



East Anglia ONE North Offshore Windfarm

Appendix 4.4

Traffic and Access – Substation Zone 7 Appraisal (formerly Zone W1)

Environmental Statement Volume 3

Applicant: East Anglia ONE North Limited
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Traffic and Access - W1 Substation Zone Appraisal

East Anglia TWO and East Anglia
ONE North

Technical Note:

East Anglia TWO and East Anglia ONE North - Traffic and Access - W1 Substation Zone Appraisal

1 Introduction

- 1.1.1 This note has been prepared by Royal HaskoningDHV to provide an assessment of Traffic and Access, to inform the site selection for the substation infrastructure for the East Anglia TWO (EA2) and East Anglia ONE North (EA1N) projects.
- 1.1.2 The note sets out the results of a preliminary Traffic and Access constraint assessment with regard to the W1 potential substation zone. The detail behind this note will be discussed by the Traffic Expert Topic Group meeting due to be held in the week commencing 23rd April.
- 1.1.3 A two-stage assessment has been adopted to inform the feasibility of locating the substation infrastructure within W1:
1. Identify the highway network (geometric) constraints (i.e. identify only those routes that can 'physically' accommodate HGV traffic).
 2. Having identified the routes that can accommodate HGV traffic, identify the sensitivity of the route to increases in HGV traffic.
- 1.1.4 The assessment adopts a Red, Amber, Green 'RAG' approach for both stages, ranging from red for significant constraints to green for few constraints.

2 Assessment

2.1 Stage 1, Highway Network Constraints

- 2.1.1 Stage 1 has examined the most direct routes from the A12 that could potentially be used to deliver plant and materials to the substation site.
- 2.1.2 Based upon Royal HaskoningDHV's previous experience of similar developments, it has been assumed that during construction, deliveries to the substation would be of the intensity that two HGVs would need to pass each other along a given road. Therefore, a road capable of allowing two HGVs to pass has been adopted as representing minimum constraints. Developing this approach, **Table 2.1** sets out the adopted criteria to assess the highway network constraints.

Table 2.1: Highway network constraints criteria

RAG score	RAG criteria
Red	Road not wide enough for two HGVs to pass and would require extensive widening, potentially outside of the public highway, requiring third party land acquisition.
Amber	Road wide enough for two HGVs to pass at certain points or with verge overrunning. Widening may be possible within the highway boundary.
Green	Road generally wide enough for two HGVs to pass with few constraints.

2.1.3 To inform the RAG assessment, the roads surrounding the W1 substation zone have been subject to a review using a combination of Ordnance Survey mapping and Google Streetview.

2.1.4 The roads that directly interface the W1 search area (Grove Road routing from Friston Village to the B1119 and School Road routing from Goldfair Green village) are unsuitable for HGV traffic. It is therefore considered that to serve W1, a new permanent access road would need to be constructed across country from a suitable road.

2.1.5 This would also remain as a permanent feature for the operational phase. The length and route of any access track would therefore be a consideration for other EIA topics such as, archaeology and landscape and visual impact.

2.1.6 There are three suitable roads (coloured green, see Figure 1) that surround the W1 substation zone from which a new access could be routed. These are the B1119 to the north, B1069 to the east and B1121 to the south. There are multiple routes that a HGV could take to the A12, these are described in the following **Table 2.2**.

Table 2.2: Available Routes to the A12

Access location	Route options	Description of route, access location to A12
B1119 ¹	1	B1119 east, B1122 north, A12
	2	B1119 east, B1069 south, A1094 west, A12
B1069	3	B1069 north, B1122 north, A12
	4	B1069 south, A1094 west, A12
B1121	5	B1121 south, A1094 west, A12
	6	B1121 north, B1121 south, A12

2.2 Stage 2, Sensitive Receptors

2.2.1 In assessing the potential environmental impacts of EA2 and EA1N, an assessor would be required to consider the impact of the project's traffic upon discrete locations and groups, known as 'sensitive receptors'. Sensitive locations can include schools, shopping areas,

¹ The route option of heading west along the B1119 to the A12 has been discounted as the highway network constraints mapping shows this road is not wide enough for two HGVs and would require substantial widening in close proximity to Saxmundham.

hospitals, etc. whilst sensitive groups can include, children, the elderly and people walking and cycling.

2.2.2 Locations with high concentrations of sensitive receptors are assigned a higher receptor value and therefore, relatively low increases in traffic can lead to potentially significant impacts. Routes with fewer sensitive receptors are however able to potentially accommodate greater increases in traffic before registering significant impacts, however all impacts on receptors will be recorded in the assessment.

2.2.3 Sensitivity is also influenced by the highway environment and in particular the presence of footpaths and landscaping to separate pedestrians from traffic.

2.2.4 The following section provides a review of the sensitive receptors for the shortlisted delivery routes, **Table 2.3** sets out the RAG assessment criteria.

Table 2.3: Sensitive receptor assessment methodology

RAG score	RAG criteria
Red	High concentrations of sensitive receptors (e.g. hospitals, schools, areas with high footfall) and limited separation provided by the highway environment.
Amber	A low concentration of sensitive receptors (e.g. residential dwellings, pedestrian desire lines) and limited separation from traffic provided by the highway environment.
Green	Few sensitive receptors and / or highway environment can accommodate changes in volumes of traffic.

