

High Speed Two Phase 2a (West Midlands - Crewe)

Background information and data

Transport Assessment baseline survey data used in the Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement (BID-TR-001-000)

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Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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A report prepared for High Speed Two (HS2) Limited:

ARUP



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1 Introduction

- 1.1.1 This document sets out Background Information and Data (BID) that accompanies the High Speed Two (HS2) Phase 2a (West Midlands - Crewe) Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES)¹.
- 1.1.2 This document summarises the additional transport surveys undertaken for the following community areas (CA) defined along the proposed HS2 Phase 2a route (the AP2 revised scheme). These areas are shown in Figure 1 and comprise:
- CA1: Fradley to Colton;
 - CA2: Colwich to Yarlet;
 - CA3: Stone and Swynnerton;
 - CA4: Whitmore Heath to Madeley; and
 - CA5: South Cheshire.
- 1.1.3 Transport surveys have been undertaken to obtain additional baseline data for the AP2 revised scheme as part of the Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES), which includes the Transport Assessment (TA) (see SES2 and AP2 ES Volume 5: Appendix TR-001-000). Surveys were undertaken in 2016 (sourced from the local highway authority), 2017 and 2018, and details of these surveys are outlined in the following sections.
- 1.1.4 This document follows the submission of the High Speed Two Phase 2a (West Midlands - Crewe) Transport Assessment baseline survey report (BID TR-001-000)², which provided details on surveys undertaken for the five community areas in 2015, 2016 and 2017, and was developed to inform the Transport Assessment that was included in the High Speed Two (HS2) Phase 2a (West Midlands - Crewe) Environmental Statement (ES)³.

¹ HS2 Ltd (2019), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement*, <https://www.gov.uk/government/organisations/high-speed-two-limited>

² HS2 Ltd (2017), *HS2 Phase 2a (West Midlands - Crewe) Background Information and Data, Traffic and transport, Transport Assessment baseline survey report*, (BID TR-001-000), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/627491/E63_BID-TR-001-000_WEB.pdf

³ HS2 Ltd (2017), *HS2 Phase 2a (West Midlands - Crewe) Environmental Statement*, <https://www.gov.uk/government/collections/hs2-phase-2a-environmental-statement>

2 Traffic surveys

2.1 Introduction

2.1.1 The traffic surveys were undertaken in December 2016 - March 2017, April - May 2017, June 2017, and January, June, September and October 2018. These surveys comprised:

- automatic traffic counts (ATC) on highway links;
- manual classified counts (MCC) at highway junctions; and
- queue length (QL) surveys at highway junctions.

2.1.2 The traffic survey data has been further supplemented by traffic and transport data obtained from Staffordshire County Council and Shropshire County Council.

2.2 Automatic traffic counts

2.2.1 The scope of the ATC surveys carried out by HS2 is outlined in Table 1.

Table 1: Automatic traffic count survey scope

Automatic traffic count survey scope	
Site locations	For details of the locations of the ATC surveys undertaken, see Section 4.
Date carried out	Dates in December 2016 – March 2017, April – May 2017, June 2017, June 2018, August 2018, September 2018 and October 2018, excluding Public Holidays and school holiday periods except August 2018 surveys.
Survey duration	Generally continuous 24-hours, for a one or two-week period.
Approvals and inspection	Relevant highway authorities were informed of all surveys carried out. All ATC equipment was inspected after installation, with regular monitoring thereafter and equipment was repaired or replaced immediately if found to be malfunctioning.
Data obtained	Counts recorded in 15-minute time intervals by vehicle classification, as well as by total vehicles, with sub-total for every hour. Totals for 12- (07:00 - 19:00), 16- (06:00 - 22:00), 18- (06:00 - 00:00) and 24-hours for each day by vehicle classification, as well as by total vehicles. Average vehicle speed data by vehicle classification by hour and by 12- (07:00 - 19:00), 16- (06:00 - 22:00), 18- (06:00 - 00:00) and 24-hours for each day.
Classification	Classification as consistent as possible with that used by DfT for fixed traffic count points on the UK main network profile.
Site information recorded	Weather conditions and any other observed events, which could affect the survey recorded.
Data verification	Data checked against nearby MCC.

2.3 Manual classified counts

2.3.1 The scope of the MCC surveys carried out by HS2 at junctions is outlined in Table 2.

Table 2: Manual classified count survey scope

Manual classified count survey scope	
Site locations	For details of the locations of the MCC surveys undertaken, see Section 4.
Date carried out	Dates in January 2018, June 2018, and September 2018, excluding Public Holidays and school holiday periods.
Survey duration	One weekday (generally Tuesday, Wednesday or Thursday). Video cameras were installed to record between 07:00 - 19:00. Counts were between 07:00 - 10:00 and 16:00 - 19:00.
Approvals and inspection	Relevant highway authority informed of all surveys carried out.
Data obtained	Counts were recorded in 15-minute time intervals for every arm of the junction, by vehicle classification, as well as by total vehicles and total Passenger Car Units (PCU) with sub-totals for every hour. PCU were calculated using factors as shown in Table 3. Pedestrian crossing flows for each arm of the junction at 15-minute survey intervals. At signalised junctions this data was reported per cycle. Pedestrian classification: adult (16+ years) and child assumed.
Classification	Full vehicle classification, consistent with Transport in the Urban Environment, published in 1997 by The Institute of Highways and Transportation ⁴ , as shown in Figure 1.
Site information recorded	Weather conditions and any other observed events, which could affect the survey recorded.
Data verification	Total number of vehicles entering and exiting every arm of each junction for each hour were compared to ensure data accuracy.

