

Norwich Western Link

Environmental Statement

Chapter 5: Approach to EIA

Appendix 5.1: Environmental Impact Assessment Scoping Report 2020 Part 2 of 3

Author: WSP

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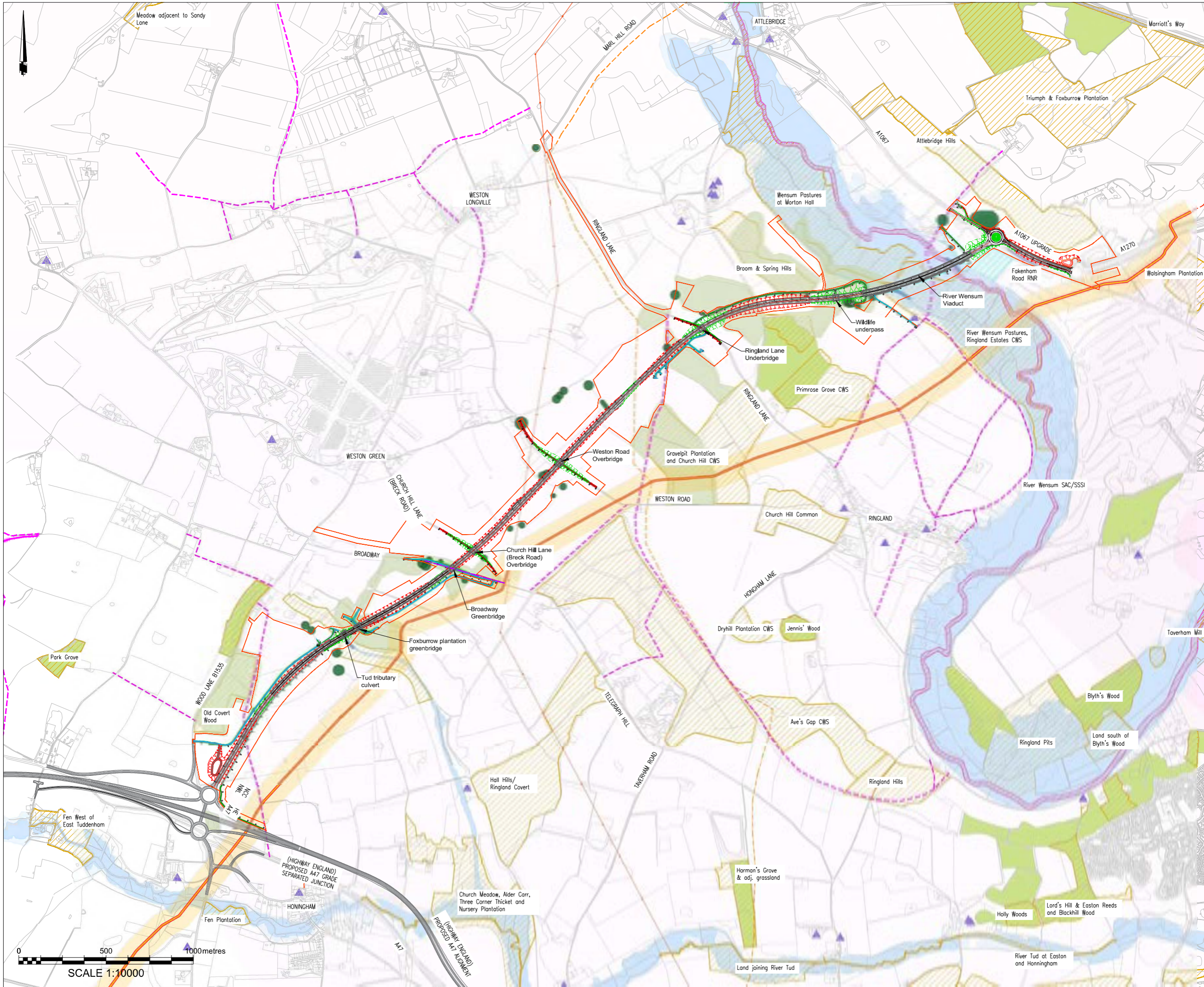
1 Introduction