2.2.5 A summary of assessed route sensitivity is provided within the following **Table 2.4**.

Table 2.4: Route Sensitivity

Access location	Route options	Route Sensitivity
B1119	1	Impacts upon sensitive receptors within the village of Theberton and most significantly within the centre of Leiston. Receptors include residential properties, churches, schools, nurseries, doctors and shops.
	2	Impacts upon significant number of sensitive receptors within the settlements of Leiston, and Goldfair Green. Receptors include, residential properties, churches, schools, nurseries, doctors and shops.
B1069	3	Impacts upon significant number of sensitive receptors within the settlements of Leiston, and Goldfair Green. Receptors include, residential properties, churches, schools, nurseries, doctors and shops.
	4	Minor frontage development along the route, but avoids most the most sensitive areas.
B1121	5	Minor frontage development along the route, but avoids most the most sensitive areas.
	6	Minor frontage development along the route, but avoids most the most sensitive areas.

2.2.6 It can be noted from **Table 2.4**, that routes 1, 2 and 3 would require HGV traffic to pass through

Leiston which is considered to be particularly traffic sensitive. The adoption of these routes could result in the following risks:

- Objections from stakeholders, notably Leiston Town Council;
- Constraints upon the projects traffic, such as having to avoid peak hours, school drop off/pickup, etc; and
- Increased construction durations (and cost) from imposed traffic constraints.

2.2.7 Routes 4, 5 and 6 are considered viable options. With regards to access via the B1121, it is noted that should the construction access be constructed to the north of Friston then route 6 would be preferable as traffic could avoid that settlement. Conversely, if an access is preferred to the south of Friston then route 5 should be promoted over route 6.

3 Summary

3.1.1 This note sets out the results of a preliminary Traffic and Access constraint assessment with regard to the W1 potential substation zone.

3.1.2 A two-stage assessment has been adopted to inform the feasibility of locating the substations within W1:

1. Identify the highway network (geometric) constraints (i.e. identify only those routes that can 'physically' accommodate HGV traffic).
2. Having identified the routes that can accommodate HGV traffic, identify the sensitivity of the routes to increases in HGV traffic.

3.1.3 An initial review of highway geometry demonstrates that the only suitable route to gain access to W1 would be via a new access track from the B1119, B1069 or B1121.

3.1.4 A review of highway geometry constraints has shortlisted six potential routes from the A12 as being able to accommodate HGV deliveries. These shortlisted routes have been subject to review of the receptors that are sensitive to changes in traffic flow.

3.1.5 **Table 3.1** summarises the delivery routes that have been assessed as potentially suitable for serving W1.

Table 3.1: Summary of Findings

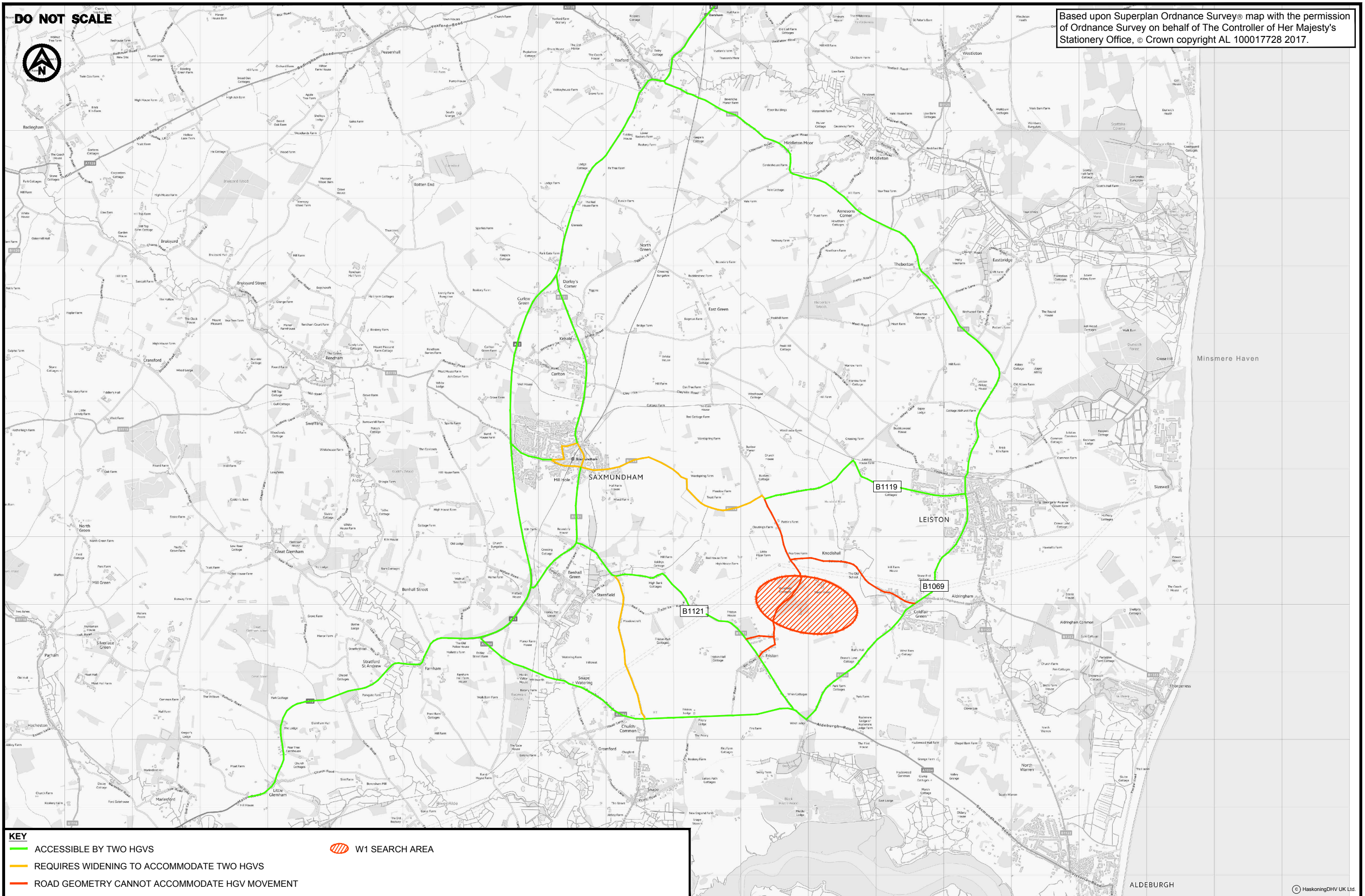
Access location	Route options	Description of route, access location to A12
B1069	4	B1069 south, A1094 west, A12
B1121	5	B1121 south, A1094 west, A12
	6	B1121 north, B1121 south, A12