⁴ The Institute of Highways and Transportation (1997), *Transport in the Urban Environment*, Mayhew McCrimmon Printers Ltd, England

Figure 1: Vehicle classification

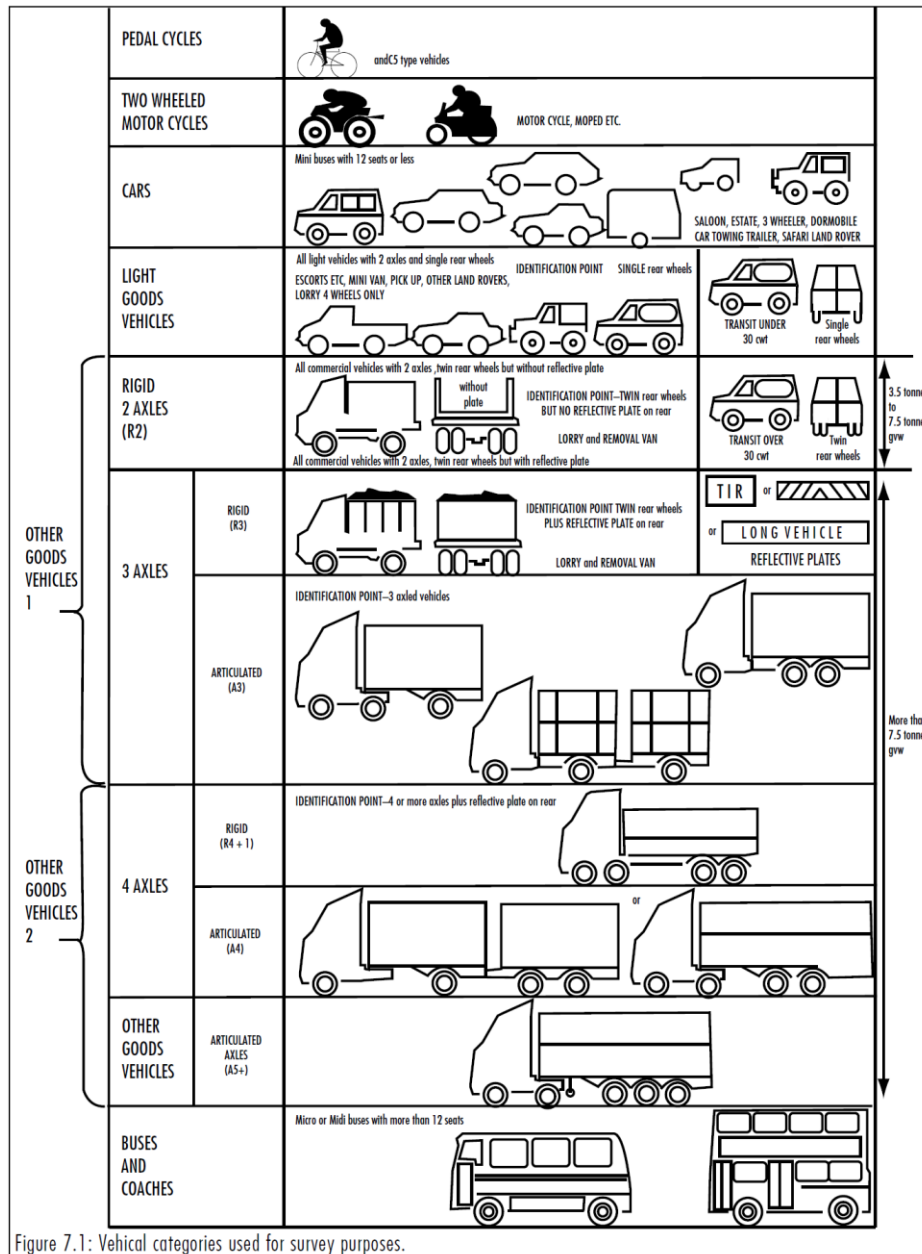


Figure 7.1: Vehical categories used for survey purposes.

Table 3: Vehicle classification

Vehicle classification	PCU equivalent
Car or Light Goods Vehicle (LGV)	1.0
Medium Goods Vehicle (MGV)	1.5
Heavy Goods Vehicle (HGV)	2.3
Bus and coach	2.0
Two wheeled motorcycle	0.4
Pedal cycle	0.2

2.4 Queue length surveys

2.4.1 The scope of the QL surveys carried out at junctions is outlined in Table 4.

Table 4: Queue length survey scope

Queue length survey scope	
Site locations	For details of the locations of the queue length surveys undertaken, see Section 4.
Date carried out	Dates in June 2018 and September 2018, excluding Public Holidays and school holiday periods.
Survey duration	One weekday (generally Tuesday, Wednesday or Thursday), between 07:00-10:00 and 16:00 - 19:00.
Approvals and inspection	Relevant highway authority informed of all surveys carried out.
Data obtained	The maximum queue length was recorded at 5-minute intervals on each arm of priority junctions and roundabouts. Where queue data was collected by video a count of queuing vehicles (by lane) was made and converted to length in metres with a conversion factor of 6m per PCU. At signal-controlled junctions the maximum queue was recorded for each arm of the junction (i.e. just before the signal switches from red to green).
Classification	Length of queue in metres.
Site information recorded	Weather conditions and any other observed events which could affect the survey results.
Data verification	Queue lengths checked against video footage, where available.

