CALEDONIA
Offshore Wind Farm

Code: UKCAL-CWF-CON-EIA-RPT-00007-7E52

Volume 7E Proposed Development (Onshore) Appendices

Appendix 9-1 Traffic Survey Report

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Volume 7E Appendix 9-1 Traffic Survey Report

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Table of Contents

Acronyms and Abbreviations v

1 Traffic Survey Report 1

1.1 Introduction 1

1.2 Background and Project Requirements 1

1.3 Traffic Survey Methodology and Specification 1

Survey Locations 1

1.3.2 Data Types 9

1.4 Traffic Survey Results 11

1.4.1 Result tables 11

1.5 Raw Survey Data 17

1.6 Summary 17

List of Figures

Figure 1-1: Traffic Survey Locations (2023) 4
Figure 1-2: Traffic Survey Locations (2023) 5
Figure 1-3: Traffic Survey Locations (2023) 6
Figure 1-4: Traffic Survey Locations (2023) 7
Figure 1-5: Traffic Survey Locations (2023) 8

List of Tables

Table 1-1: Traffic survey locations (2023) 2
Table 1-2: Traffic survey vehicle classification 10
Table 1-3: AADT traffic survey data (2023) 12
Table 1-4: AAWT traffic survey data (2023) 14
Table 1-5: Vehicle speed survey data (km/hr, 2-way) 16

Acronyms and Abbreviations

AADT	Annual Average Daily Traffic
AAWT	Annual Average Weekly Traffic
ATC	Automatic Traffic Count
EIAR	Environmental Impact Assessment Report
HGV	Heavy Goods Vehicle
LGV	Light Goods Vehicle
OGV	Other Goods Vehicle
T&T	Traffic and Transport

1 Traffic Survey Report

1.1 Introduction

1.1.1.1 This Appendix of the Environmental Impact Assessment Report (EIAR) summarises the results of a series of traffic surveys that were undertaken in October 2023 in support of the Traffic and Transport (T&T) assessment of the Proposed Development (Onshore). It identifies the survey specification and data outputs, the latter of which have been used as part of the main traffic assessment, as set out in Volume 5, Chapter 9: Traffic and Transport of the EIAR.

1.2 Background and Project Requirements

1.2.1.1 The survey sites within the T&T assessment were chosen in relation to the Onshore Transmission Infrastructure (OnTI) for the Proposed Development (Onshore), including the approximately 37km Onshore Export Cable Corridor, the Landfall Site, the Onshore Substation Site and the Onshore Grid Connection Export Cable Corridor. The locations of the survey sites were also informed by a consultation exercise with the transport officers of Aberdeenshire Council where a number of links across the local road network were identified as being of interest.

1.2.1.2 A total of 28 sites were subsequently identified, providing a detailed baseline of traffic flows and vehicle speeds.

1.2.1.3 The T&T assessment process, including methodology and results, are discussed within Volume 5, Chapter 9: Traffic and Transport of the EIAR. The purpose of this Appendix is simply to identify the traffic survey process and the present the resulting survey outputs.

1.3 Traffic Survey Methodology and Specification

Survey Locations

1.3.1.1 The local road network which was surveyed is bounded by the towns of Portsoy, Banff, Turriff and Cuminestown. This network includes a wide range of road categories, including primary 'A' roads, 'B' roads, as well as unclassified roads. As noted earlier in Section 1.2, the identification of the survey sites was partly informed by a consultation exercise with Aberdeenshire Council to identify what specific roads, or links, were of particular interest to the Aberdeenshire Council.