3.1.6 Prior to finalising on a preferred delivery route, it is recommended that further work is undertaken to establish the structural integrity of the highway that serves the routes, and vehicle swept path analysis is undertaken to determine the extent of highway widening.

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KEY

- ACCESSIBLE BY TWO HGVS
- REQUIRES WIDENING TO ACCOMMODATE TWO HGVS
- ROAD GEOMETRY CANNOT ACCOMMODATE HGV MOVEMENT
- W1 SEARCH AREA



TITLE
**EAST ANGLIA TWO
HIGHWAY NETWORK CONSTRAINTS ASSESSMENT**



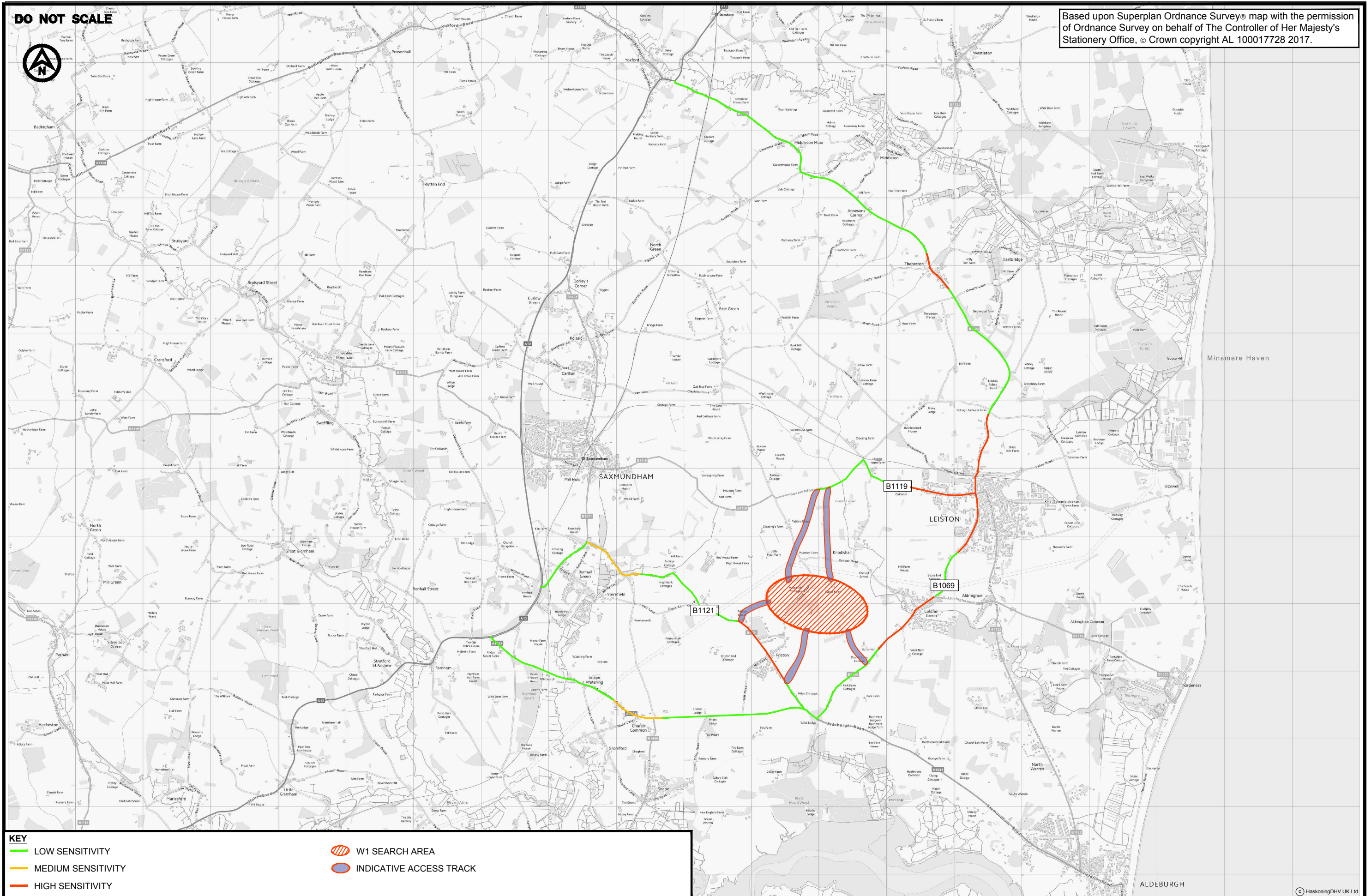
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KEY