3 Non-motorised user surveys

3.1 Introduction

3.1.1 The non-motorised user surveys were undertaken in August 2018, to establish the use of Public Rights of Way (PRoW) affected by the AP2 revised scheme. The surveys included roads, footpaths and bridleways potentially affected by the AP2 revised scheme.

3.2 Public rights of way

3.2.1 The scope of the PRoW surveys carried out is outlined in Table 5.

Table 5: Public rights of way survey scope

Public rights of way survey scope	
Site locations	For details of the locations of the PRoW surveys undertaken, refer to Section 5.
Date carried out	<p>Dates in August 2018.</p> <p>Surveys were carried out on a weekend to capture leisure users. Surveys were generally undertaken during the summer holidays in order to record maximum recreational use.</p> <p>Additional surveys in selected locations were carried out on a weekday (Tuesday, Wednesday or Thursday) where it was considered there might be local uses that have a specific weekday peak.</p> <p>Surveys were not undertaken in inclement weather.</p>
Survey duration	<p>Weekday surveys were carried out between 08:00 - 18:00.</p> <p>Weekend surveys were carried out between 07:00 - 19:00.</p>
Approvals and inspection	Where possible, surveys were considered with the relevant highway authority.
Data obtained	Manual counts were recorded in 15-minute time intervals by classification, as well as by total for all categories of user, with sub-totals for every hour.
Classification	<p>Classification used was: pedestrians, pedestrians walking dogs, pedestrians with buggy, pedestrian with impairment (type of impairment was recorded), joggers, cyclists and horse riders.</p> <p>For PRoW on public footpaths or bridleways, an additional category of 'other' was used to record users that do not fall into the above categories, e.g. motorcyclists, quad bikes, tractors etc (type was recorded).</p>
Site information recorded	Weather conditions and any other observed events which could affect the survey results.

4 Traffic survey schedules and locations

- 4.1.1 Schedules outlining each of the traffic surveys undertaken are shown in Appendix A. The maps showing the location of each ATC and MCC survey are also shown in Appendix A.

5 Non-motorised user survey schedule

5.1.1 Schedules outlining each of the non-motorised user surveys are shown in Appendix B.

6 References

HS2 Ltd (2013), *High Speed Rail (London - West Midlands) Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-one-environmental-statement-documents>

HS2 Ltd (2017), *High Speed Two Phase 2a (West Midlands - Crewe), Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2a-environmental-statement>.

HS2 Ltd (2017), *High Speed Two Phase 2a (West Midlands - Crewe) Background Information and Data, Traffic and transport, Transport Assessment baseline survey report*. Available online at: <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-traffic-and-transport>

HS2 Ltd (2019), *High Speed Two Phase 2a (West Midlands - Crewe) Supplementary Environment Statement 2 (SES2) and Additional Provision 2 Environment Statement (AP2 ES)*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2a-supplementary-environmental-statement-and-additional-provision-environmental-statement#background-information-and-data>

The Institute of Highways and Transportation (1997), *Transport in the Urban Environment*, Mayhew McCrimmon Printers Ltd, England.

Appendix A: Traffic survey schedules and location maps

Table 6: Automatic traffic count survey schedule

Unique reference	Location	OS grid reference (E, N)	Survey type	Survey date
SIT0311	B5017 Forest Road, Burton	422162.3407, 323892.1978	ATC	December 2016 - March 2017
17D015	B5234 Burton Road, Newborough	414444.3361, 325099.1245	ATC	April - May 2017
17F002	B5017 Henhurst Hill, Burton	421142.7162, 323892.5805	ATC	June 2017
June2018ATC11	B5066 Sandon Road	393455.9708, 325949.9830	ATC	June 2018
June2018ATC14	A518, north-east of A51/Weston	398018.0000, 327466.0000	ATC	June 2018
June2018ATC15	B5066 Sandon Road, south of A51	394576.4785, 328791.4766	ATC	June 2018
June2018ATC16	B5066 Hilderstone Road, north of A51	394775.9901, 330421.1961	ATC	June 2018
June2018ATC17	New Road west of Hixon	399188.1992, 325775.8180	ATC	June 2018
June2018ATC101	Gorse Lane	414454.8591, 313538.9812	ATC	June 2018
June2018ATC102	B5014 Lichfield Road	410525.1655, 313637.5457	ATC	June 2018
June2018ATC103	Shaw Lane	410643.1144, 314591.6185	ATC	June 2018
August2018ATC1	A51, Woore	372418, 343942	ATC	August 2018
August2018ATC2	A51, Woore	372487, 343621	ATC	August 2018
August2018ATC3	A525, Woore	373121, 342302	ATC	August 2018
August2018ATC4	London Road, Woore	373080, 342222	ATC	August 2018
Autumn2018ATCo1	01 - Newcastle Road, Woore	373102, 342299	ATC	September 2018
Autumn2018ATCo2	02 - London Road, Woore	373084, 342204	ATC	September 2018
Autumn2018ATCo3	03 - London Road, Woore	372417, 343958	ATC	September 2018
Autumn2018ATCo4	04 - London Road, Woore	372485, 343634	ATC	September – October 2018
Autumn2018ATCo5	B5121 Wellington Road south of the 4-arm roundabout with A5017 Shobnall Road	423611, 322850	ATC	September 2018
Autumn2018ATC9141	Pipe Lane	409079, 318697	ATC	October 2018
Autumn2018ATC9301	Yarlet School	391213, 329331	ATC	October 2018