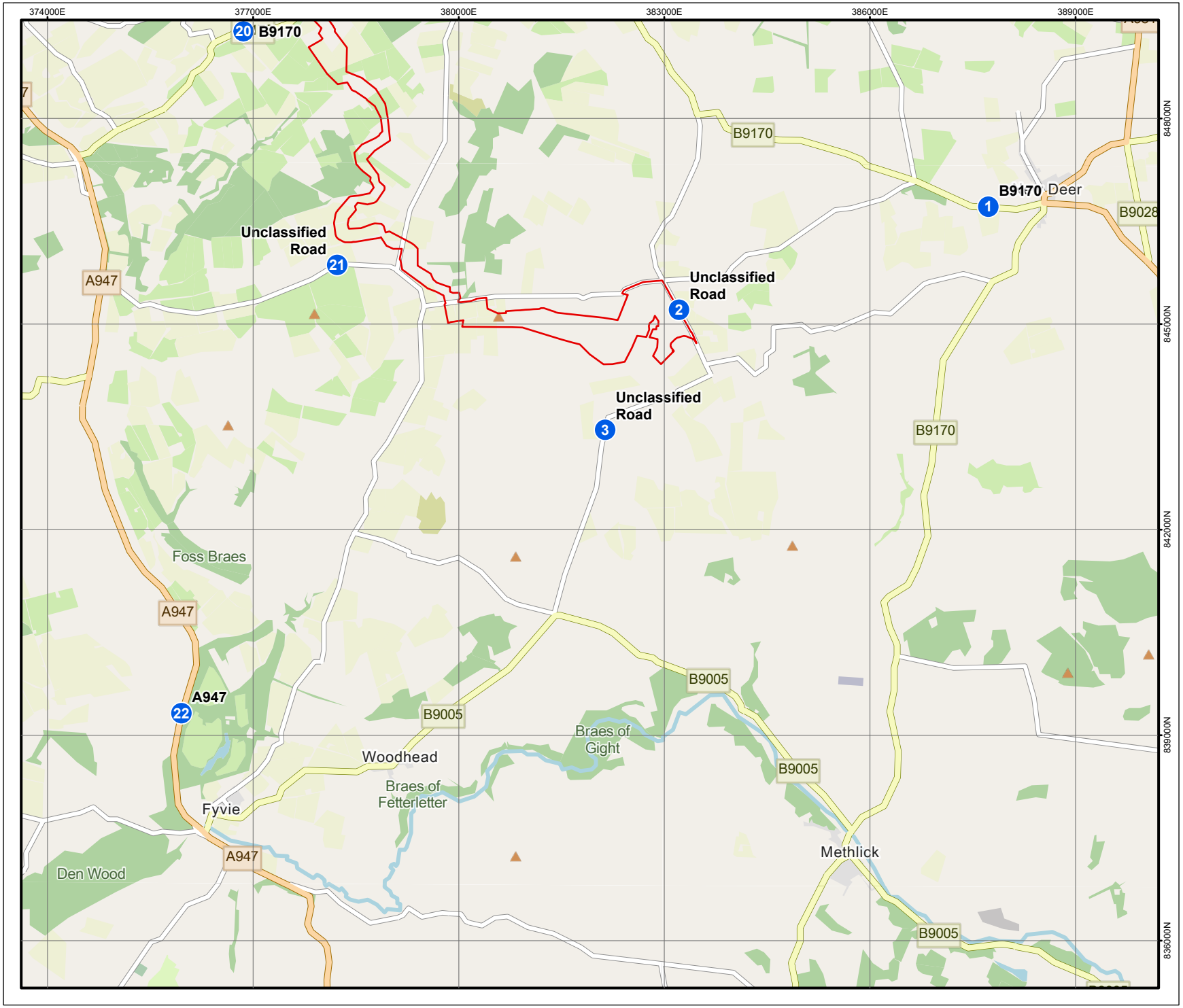
1.3.1.2 The potential location of the proposed construction site(s) and the location and routing to the access/egress points into these construction sites was also used to help inform the survey points.

1.3.1.3 A total of 28 count sites were subsequently identified, as listed in Table 1-1 and illustrated in Figure 1-1 to Figure 1-5.

Table 1-1: Traffic survey locations (2023)

Site ID	Location	Geographic Co-ordinates	
		X	Y
1	B9170	57.510417	-2.206505
2	Unclassified Road	57.496762	-2.281719
3	Unclassified Road	57.480986	-2.299568
4	A97	57.632567	-2.564343
5	A97	57.589433	-2.620063
6	A98	57.66147	-2.588226
7	A95	57.642645	-2.649372
8	A98	57.65091	-2.649948
9	B9139	57.670554	-2.59278
10	B9139	57.671738	-2.624901
11	A98	57.6659	-2.556854
12	A947	57.614716	-2.478664
13	A947	57.541684	-2.450997
14	B9170	57.542004	-2.332636
15	A947	57.575655	-2.443885
16	B9022	57.662689	-2.695659
17	A95	57.588687	-2.738838

Site ID	Location	Geographic Co-ordinates	
		X	Y
18	Unclassified Road	57.548436	-2.431325
19	B9105	57.591779	-2.367691
20	B9170	57.532978	-2.38813
21	Unclassified Road	57.500011	-2.373446
22	A947	57.448281	-2.399572
23	A98	57.677448	-2.702251
24	B9121	57.602063	-2.538978
25	A98	57.646523	-2.421676
26	B9031	57.662911	-2.435124
27	B9025	57.569602	-2.582494
28	A97	57.496057	-2.677356



Onshore Transmission Infrastructure Red Line Boundary

1 Traffic Survey Location

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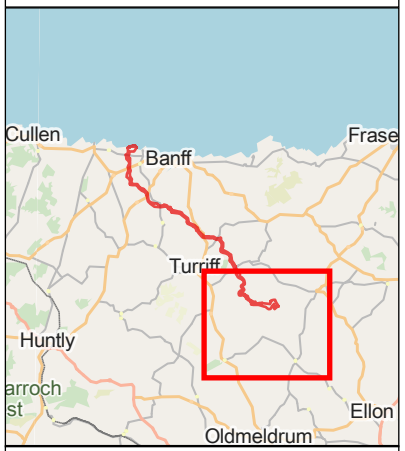