- LOW SENSITIVITY
- MEDIUM SENSITIVITY
- HIGH SENSITIVITY
- W1 SEARCH AREA
- INDICATIVE ACCESS TRACK

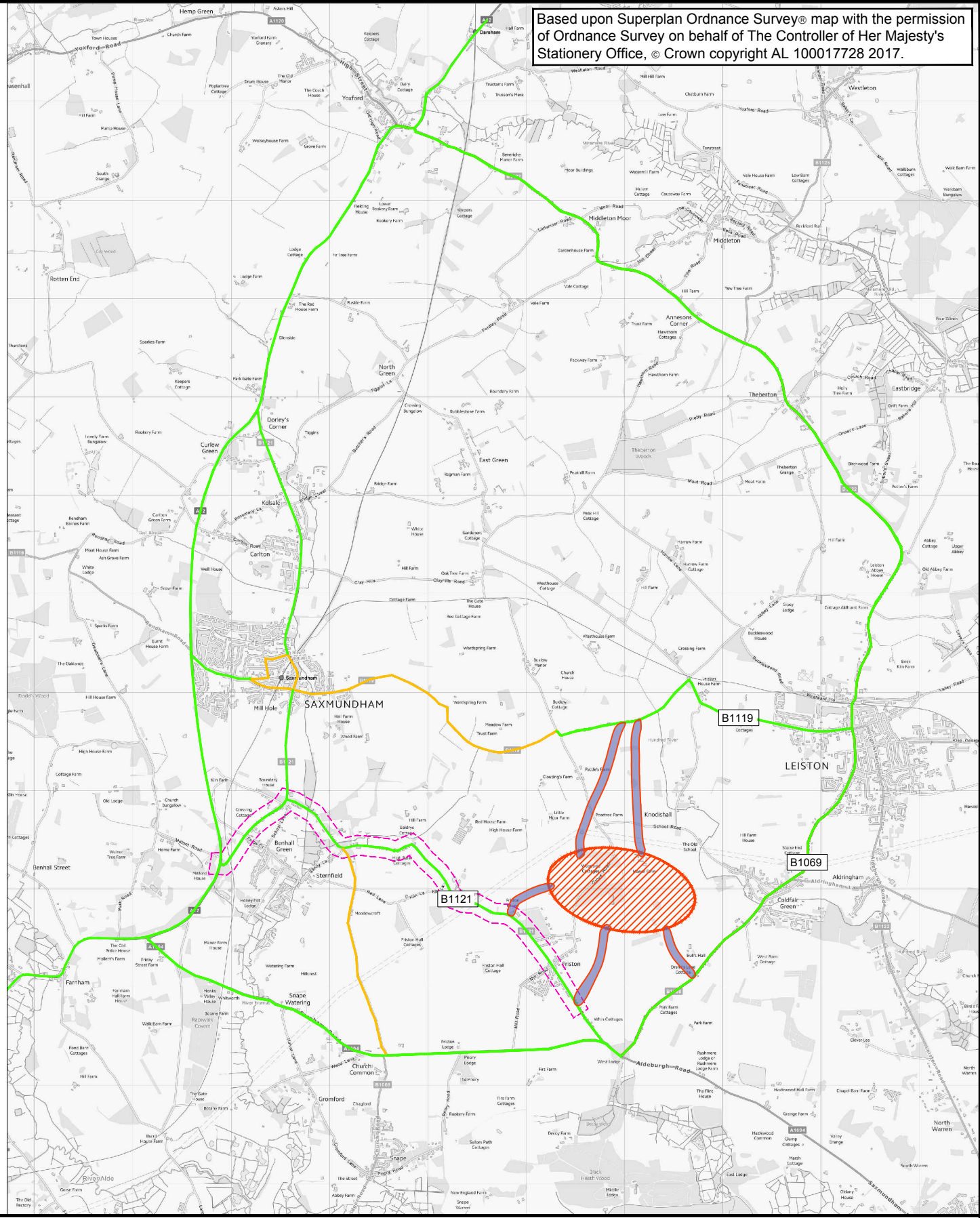
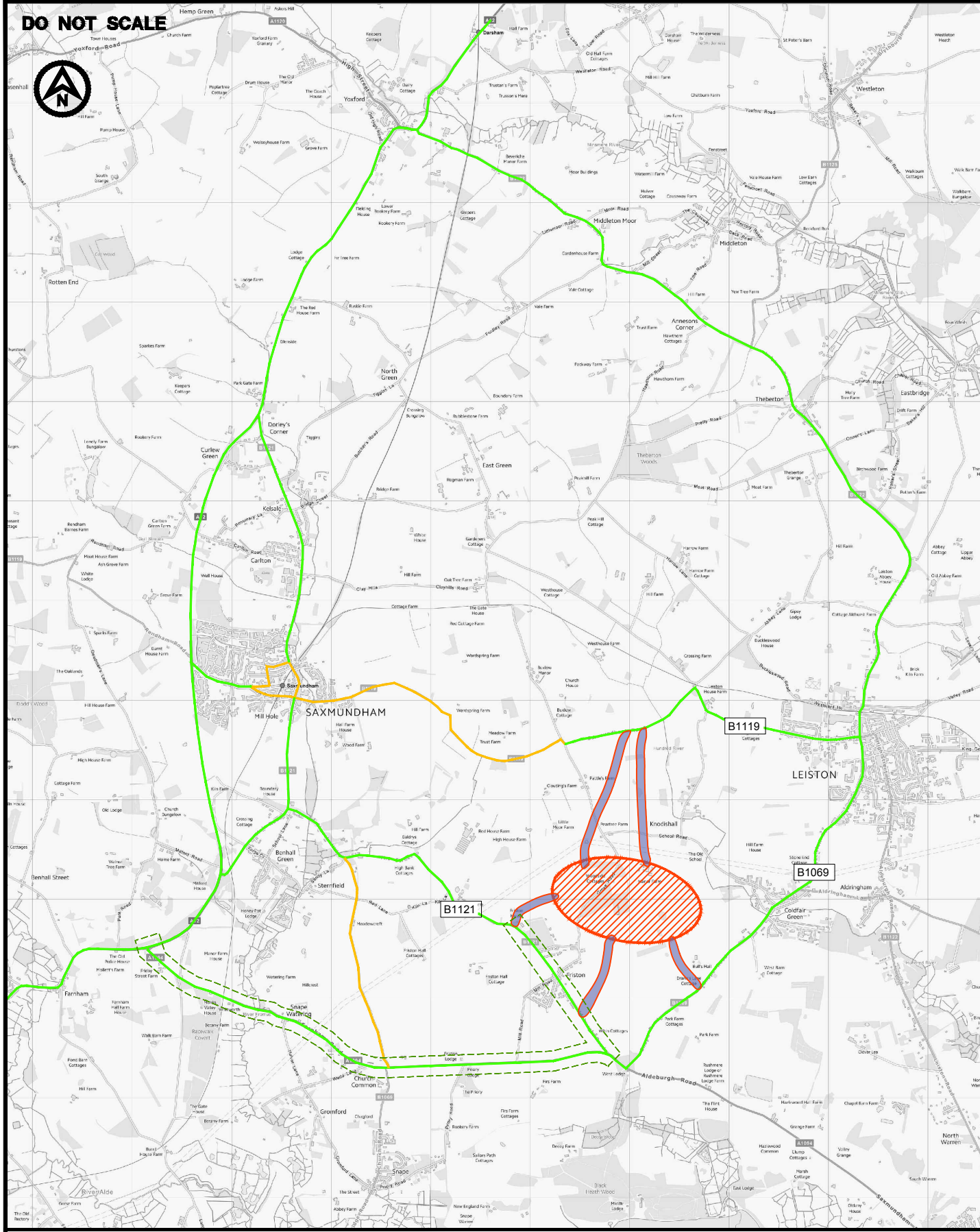