BID TR-001-000 SES2 and AP2 ES

Table 7: Manual classified counts and queue length survey schedule

Unique reference	Location	OS grid reference (E, N)	Survey type	Survey date
18A033	A5121 Wellington Rd/B5017 Shobnall Rd	423736.0348, 322993.2878	MCC	January 2018
June2018MCCo1	Wood End Lane/Netherstowe Lane Priority	413514.8299, 312938.0244	MCC, QL	June 2018
June2018MCCo2	Wood End Lane/Watery Lane Priority	412315.2062, 313170.3718	MCC, QL	June 2018
June2018MCCo3	A51/Brook End/High Street Priority	407851.0677, 314596.9330	MCC, QL	June 2018
June2018MCCo4	A51/A518 Priority (North of Stafford Road Jtn)	397640.7548, 327348.5748	MCC, QL	June 2018
June2018MCCo5	A51/A5066 Sandon Road Priority	394849.6991, 329313.4599	MCC, QL	June 2018
June2018MCCo6	A51/B5066 Hilderstone Road Priority	394633.5574, 329840.1953	MCC, QL	June 2018
June2018MCCo7	A34/Yarlet Lane Priority	391088.9566, 328680.3915	MCC, QL	June 2018
June2018MCCo8	A51/Main Road Priority (Colwich)	401402.7373, 321093.4840	MCC, QL	June 2018
June2018MCCo9	A51/New Road (Hixon) Priority	398646.1795, 325657.4392	MCC, QL	June 2018
June2018MCC10	A51/B5027 Lichfield Road Priority	391895.3584, 332161.1066	MCC, QL	June 2018
June2018MCC11	A51/Staggered Priority Junctions west of Lichfield Rd Jtn	391648.5196, 332262.2145	MCC, QL	June 2018
June2018MCC12	A34/Meaford Road Roundabout	388809.0000, 335213.0000	MCC, QL	June 2018
June2018MCC19	A51/Milwich Road Priority	394740.5132, 329686.5777	MCC, QL	June 2018
June2018MCC20	A51/Burston Lane South Priority	394124.8513, 330181.1305	MCC, QL	June 2018
June2018MCC21	A51/Burston Lane North/Shruggs Lane Priority	393924.8702, 330304.8152	MCC, QL	June 2018
June2018MCC22	A51/Bellamour Lane Priority	401873.8990, 320724.4244	MCC, QL	June 2018
June2018MCC23	Crewe Road/B5071 Signals	370467.0000, 352630.0000	MCC, QL	June 2018
Autumn2018MCC17	A515 / B5234 priority crossroads	414915.0000, 324787.0000	MCC, QL	September 2018
Autumn2018MCC18	B5234 / B5017 5-arm roundabout at Needwood	417918.0000, 324261.0000	MCC, QL	September 2018