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Figure 1-1: Traffic Survey Locations (2023)

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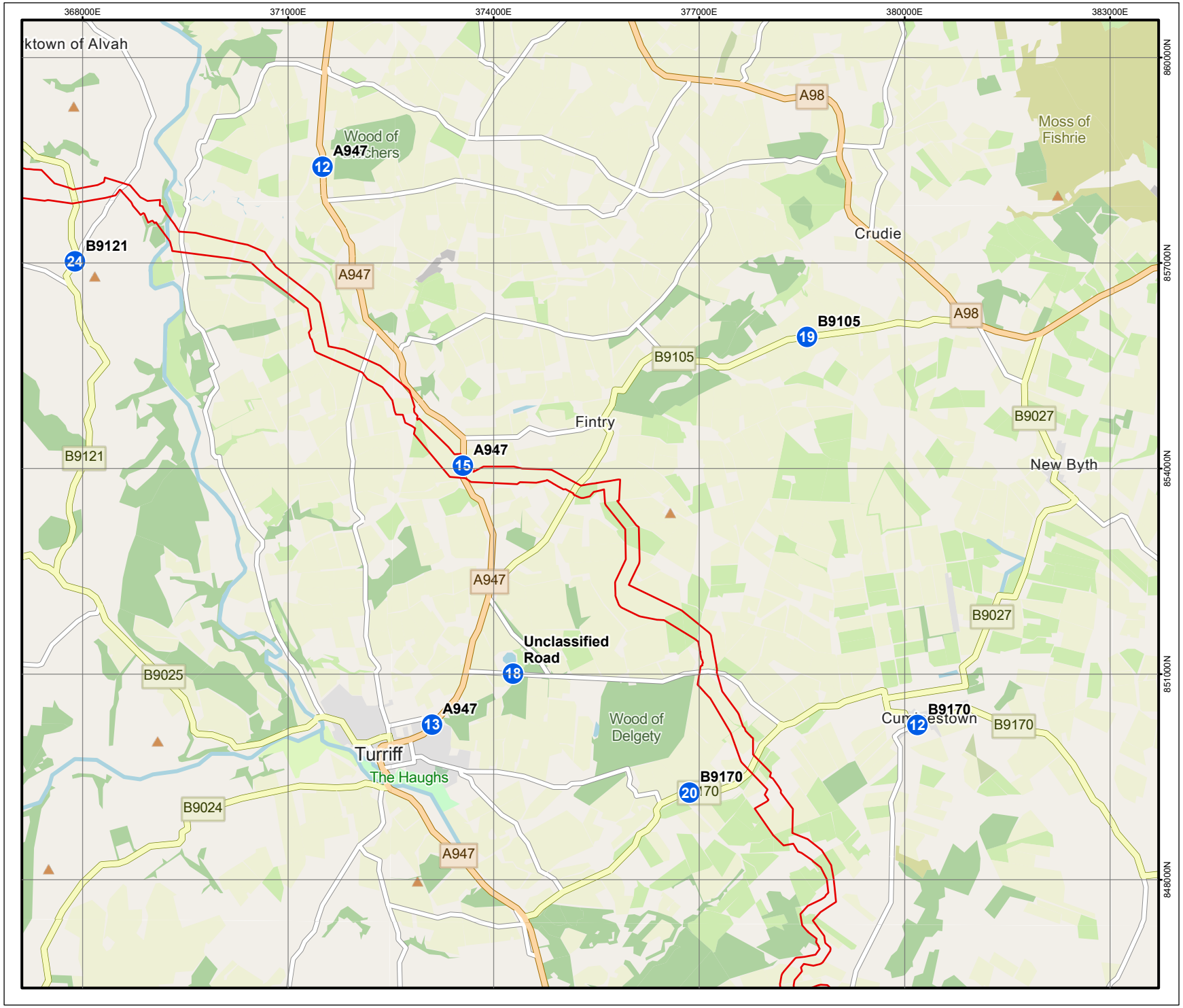

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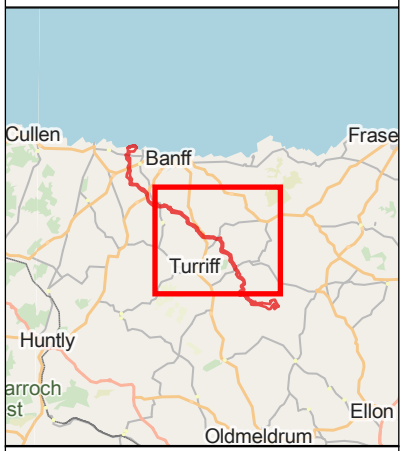