TITLE
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KEY	
ACCESSIBLE BY TWO HGVS	W1 SEARCH AREA
REQUIRES VERGE WIDENING TO ACCOMMODATE TWO HGVS	INDICATIVE ACCESS TRACK
POTENTIAL HAUL ROAD ROUTES	ROUTE 5
	ROUTE 6

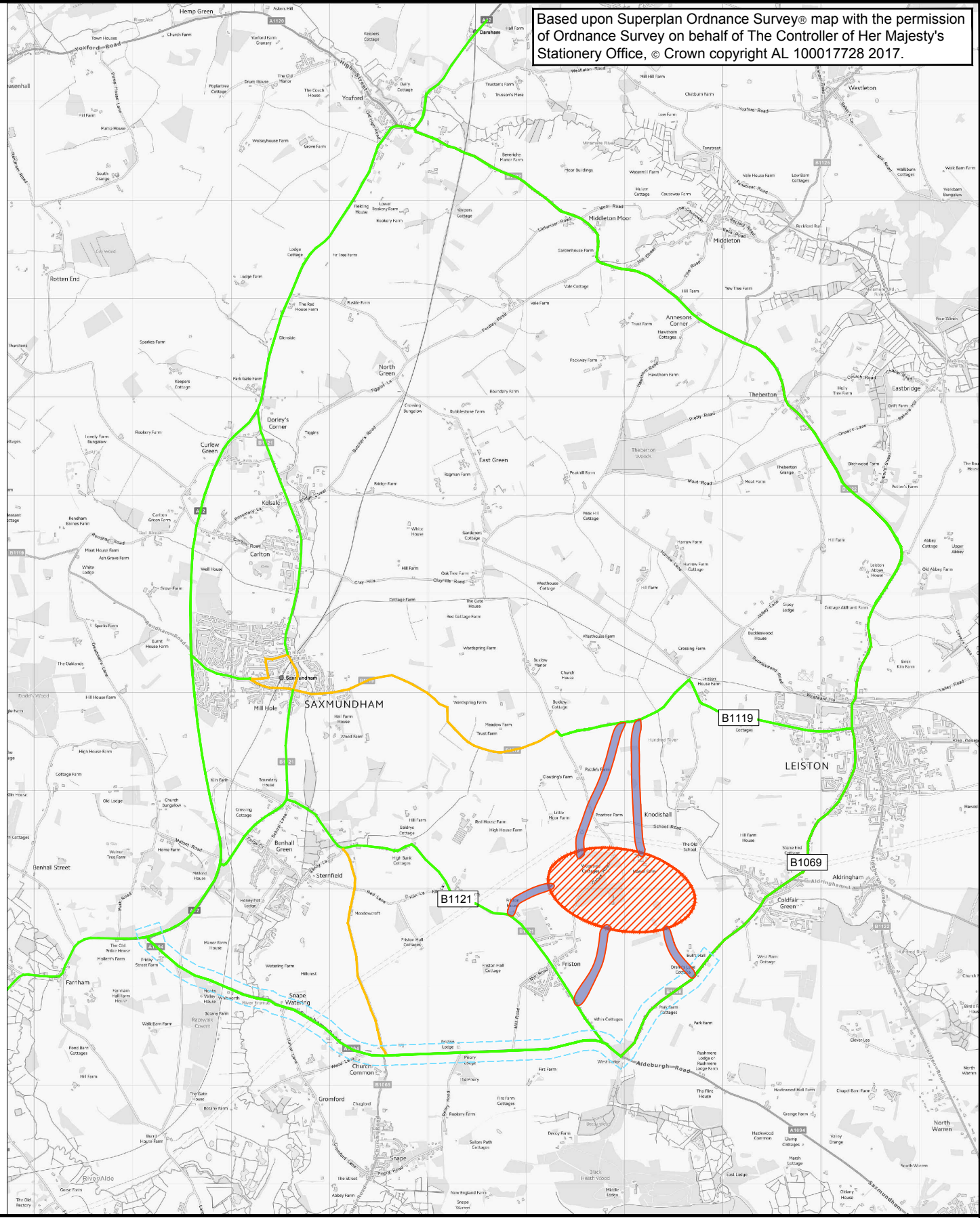
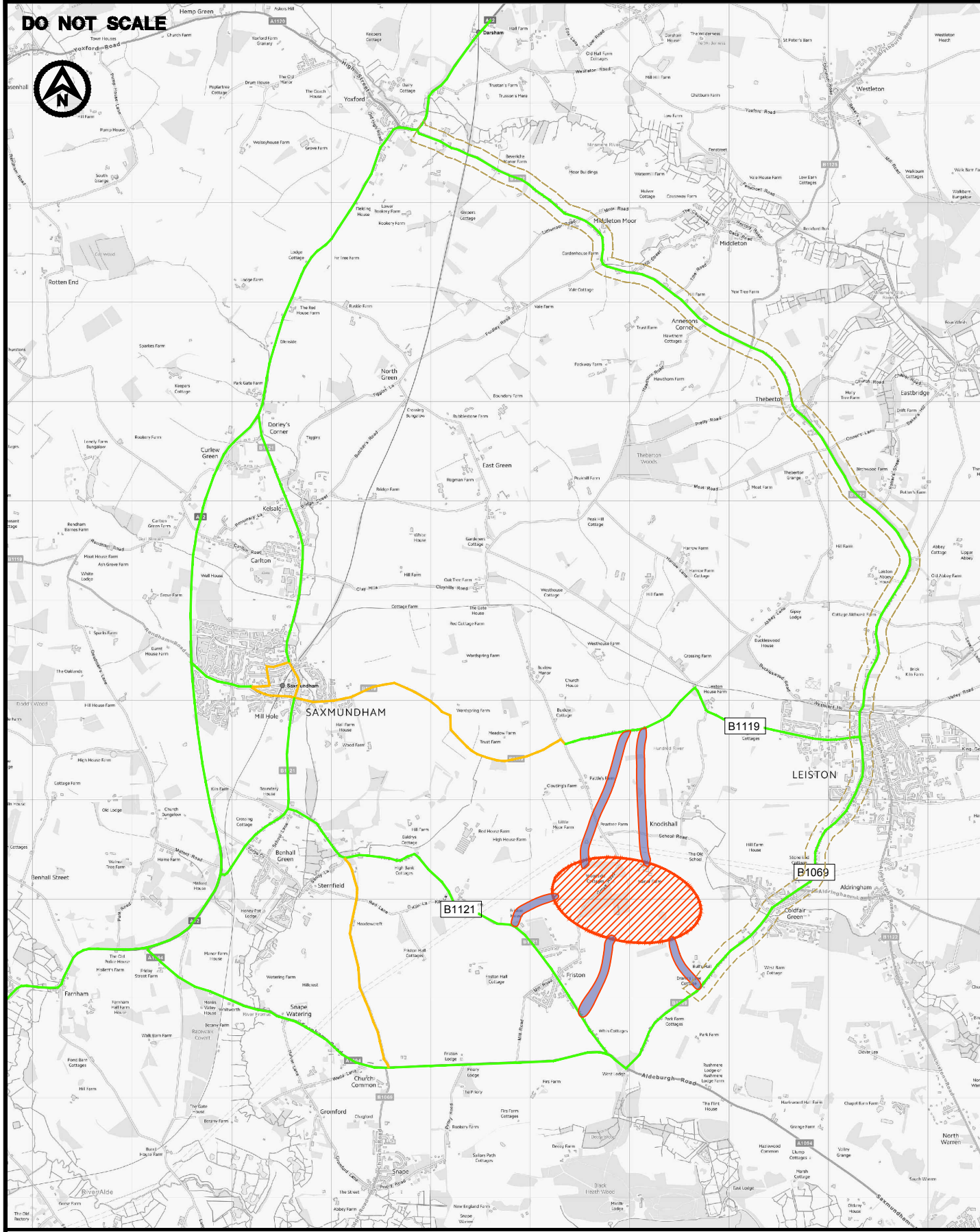
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TITLE
**EAST ANGLIA TWO
 POTENTIAL NEW ACCESS ROUTES**



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KEY	
ACCESSIBLE BY TWO HGVS	W1 SEARCH AREA
REQUIRES VERGE WIDENING TO ACCOMMODATE TWO HGVS	INDICATIVE ACCESS TRACK
POTENTIAL HAUL ROAD ROUTES	ROUTE 3
	ROUTE 4