1.1.1 The purpose of this report is to ensure that the subsequent ES is focused on the key impacts likely to give rise to significant adverse effects upon the environment, and to obtain agreement on the approach and scope of the assessments for each factor. This report also identifies those elements that are not considered necessary to assess further. This approach is in line with the general aim to undertake proportionate EIA, as advocated by industry best practice. Whilst this report seeks to establish the overall framework for the EIA in relation to the environmental factors and associated effects, the exact scope of the EIA will be influenced by the scoping opinion received, the on-going design evolution of the Scheme, and through on-going baseline data collection (field surveys). It is proposed that the following environmental factors, as listed under Article 3(1) of EU Directive 2014/52/EU, are included in the scope of the EIA:

- Population and Human Health;
- Biodiversity;
- Land, soil, water, air and climate; and
- Material assets, cultural heritage and the landscape

1.1.2 The factor-specific elements scoped in and out of further assessment are outlined in chapters 5 to 18 and are summarised in chapter 4.

1.1.3 We have included a summary of key information shown in this document in an accessible format. However, some users may not be able to access all technical details. If you require this document in a more accessible format please contact norwichwesternlink@norfolk.gov.uk.



- KEY**
- PROPOSED**
- SITE EXTENTS BOUNDARY
 - EMBANKMENT
 - CUTTING
 - A47 DUALLING (BY HIGHWAYS ENGLAND)
 - STRUCTURE (INDICATIVE LOCATION)
 - RESERVOIR (BY WENSUM VALLEY GOLF CLUB)
 - HORNSEA PROJECT THREE
 - POWER LINE
 - GAS PIPELINE
- EXISTING CONSTRAINTS**
- ACCESS/ROUTES**
- FOOTPATHS/BRIDWAYS/BYWAYS
 - ROADS/TRACKS TO BE STOPPED UP
- DESIGNATIONS**
- COUNTY WILDLIFE SITE
 - RIVER WENSUM: SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI) AND SPECIAL AREA OF CONSERVATION (SAC)
 - ROADSIDE NATURE RESERVE (RNR)
 - LISTED BUILDINGS
- DRAINAGE**
- DITCHES/WATER COURSES
 - FLOOD ZONE 3
 - FLOOD ZONE 2
 - GROUNDWATER SOURCE PROTECTION ZONE 3
 - GROUNDWATER SOURCE PROTECTION ZONE 2
 - GROUNDWATER SOURCE PROTECTION ZONE 1
- LANDSCAPE**
- ANCIENT WOODLAND
 - WOODLAND
 - ANCIENT/VETERAN TREE ROOT PROTECTION AREA

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REVISION	DRAWN	CHECKED	APPROVED	DATE

DESCRIPTION

Norfolk County Council
 Tom McCabe
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 Community and Environmental Services
 Norfolk County Council
 County Hall, Martineau Lane
 Norwich NR1 2SG