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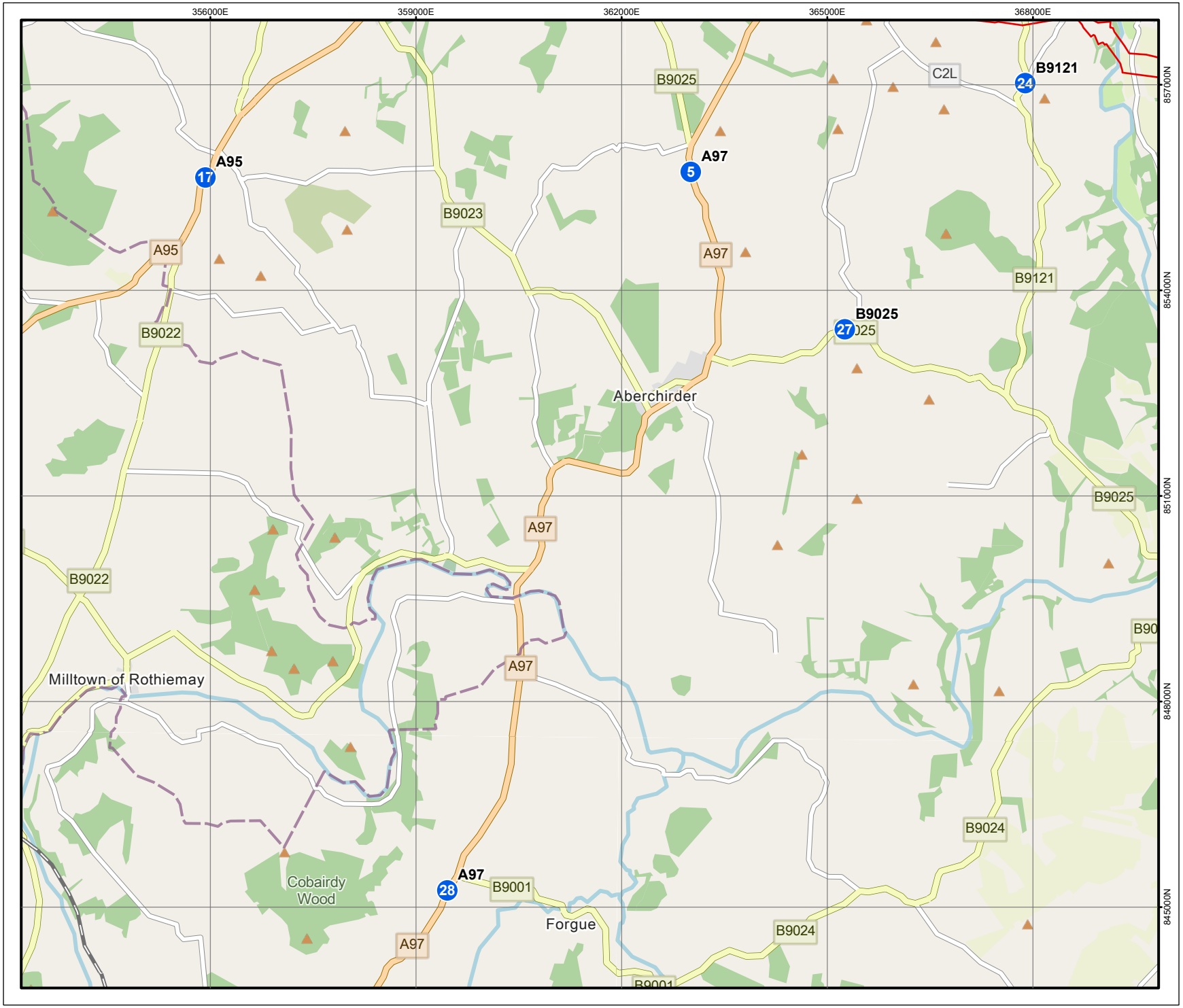

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1 Traffic Survey Location

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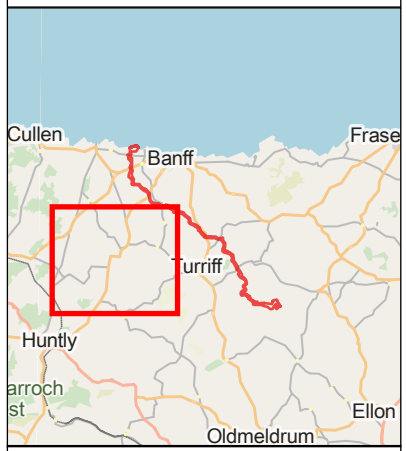