Figure 2: Traffic survey location map CA1

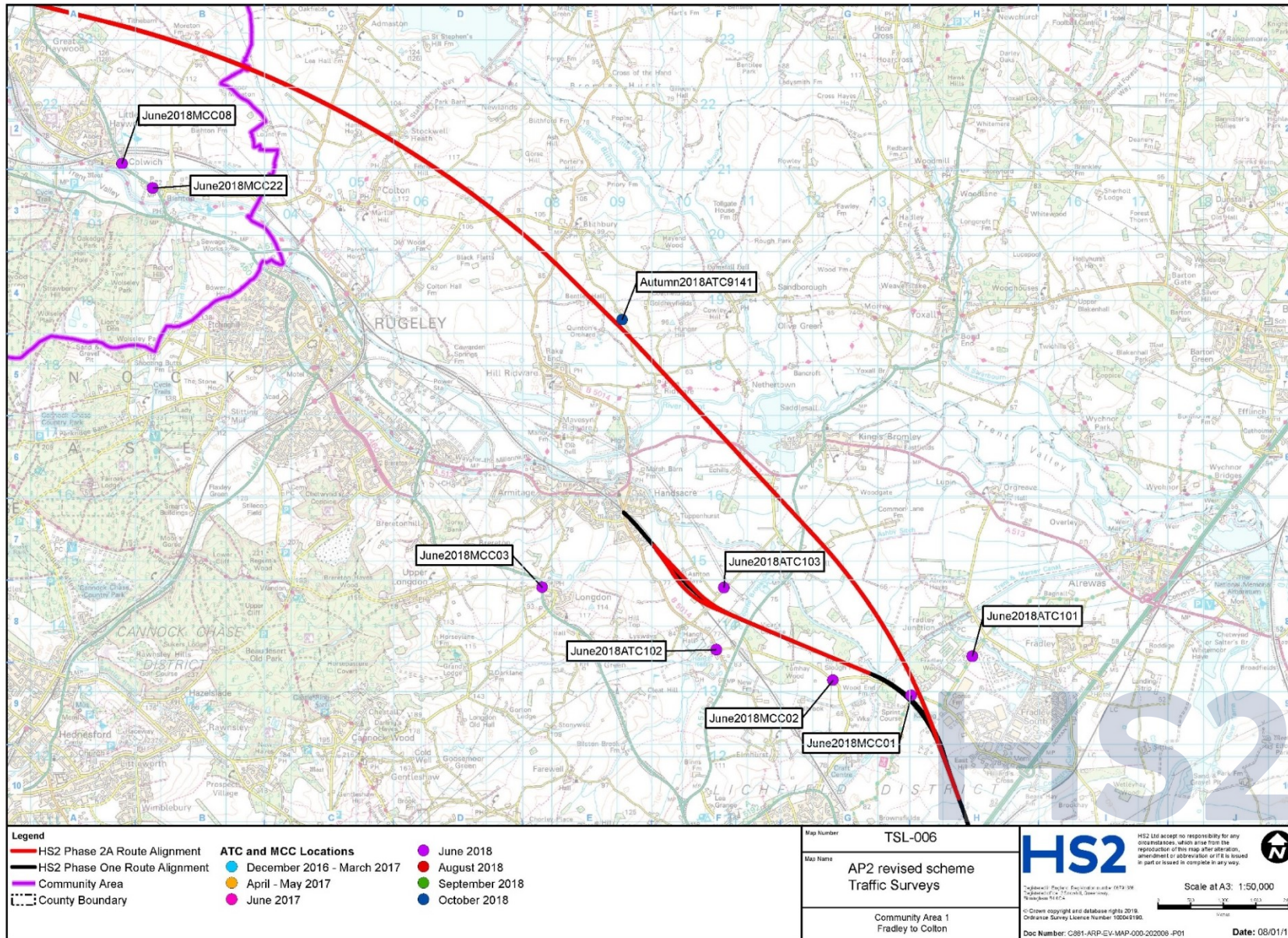


Figure 3: Traffic survey location map CA1

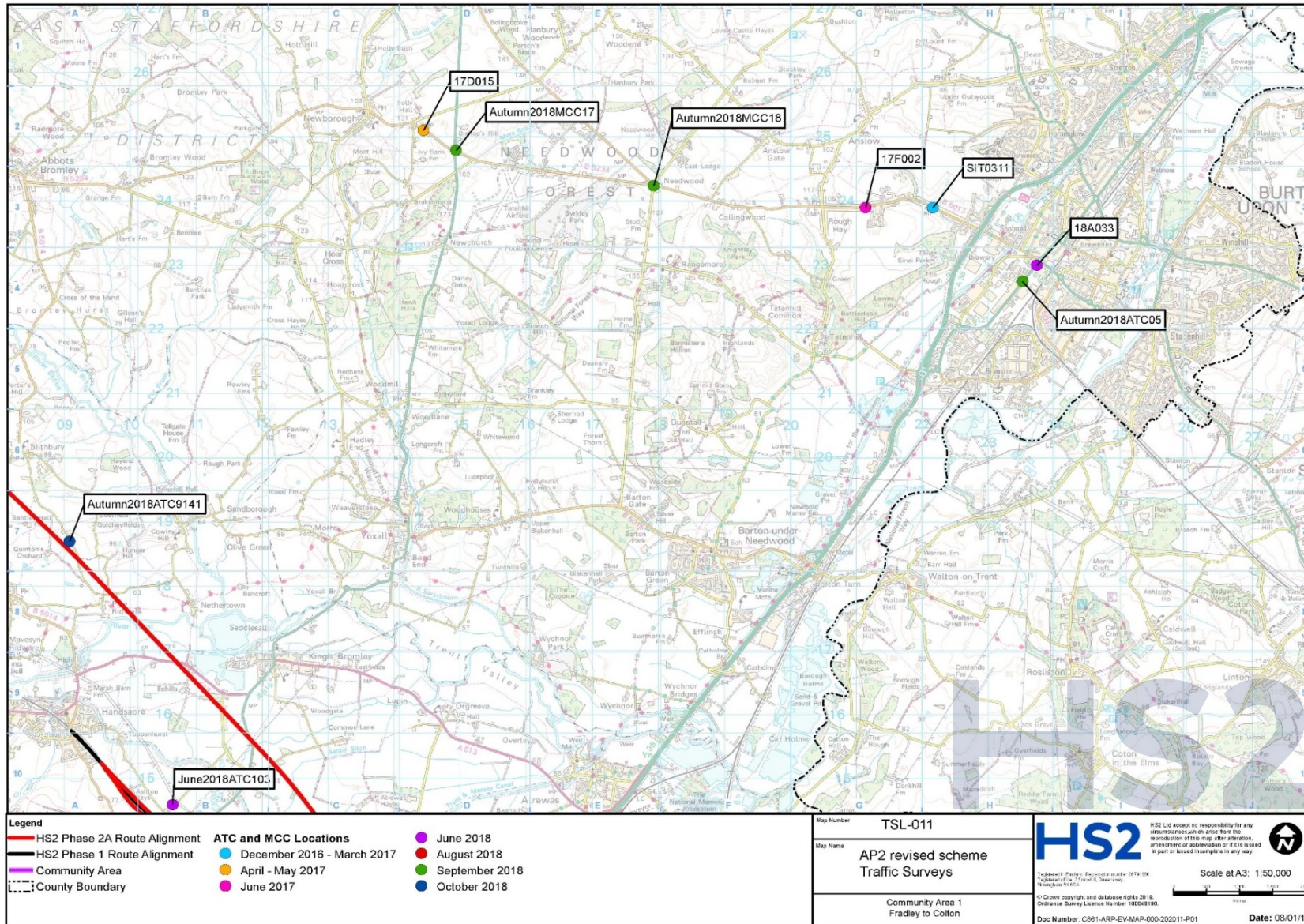