PROJECT TITLE

NORWICH WESTERN LINK

DRAWING TITLE

Scheme Constraints Plan

DRAWING STATUS

D2 - FOR TENDER

DRAWN	CHECKED	APPROVED	AUTHORISED
ZS	ZS	AW	SG

SCALE @ A1 SIZE 1:10000 **DATE** 22/05/2020 **REVISION** P04

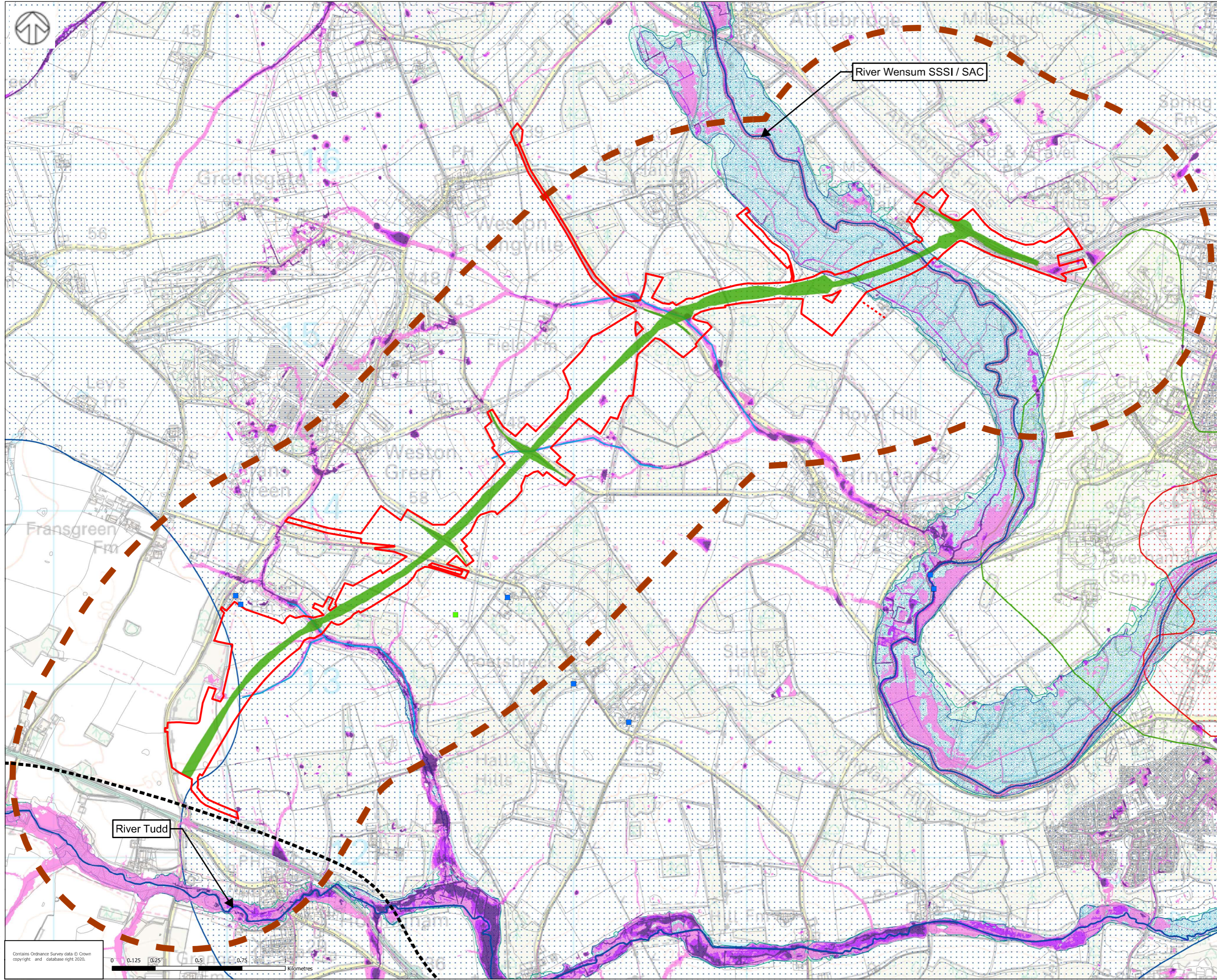
DRAWING NUMBER

NCCT41793-04-B-06-04-0001

Appendix B-2

WATER ENVIRONMENTAL CONSTRAINTS PLAN





DO NOT SCALE

Key

- Proposed Scheme
 - Site Extents Boundary
 - 1km Water Constraints Study Area
 - A47 Preferred Route Alignment
- Rivers**
- Main Rivers
 - Ordinary Watercourses
- Flood Zones**
- Flood Zone 3
 - Flood Zone 2
- Risk of Flooding from Surface Water**
- High (probability of occurrence 1 in 30 years)
 - Medium (probability of occurrence between 1 in 30 years and 1 in 100 years)
 - Low (probability of occurrence between 1 in 100 years and 1 in 1,000 years)
- Groundwater Source Protection Zones**
- Zone I - Inner Protection Zone
 - Zone II - Outer Protection Zone
 - Zone III - Total Catchment
- Protected Areas**
- Special Area of Conservation
 - Site of Special Scientific Interest
- Abstractions and Discharges**
- Abstraction
 - Discharge