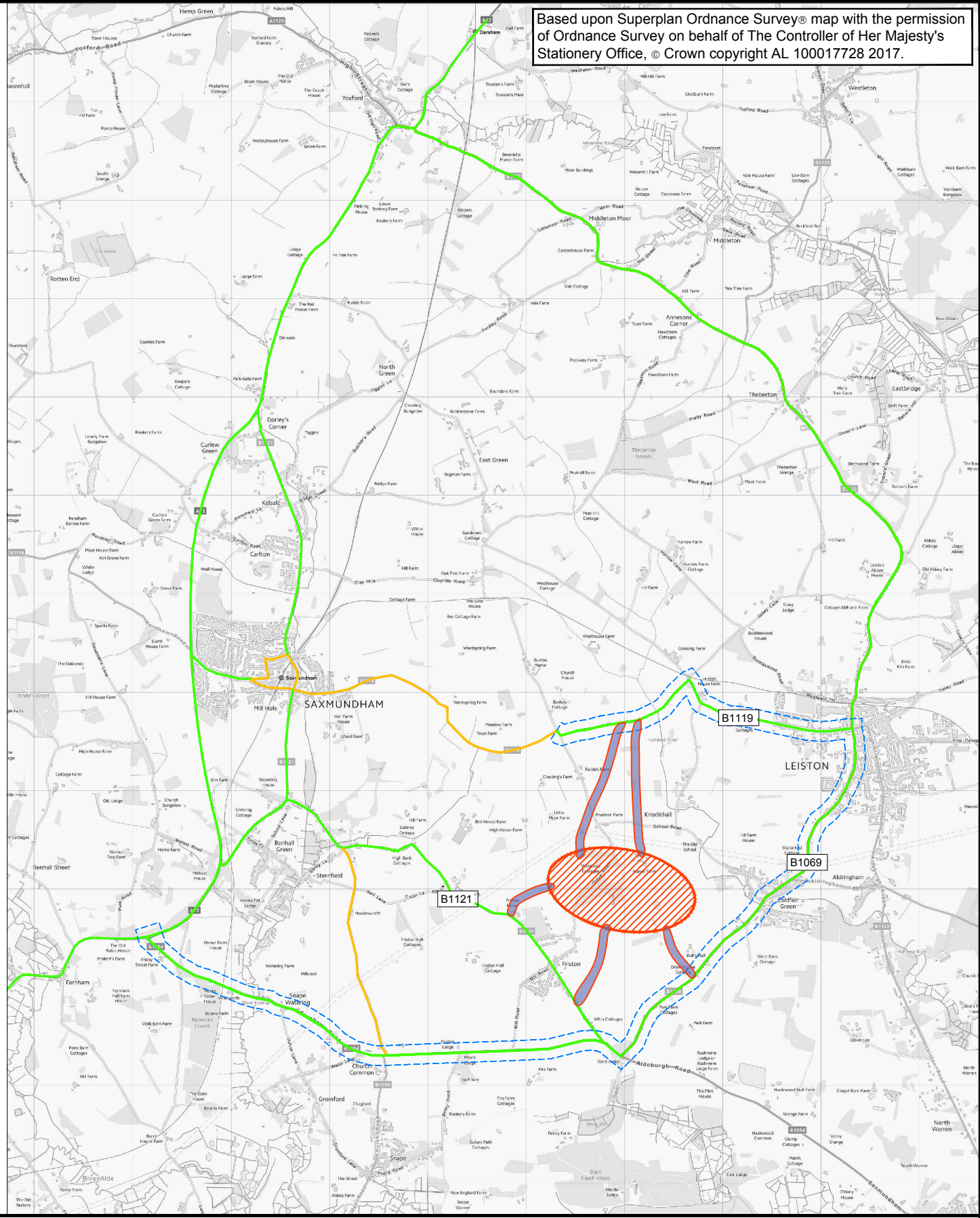
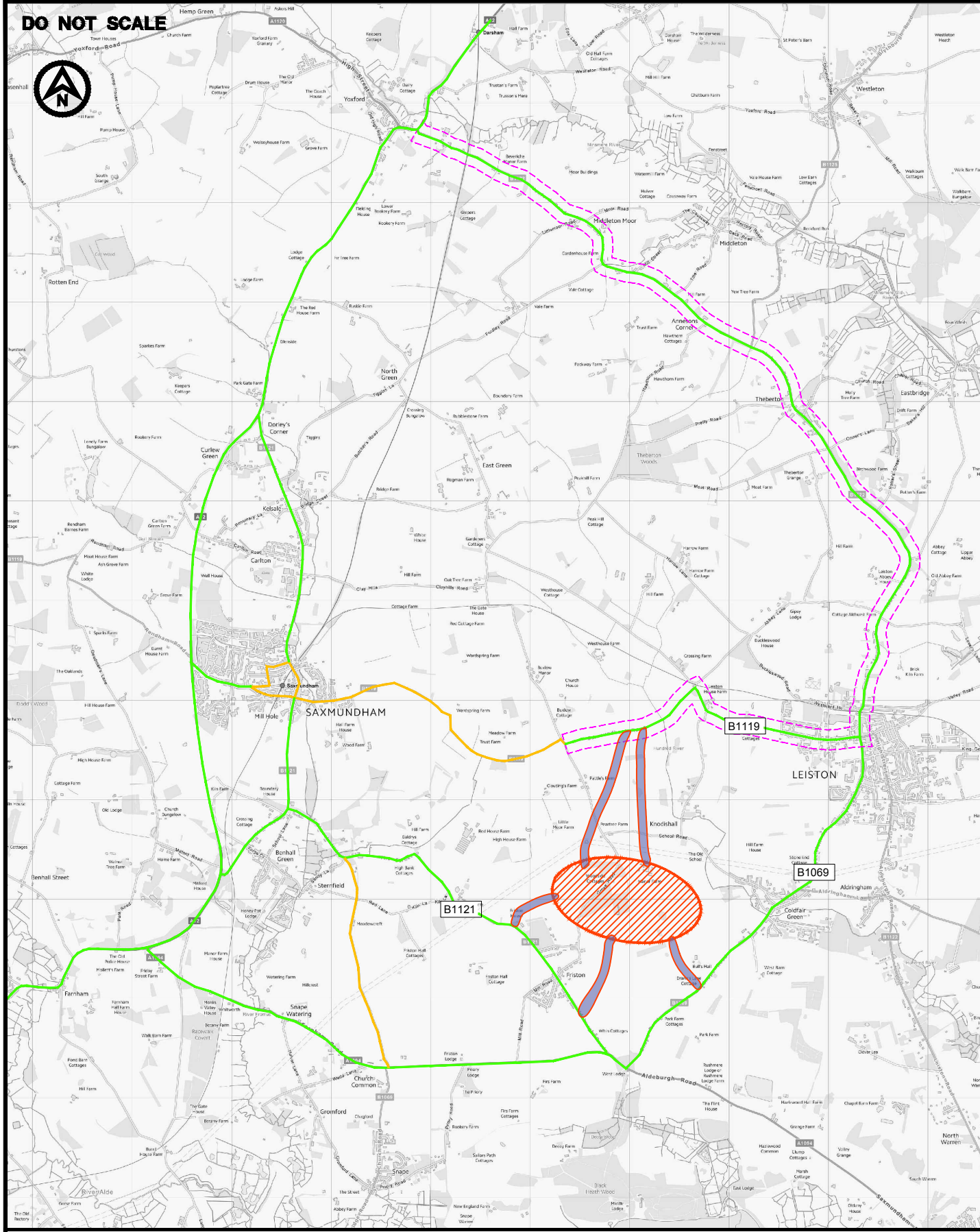
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**EAST ANGLIA TWO
 POTENTIAL NEW ACCESS ROUTES**