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Figure 1-3:
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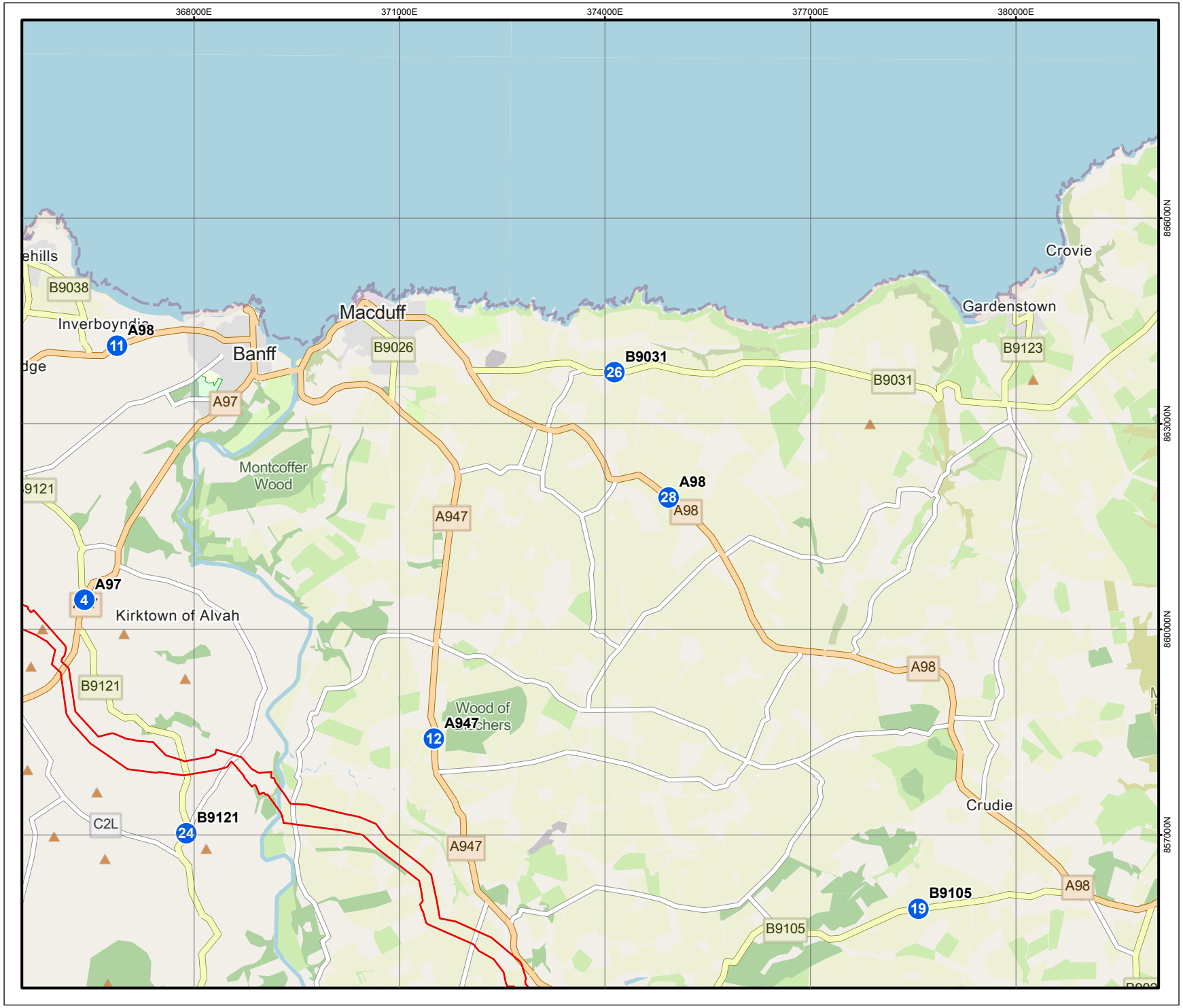

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1 Traffic Survey Location

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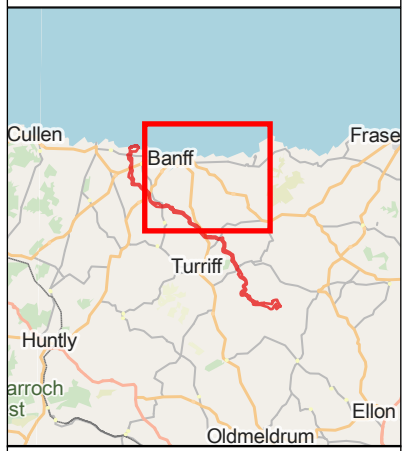

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Figure 1-4: Traffic Survey Locations (2023)