P01 for EIA Scoping Report



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NORFOLK COUNTY COUNCIL

N/A

NORWICH WESTERN LINK

WATER ENVIRONMENT CONSTRAINTS PLAN

1:10,000	UKAZS001	N/A
N/A	UKECF002	22/05/2020

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Appendix C

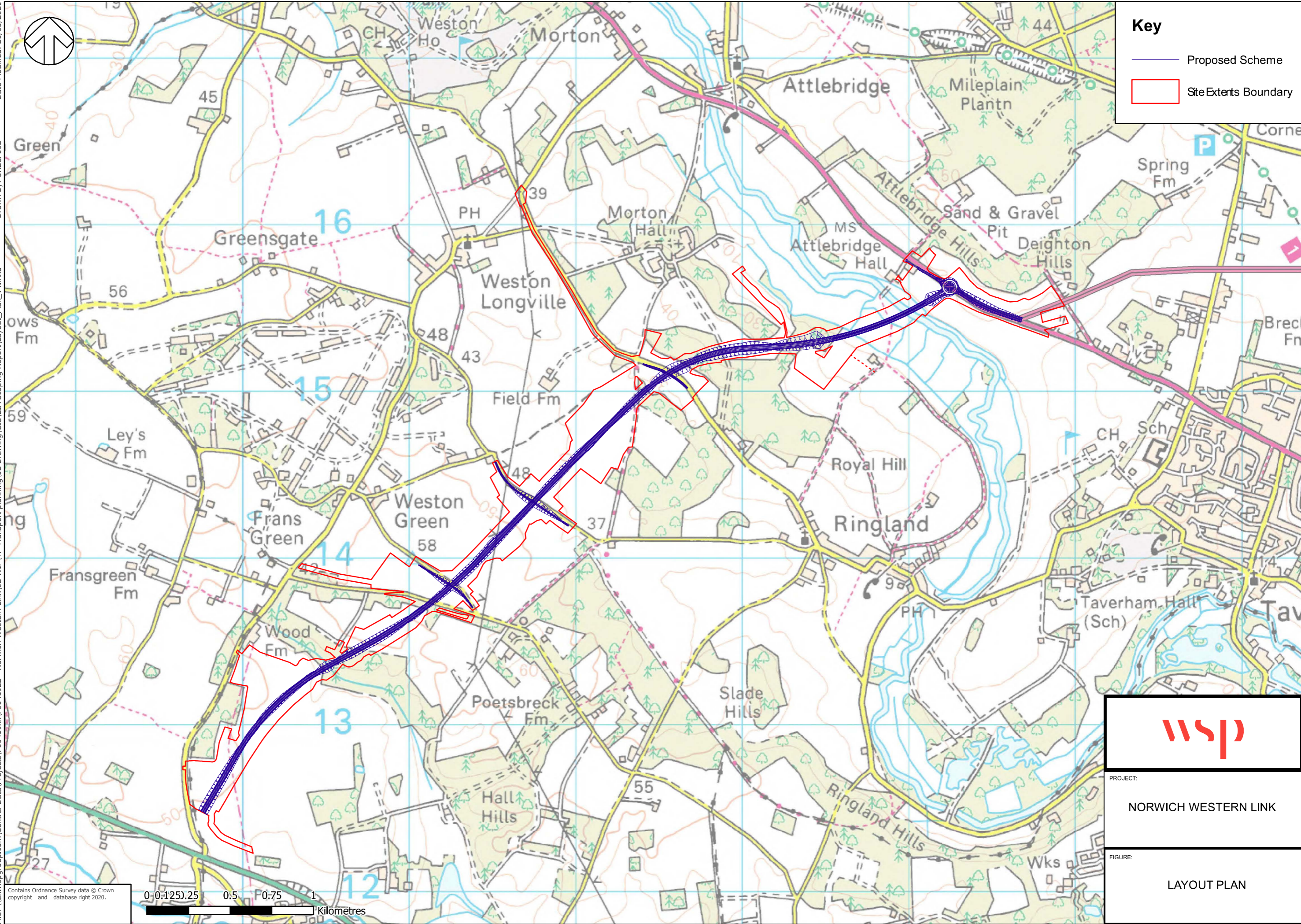
PROJECT LAYOUT PLAN



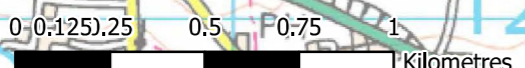


Key

- Proposed Scheme
- Site Extents Boundary



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PROJECT:
NORWICH WESTERN LINK