Figure 4: Traffic survey location map CA2

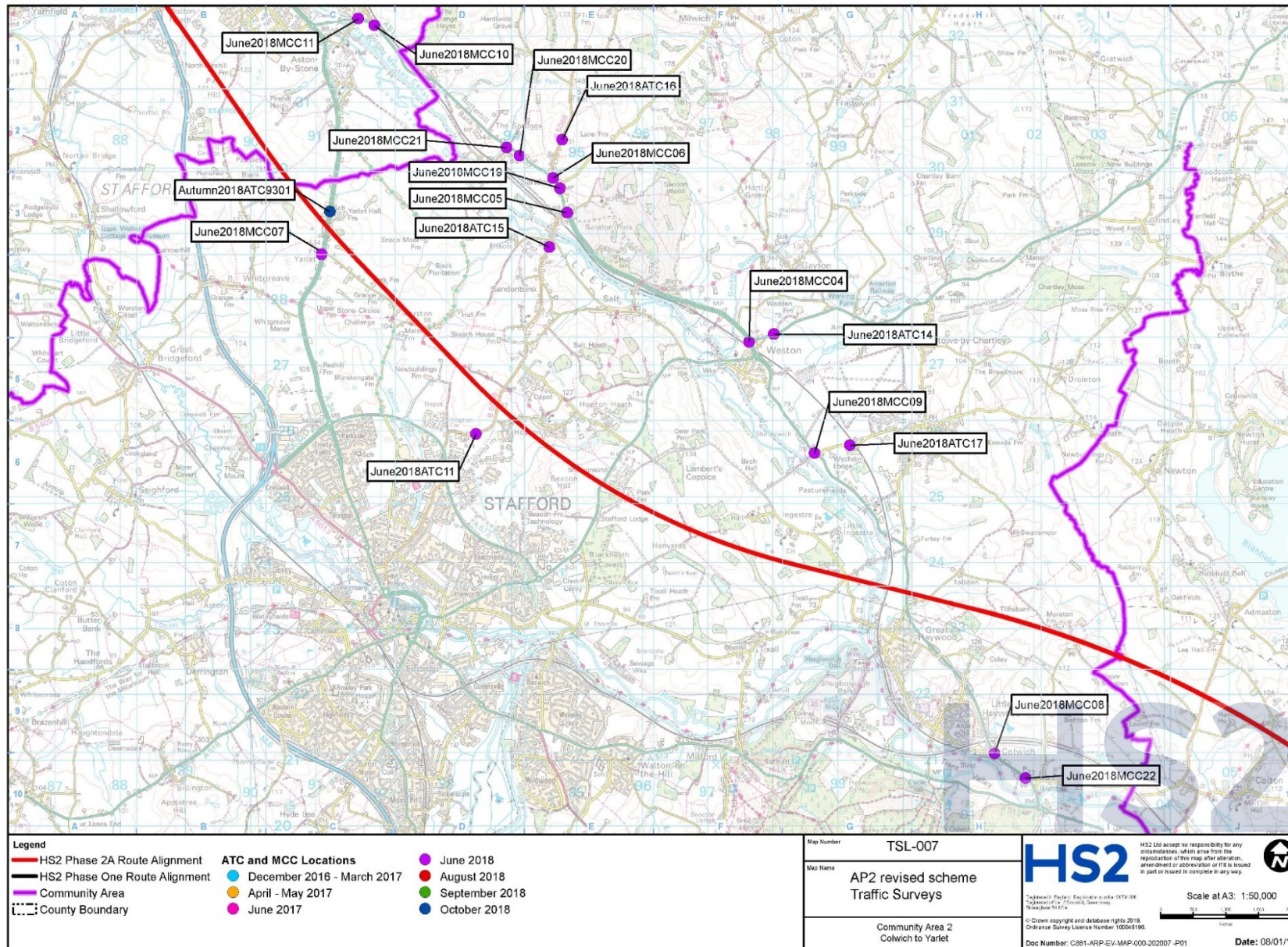


Figure 5: Traffic survey location map CA3

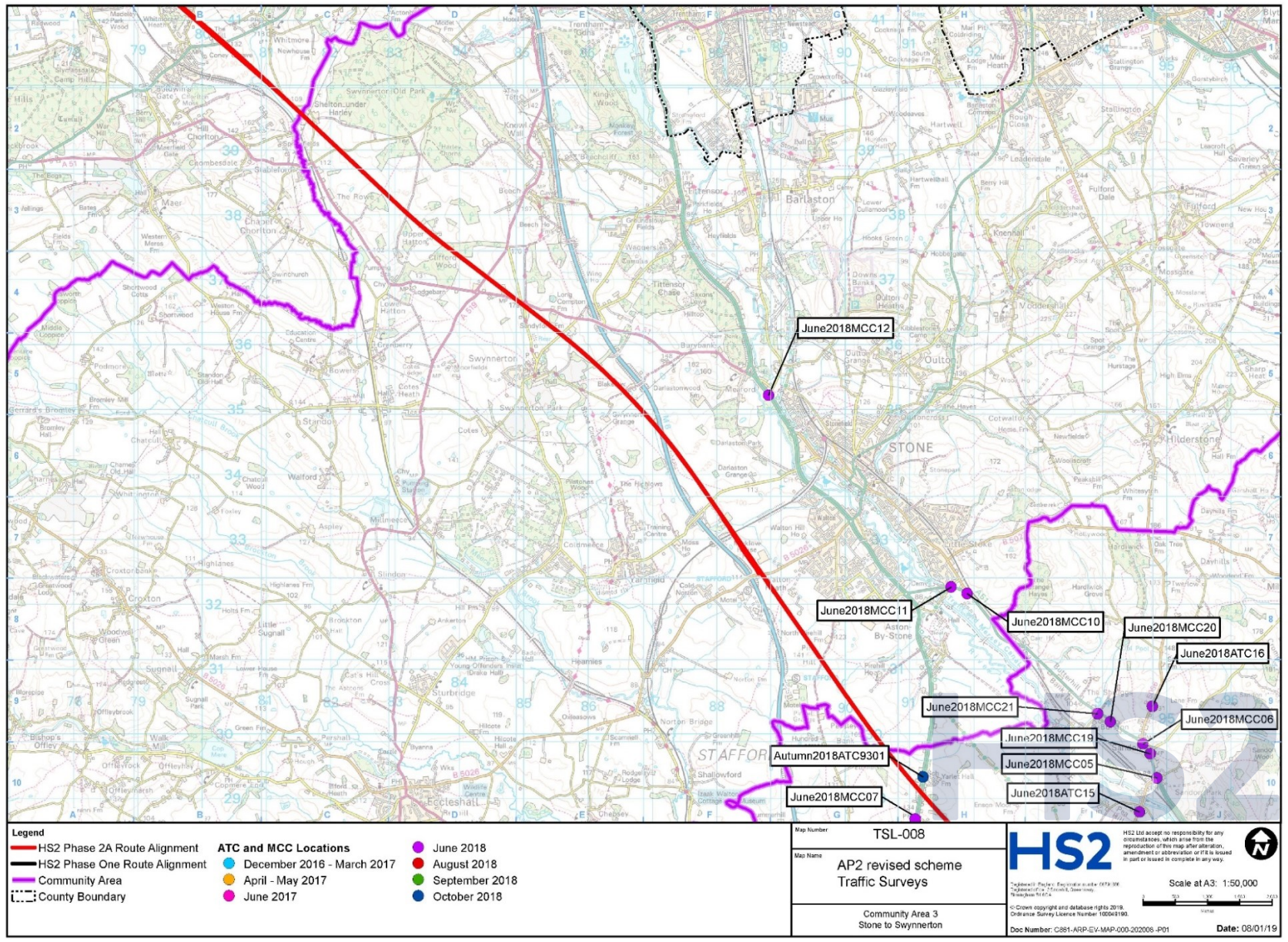