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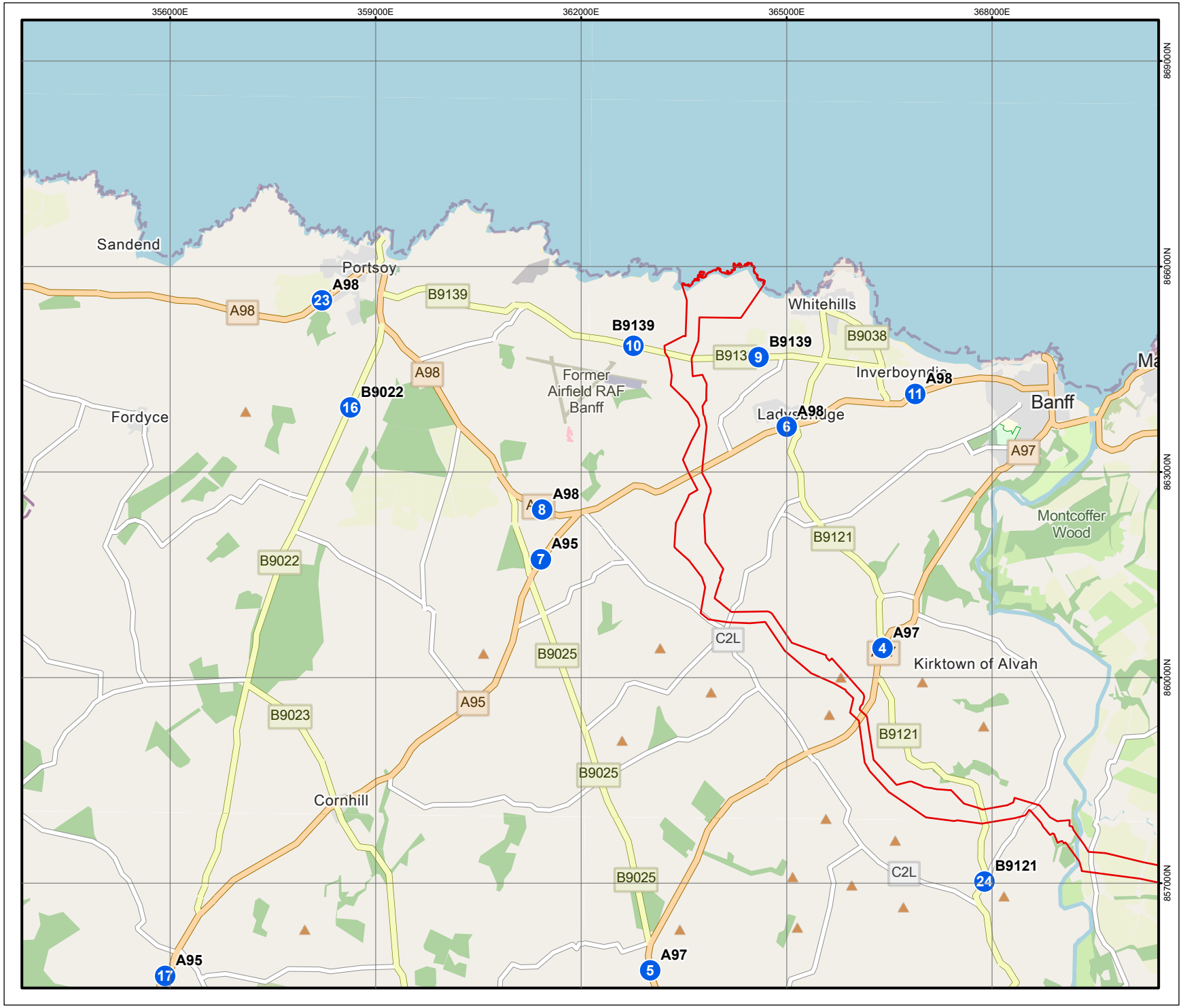

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1 Traffic Survey Location

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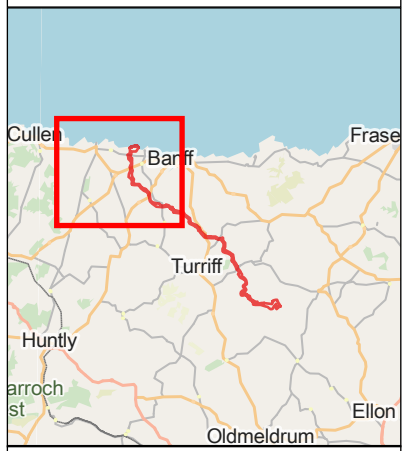

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CONTRACTOR REV: 04

GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)

DRAWING TITLE

Figure 1-5:
Traffic Survey Locations (2023)

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1.3.2 Data Types

1.3.2.1 Two key data types were collected through the survey process:

- Hourly, classified, directional vehicle counts. This data was collected over a continuous two-week period between Monday 2nd October 2023 and Sunday 15th October 2023 (i.e. 14 days); and
- Vehicle speed data, collected on an hourly basis over the same time period as the vehicle counts.