FIGURE:
LAYOUT PLAN

Appendix D-1

AIR QUALITY - ADDITIONAL INFORMATION



AIR QUALITY - ADDITIONAL INFORMATION

- 1.1.1 **Table A5-1** below shows the results from WSP's on-going roadside NO₂ diffusion tube survey, which is being conducted at 10 locations. The location of these sites is shown in **Figure 5-2 (Appendix D-3)**. The first 4 months of monitoring data (September-December 2019) from the 6 month survey are presented in **Table A5-1** below.
- 1.1.2 The measurements have been annualised using 2018 data from two Defra Automated Urban and Rural Network (AURN) continuous monitoring stations within 50 miles of the Scheme (Norwich Lakenfields and Wicken Fen) in accordance with LAQM.TG(16).
- 1.1.3 An annualisation factor of 0.74 was used for tubes NWL_2, NWL_3, NWL_8 and NWL_9 whereas a factor of 0.80 was used for tubes NWL_5 to NWL_7. The annualised mean results were then adjusted using a factor of 0.89 derived from Defra's bias adjustment spreadsheet¹ for diffusion tubes prepared by Gradko using 50% triethanolamine (TEA) in acetone.
- 1.1.4 The highest measured annual mean concentration was 27.9µg/m³ which was measured at NWL_7 (Tomsfield Hatfield) which is located adjacent to the A47 westbound layby, 2.6m from the road. Concentrations at all sites are below the annual mean NO₂ objective of 40µg/m³.

Table A5-1 - WSP Roadside NO₂ Diffusion Tube Monitoring Data (September - December 2019)

Site ID	Site Name	Co-ordinates (Based on OS Grid Reference, m)		Annualised NO ₂ Concentration (µg/m ³)
		X	Y	
NWL_1*	Swanland Road	623203	308616	Insufficient data due to tubes missing on changeover
NWL_2	Tollgate Road	616984	314157	20.9
NWL_3	Dixons Hill Close	617039	314101	23.0
NWL_4	Not used	-	-	-
NWL_5	Bullen's Green Lane	612822	316727	20.3
NWL_6	Tudor Close	610205	318259	19.6
NWL_7	Tomsfield Hatfield	610271	311986	27.9
NWL_8	Crossbrook	612784	310988	11.2
NWL_9	Meadow Croft	616934	310350	25.5
NWL_10	Bishops Close	619069	309691	Insufficient data due to tubes missing on changeover
<u>Notes:</u>				

¹ Defra (2019). Diffusion Tube Bias Adjustment Factors Spreadsheet for September 2019. Available at: <https://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>

Site ID	Site Name	Co-ordinates (Based on OS Grid Reference, m)		Annualised NO ₂ Concentration (µg/m ³)
		X	Y	
*The diffusion tube at site NWL_1 is co-located with the NCC Castle Meadow (CM1) continuous automatic monitoring station.				
Values shown in <i>bold, italics</i> exceed the annual mean NO ₂ air quality objective of 40µg/m ³ .				

1.1.5 **Table A5-2** below shows the site information for the local authority continuous air quality monitoring station and roadside NO₂ diffusion tube monitoring sites within the provisional study area. **Table A5-3** shows the 2014-18 annual mean NO₂ concentrations for the locations given in **Table A5-2**.

Table A5-2 - Local Authority Monitoring Site Information

Monitoring Type	Site ID	Site Name	Site Type	Co-ordinates (Based on OS Grid Reference, m)	
				X	Y
Norwich City Council²					
Continuous Automatic Monitoring Station	CM2	Lakenfields AURN	Urban Background	623638	306944
Diffusion Tube	DT1	256 King Street	Roadside	623863	307679
	DT2	Queens Road Travelodge	Roadside	622917	307974
	DT5	Chalk Hill Road	Roadside	623907	308597
	DT6	130 Magdalen Street	Roadside	623161	309550
	DT13	Castle Meadow	Roadside	623141	308607
	DT14	Castle Meadow 2	Roadside	623250	308590
	DT16	Zipfel House	Roadside	623186	309650
	DT17	68 Bull Close Road	Roadside	623305	309544
	DT19	Cattlemarket Street	Roadside	623321	308431
	DT21	Rotary House King Street	Roadside	623880	307659
	DT22	Carrow Bridge House	Roadside	623901	307710
	DT23	62 Magpie Road	Roadside	622971	309652
DT24	26 Bull Close Road	Roadside	623229	309625	