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KEY		ACCESSIBLE BY TWO HGVS	W1 SEARCH AREA	ROUTE 2
REQUIRES VERGE WIDENING TO ACCOMMODATE TWO HGVS	INDICATIVE ACCESS TRACK	POTENTIAL HAUL ROAD ROUTES	ROUTE 1	

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TITLE
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POTENTIAL NEW ACCESS ROUTES**

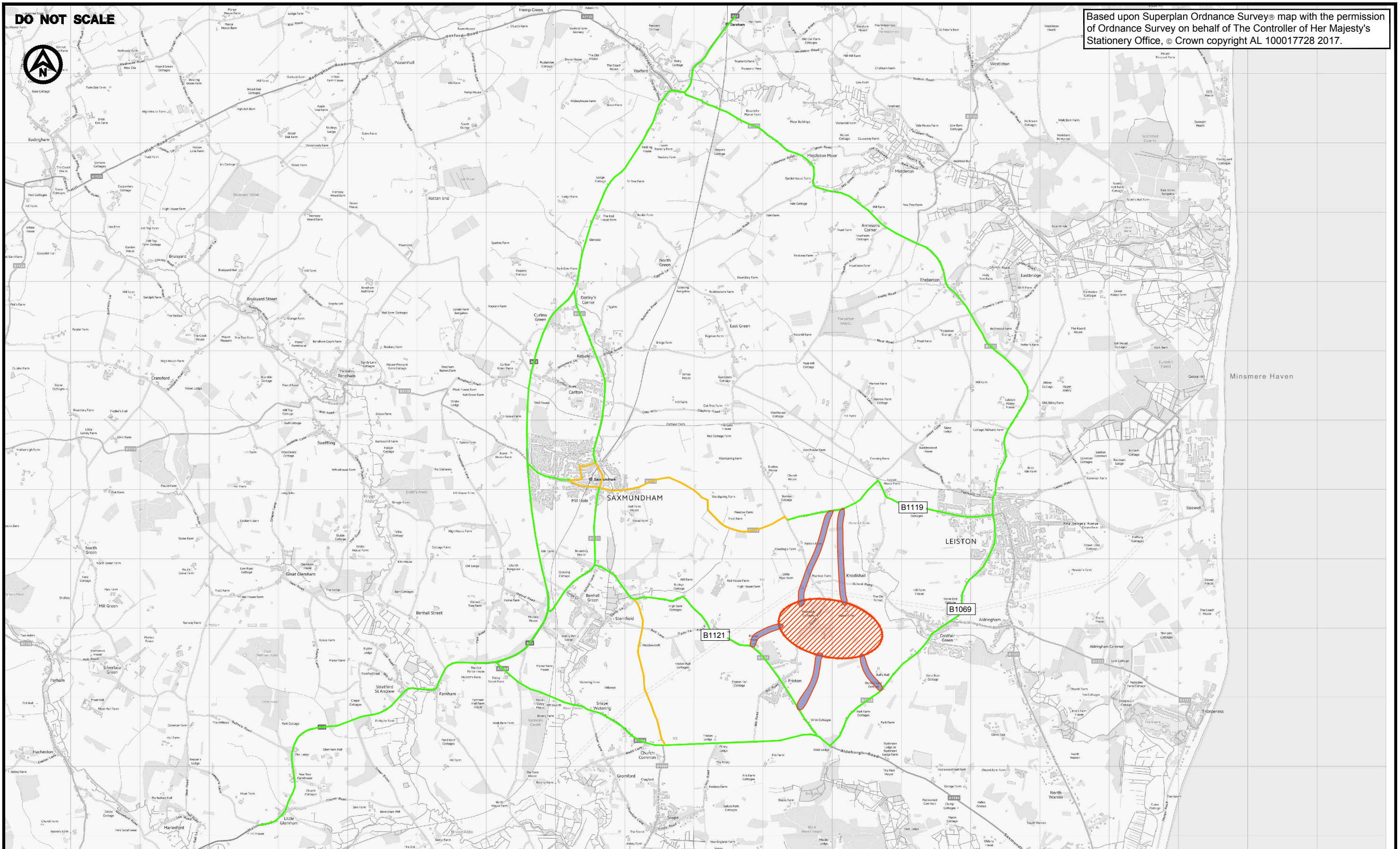


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KEY	ACCESSIBLE BY TWO HGVS	W1 SEARCH AREA
REQUIRES VERGE WIDENING TO ACCOMMODATE TWO HGVS	INDICATIVE ACCESS TRACK	
POTENTIAL HAUL ROAD ROUTES		



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POTENTIAL NEW ACCESS ROUTES**



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