1.3.2.2 The traffic flows were collected in accordance with the vehicle classifications identified in Table 1-2. This data was then refined and grouped together in accordance with the following:

- Cars and Light Goods Vehicles (LGVs); and
- Other Goods Vehicle 1 (OGV1) / Other Goods Vehicle 2 (OGV2), and buses / coaches.

1.3.2.3 OGV1 refers to two or three axle units without a trailer (i.e. a 'tipper' style lorry, often used on construction sites). OGV2 refers to all rigid Heavy Goods Vehicles (HGV) with four or more axles, as well as all articulated vehicles.

Table 1-2: Traffic survey vehicle classification

Axles	Groups	Description	Class		Parameters	Dominant Vehicle	Aggregate
2	1 or 2	Very Short - Bicycle or Motorcycle	MC	1	d(1)<1.7m & axles=2	-	1 (Light / LGV)
2	1 or 2	Short - Sedan, Wagon, 4WD, Utility, Light Van	SV	2	d(1)>=1.7m, d(1)<=3.2m & axles=2		
3, 4 or 5	3	Short Towing - Trailer, Caravan, Boat, etc.	SVT	3	groups=3, d(1)>=2.1m, d(1)<=3.2m, d(2)>=2.1m & axles=3,4,5		
2	2	Two axle truck or Bus	TB2	4	d(1)>3.2m & axles=2		2 (Medium / OGV1)
3	2	Three axle truck or Bus	TB3	5	axles=3 & groups=2		
>3	2	Four axle truck	T4	6	axles>3 & groups=2		
3	3	Three axle articulated vehicle or Rigid vehicle and trailer	ART3	7	d(1)>3.2m, axles=3 & groups=3		3 (Heavy / OGV2)
4	>2	Four axle articulated vehicle or Rigid vehicle and trailer	ART4	8	d(2)<2.1m or d(1)<2.1m or d(1)>3.2m axles = 4 & groups>2		
5	>2	Five axle articulated vehicle or Rigid vehicle and trailer	ART5	9	d(2)<2.1m or d(1)<2.1m or d(1)>3.2m axles=5 & groups>2		
>=6	>2	Six (or more) axle articulated vehicle or Rigid vehicle and trailer	ART6	10	axles=6 & groups>2 or axles>6 & groups=3		
>6	4	B-Double or Heavy truck and trailer	BD	11	groups=4 & axles>6		
>6	>=5	Double or triple road train or Heavy truck and two (or more) trailers	DRT	12	groups>=5 & axles>6		

1.3.2.4 The T&T assessment, as set out within Volume 5, Chapter 9: Traffic and Transport, requires the raw survey data to be cleaned and presented as Annual Average Daily Traffic (AADT) flows and Annual Average Weekly Traffic (AAWT) flows. The former provides an average of the daily 24hr flow across a full 7 day week. Both directions are combined to produce the final AADT value (i.e. it is presented as a two-way flow). The AAWT data is similar with the exception that it only includes weekday traffic (i.e. 5 days, Monday to Friday).

1.3.2.5 AAWT data is used to inform the noise assessment within Volume 5, Chapter 8: Airbourne Noise and Vibration, therefore this data was further refined into 18hr flows (06:00 and 24:00).

1.4 Traffic Survey Results

1.4.1 Result tables

1.4.1.1 Table 1-3 and Table 1-4 summarise the AADT and AAWT survey data, respectively. Note, due to a broken ATC and cable damage, data for site ID13 was only collected across the first week rather than the full two weeks. The traffic surveys were commissioned for two weeks to increase the likelihood of retaining a full weeks records and as a caution against any instances whereby data could not be successfully retained. As a full week of traffic survey results was obtained the quality of the data can be assumed to be unaffected.

1.4.1.2 Table 1-5 summarises the vehicle speed data.

Table 1-3: AADT traffic survey data (2023)

Site ID	Location	Week 1 Vehicle Type		Week 2 Vehicle Type	
		Car / LGV	OGV1 / OGV2 / Bus	Car/LGV	OGV1/ OGV2/Bus
1	B9170	1,575	329	1,602	311
2	Unclassified Road	268	59	295	59
3	Unclassified Road	200	36	211	43
4	A97	1,019	138	1,051	150
5	A97	1,291	193	1,329	204
6	A98	3,916	772	4,069	646
7	A95	1136	227	1,281	204
8	A98	3,132	631	3,299	605
9	B9139	176	68	197	51
10	B9139	165	47	185	29
11	A98	6,165	912	6,651	885
12	A947	3,102	537	3,262	533
13	A947	7,269	552	N/A	N/A
14	B9170	1,030	168	1,123	148
15	A947	3,090	508	3,246	744
16	B9022	661	122	684	129
17	A95	2,257	407	2,547	322