² Norwich City Council (2019). 2019 Air Quality Annual Status Report (ASR). Available at: https://www.norwich.gov.uk/download/downloads/id/5582/2019_air_quality_annual_status_report.pdf

Monitoring Type	Site ID	Site Name	Site Type	Co-ordinates (Based on OS Grid Reference, m)	
				X	Y
	DT25	24 Bargate Court	Roadside	623422	309388
	DT26	3 Riverside Road	Roadside	623870	308516
	DT28	71 Dukes Court	Roadside	622431	308663
Broadland District Council³					
Diffusion Tube	BN17	School Road, Drayton	Roadside	617794	314204
	BN21	Thorpe End	Roadside	627741	310902
	BN22	Wroxham Road/Ring Road, Sprowston	Roadside	624060	311166
South Norfolk District Council					
Diffusion Tube	DT17	84 West End, Costessey	Roadside	616652	311650
	DT26	Newmarket Road, Cringleford	Roadside	619801	305869
	DT27	Lord Nelson Drive, Costessey	Roadside	616348	310585

Table A5-3 - Local Authority Annual Mean NO₂ Concentrations (2014-18)

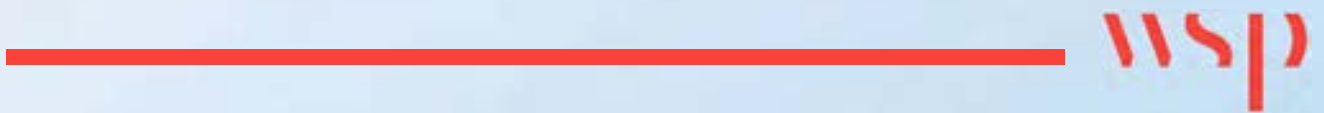
Site ID	Annual Mean NO ₂ Concentration (µg/m ³)				
	2014	2015	2016	2017	2018
Norwich City Council					
CM2	14.0	12.0	14.2	13.0	12.0
DT1	41.5	36.2	37.7	36.3	33.3
DT2	33.6	30.9	33.2	29.7	No Data
DT5	32.9	29.2	29.9	31.3	29.2
DT6	30.9	28.4	29.6	31.2	27.1
DT13	56.3	56.4	45.9	48.5	44.9
DT14	50.5	48.1	41.1	45.4	No Data
DT16	39.0	34.8	38.6	39.9	33.4
DT17	29.0	26.9	26.9	29.1	No Data

