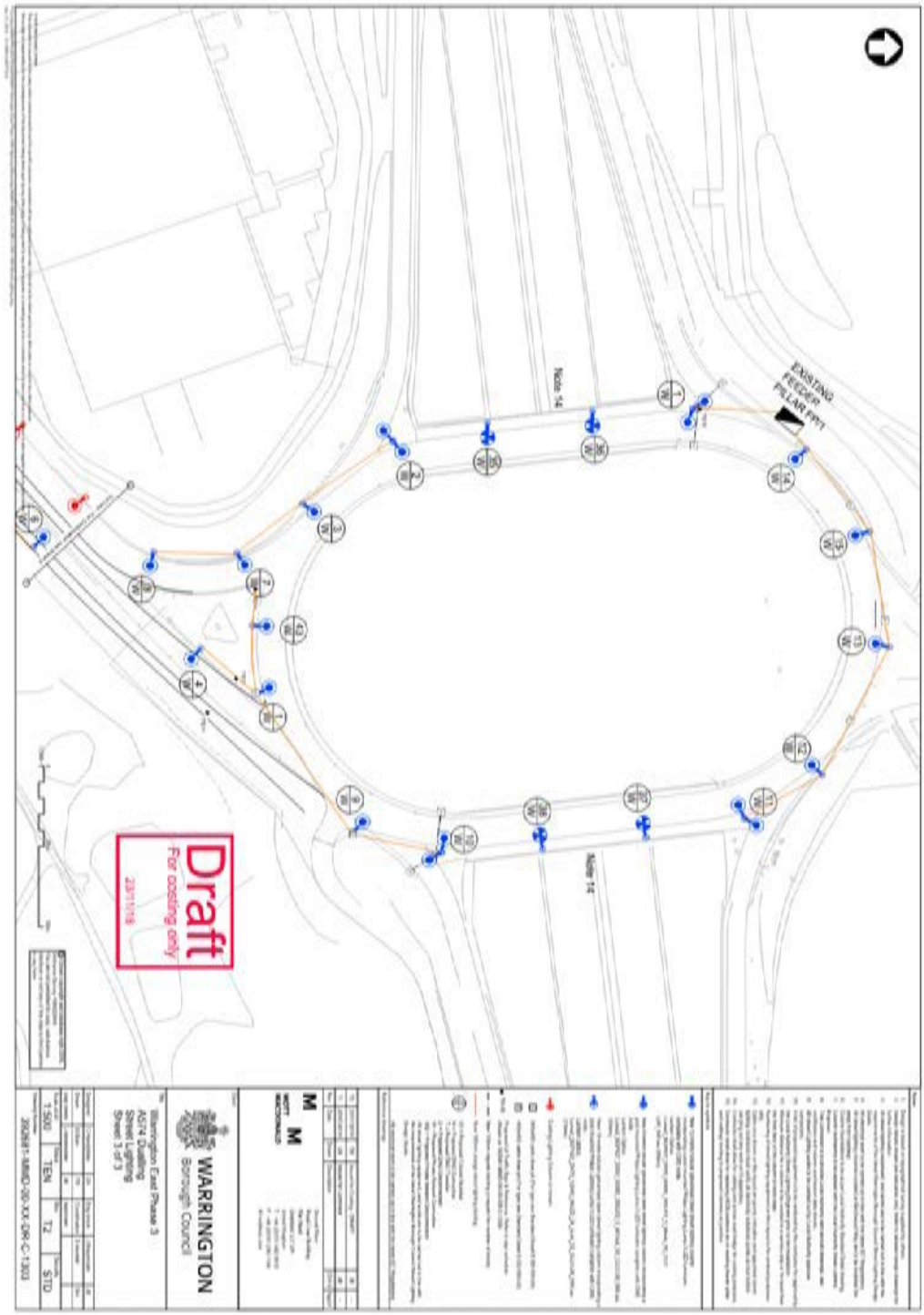
Note: Preliminary lighting (2 of 2) layout for assessment purposes, subject to detailed design

X2.5 – External Lighting Parameters Data Sheet

Note: Preliminary lighting layout for assessment purposes, subject to detailed design

X2.6 – External Lighting Parameters Data Sheet

Note: The luminaires shown replace or are in addition to the current arrangement. Where existing luminaires are replaced this is taken into account for the baseline profile.



Bibliography

1. Department for Environment, Food and Rural Affairs (DEFRA) (2005) *Clean Neighbourhoods and Environment Act* (CNEA) 2005, HMSO, London.

2. *The Highways Act 1980*, HMSO, London.

3. Department for Communities and Local Government (2019) *National Planning Policy Framework,* HMSO, London

4. Department for Communities and Local Government (2014) *National Planning Practice Guidance 2014 – Light Pollution*, http://planningguidance.planningportal.gov.uk/blog/guidance/light-pollution.

5. Warrington Borough Council (Adopted July 2014) *Local Plan Core Strategy* - Warrington Borough Council

6. Warrington Borough Council (Adopted May 2013) *Environmental Protection Supplementary Planning Document* - Warrington Borough Council

7. Institute of Lighting Professionals (2011) Guidance Notes for the Reduction of Obtrusive Light GN01, ILP, Rugby

8. CIE International Commission on Illumination (2017) *CIE 150 - Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations*, Commission Internationale De L'Eclairage, Vienna.

9. CIE International Commission on Illumination (1997) CIE 126 - *Guidelines for Minimising Sky Glow,* Commission Internationale De L'Eclairage, Vienna.

10. CIE International Commission on Illumination (1998) CIE Technical Report 129 - *Guide for lighting exterior work areas*, Commission Internationale De L'Eclairage, Vienna.

11. The British Standards Institution (7th Edition, 2012) *BS 5489-1: 2013 – Code of practice for the design of road lighting – Part 1: Lighting of roads and public amenity areas*, BSI Standards, London.

12. The British Standards Institution / CEN (2003) *BS EN 13201-2: 2015 – Road lighting – Part 2: Performance requirements,* BSI Standards, London.

13. The British Standards Institution / CEN (2007) *BS EN 12464-2:2014 – Lighting of Work Places – Part 2: Outdoor work places*, BSI Standards, London

14. Campaign to Protect Rural England Night Blight (2016), http://nightblight.cpre.org.uk/maps/

15. BCT / ILP (2018) *Guidance Note 08/18 – Bats and Artificial Lighting in the UK*, ILP, Rugby