Site ID	Location	Week 1 Vehicle Type		Week 2 Vehicle Type	
		Car / LGV	OGV1 / OGV2 / Bus	Car/LGV	OGV1/ OGV2/Bus
18	Unclassified Road	1,444	216	1,564	212
19	B9105	951	189	1,035	203
20	B9170	488	95	522	91
21	Unclassified Road	285	47	313	43
22	A947	4,120	709	4,317	696
23	A98	3,744	674	3,63	659
24	B9121	159	21	181	24
25	A98	2,454	453	2,588	417
26	B9031	814	109	890	119
27	B9025	1,511	234	1,637	193
28	A97	1,297	281	1,326	877
Notes: N/A = no survey data available					

Table 1-4: AAWT traffic survey data (2023)

Site ID	Location	Week 1 Vehicle Type		Week 2 Vehicle Type	
		Car/ LGV	OGV1/ OGV2/ Bus	Car/ LGV	OGV1/ OGV2/ Bus
1	B9170	1,717	389	1,710	385
2	Unclassified Road	295	72	310	69
3	Unclassified Road	212	43	221	52
4	A97	1,051	168	1,232	184
5	A97	1,329	233	1,477	205
6	A98	4,069	899	3,443	760
7	A95	1,281	279	1,118	242
8	A98	3,299	744	3,267	721
9	B9139	197	88	207	63
10	B9139	185	60	177	33
11	A98	6,651	1,092	6,628	1,044
12	A947	3,262	642	3,225	635
13	A947	6,718	488	N/A	N/A
14	B9170	1,122	193	1,101	179
15	A947	3,246	615	3,212	606
16	B9022	685	141	701	143
17	A95	2,548	475	1,779	348

Site ID	Location	Week 1 Vehicle Type		Week 2 Vehicle Type	
		Car/ LGV	OGV1/ OGV2/ Bus	Car/ LGV	OGV1/ OGV2/ Bus
18	Unclassified Road	1,564	256	1,559	257
19	B9105	1,035	236	1,073	258
20	B9170	522	119	539	205
21	Unclassified Road	313	56	305	52
22	A947	4,318	849	4,188	824
23	A98	3,963	782	3,826	775
24	B9121	181	24	184	26
25	A98	2,589	554	2,458	101
26	B9031	889	133	1,588	148
27	B9025	1,637	288	1,544	236
28	A97	1,326	333	1,692	389

Notes:

N/A = full set of survey results not available

Table 1-5: Vehicle speed survey data (km/hr, 2-way)

Site ID	Location	Mean Speed		85%'ile Speed	
		Week 1	Week 2	Week 1	Week 2
1	B9170	49.7	49.8	58.2	58.5
2	Unclassified Road	45.7	45.8	55.8	56.0
3	Unclassified Road	40.9	40.5	49.2	49.7
4	A97	48.8	49.4	57.4	57.8
5	A97	50.3	51.1	58.6	59.3
6	A98	51.8	51.9	59.4	59.6
7	A95	50.7	51.6	59.4	59.7
8	A98	55.5	56.0	62.1	62.7
9	B9139	40.2	40.3	50.2	51.2
10	B9139	45.5	45.3	55.1	55.6
11	A98	45.3	45.3	51.2	51.1
12	A947	53.1	53.6	60.1	60.3
13	A947	31.5	32.6 * over 2.5 days	36.5	37.5 * over 2.5 days
14	B9170	24.3	24.5	29.0	29.3
15	A947	47.8	48.3	54.1	54.6
16	B9022	55.2	56.0	64.6	65.2
17	A95	45.2	46.2	50.8	52.1

Site ID	Location	Mean Speed		85%'ile Speed	
		Week 1	Week 2	Week 1	Week 2
18	Unclassified Road	50.7	50.9	58.8	59.1
19	B9105	51.7	50.2	59.3	58.2
20	B9170	40.0	40.1	46.6	46.3
21	Unclassified Road	44.8	45.5	53.0	54.0
22	A947	52.5	53.0	59.5	59.7
23	A98	47.8	47.9	54.6	54.5
24	B9121	42.4	42.8	48.9	49.2
25	A98	53.1	53.1	60.3	60.6
26	B9031	48.9	49.2	57.7	57.4
27	B9025	48.9	48.6	55.5	55.3
28	A97	48.4	49.9	56.5	58.0

1.5 Raw Survey Data

1.5.1.1 The large quantity of raw survey data is such that the full dataset has not been included within this document and, instead, is available electronically upon request.

1.6 Summary

1.6.1.1 This Appendix 9-1 Traffic Survey Report presents the survey data which was collected in October 2023 and used as the basis of the T&T assessment for the Proposed Development. Details of this data, including the survey specification, data types, survey locations and summarised outputs are presented as a factual record.

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