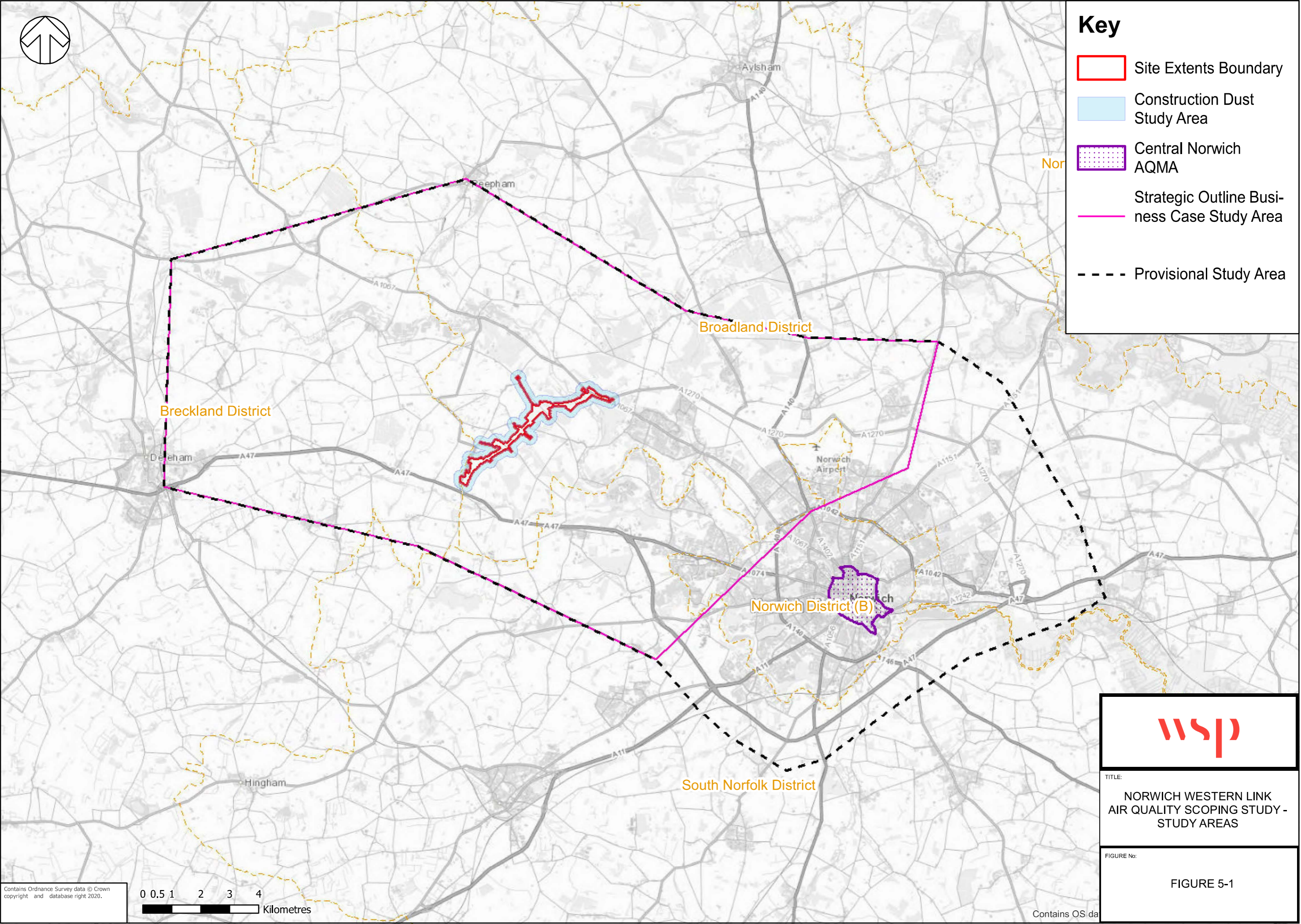
³ Broadland District Council and South Norfolk District Council (2019). 2019 Air Quality Annual Status Report (ASR). Available at: https://www.south-norfolk.gov.uk/sites/default/files/downloads/asr_template_england_2019_0.pdf

Site ID	Annual Mean NO ₂ Concentration (µg/m ³)				
	2014	2015	2016	2017	2018
DT19	46.0	37.9	39.1	37.7	36.1
DT21	36.6	34.3	32.9	32.5	29.1
DT22	24.7	21.6	23.3	25.3	31.1
DT23	32.1	29.6	29.4	29.6	No Data
DT24	31.5	30.0	30.2	29.9	No Data
DT25	35.1	34.2	35.0	32.7	29.6
DT26	51.2	47.2	46.7	44.2	39.3
DT28	25.8	23.8	25.3	25.9	No Data
Broadland District Council³					
BN17	-	-	-	19.5	14
BN21	No Data	No Data	No Data	No Data	18.7
BN22	No Data	No Data	No Data	No Data	31.7
South Norfolk District Council³					
DT17	13.1	10.8	19.4	20.5	19.1
DT26	24.4	21.4	25.5	24.1	22.4
DT27	28.3	23.1	28.4	25.4	23.6
<u>Notes:</u>					
<i>Bold italics</i> indicate exceedance of the annual mean NO ₂ air quality objective of 40µg/m ³ .					

Appendix D-2

AIR QUALITY - SCOPING STUDY AREAS





Key

- Site Extents Boundary
- Construction Dust Study Area
- Central Norwich AQMA
- Strategic Outline Business Case Study Area
- Provisional Study Area



TITLE:
**NORWICH WESTERN LINK
 AIR QUALITY SCOPING STUDY -
 STUDY AREAS**

FIGURE No:
FIGURE 5-1

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Appendix D-3

AIR QUALITY - BASELINE CONDITIONS