Figure 6: Traffic survey location map CA4

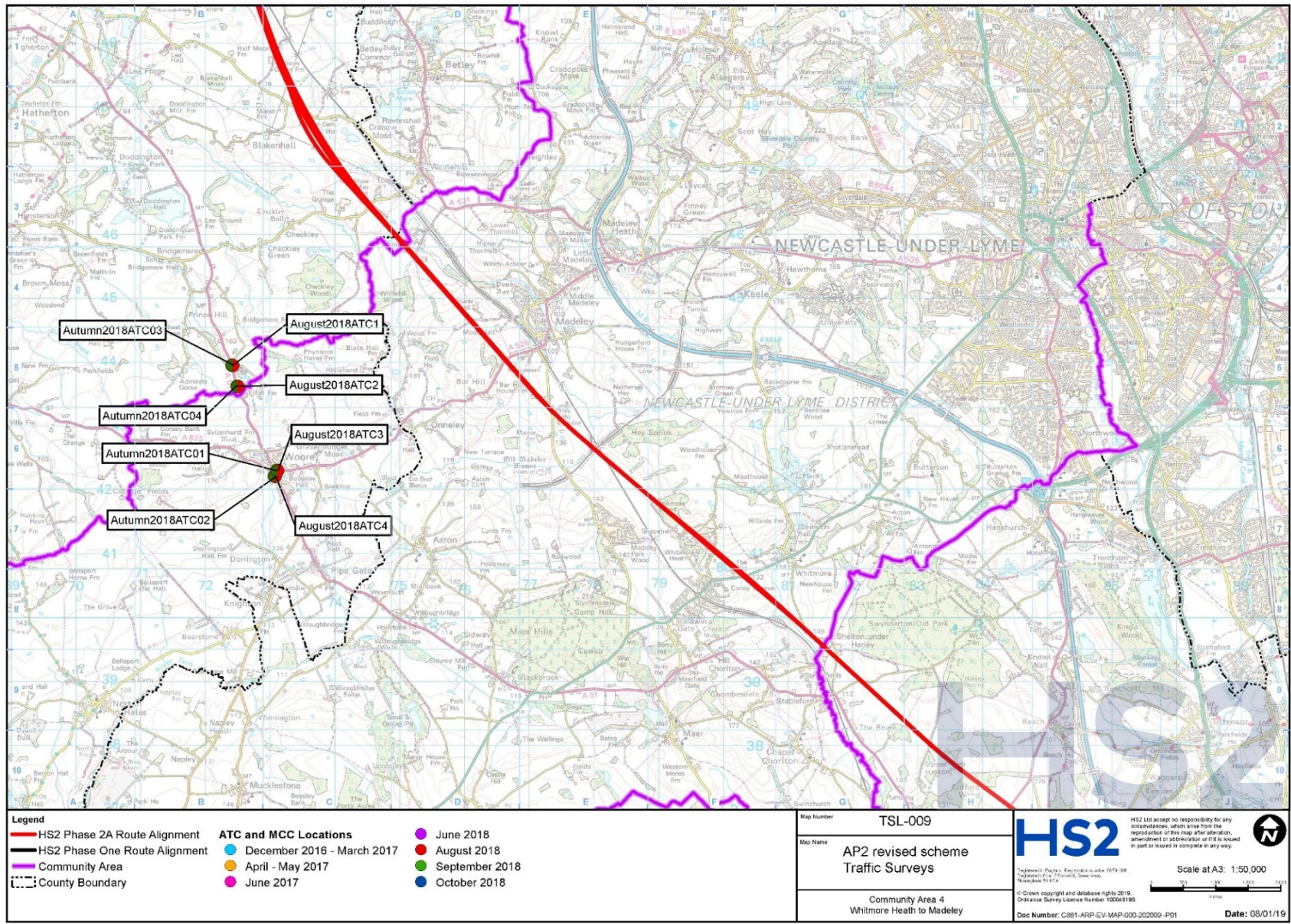
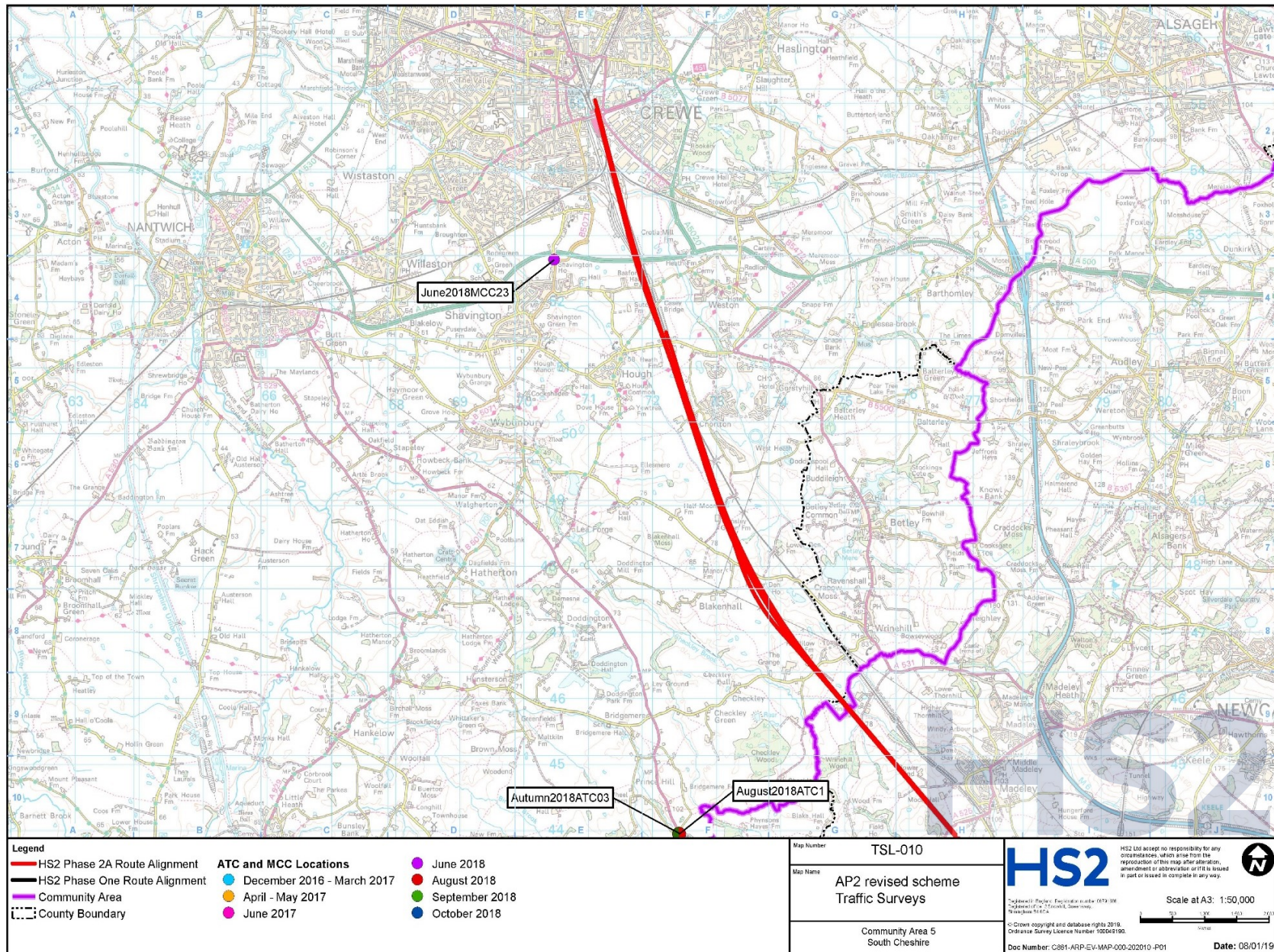


Figure 7: Traffic survey location map CA5



Appendix B: Non-motorised user survey schedules

Table 8: Public rights of way survey schedule

Unique ID	PRoW or road name	Status ⁵	Route description	General condition	Weather condition	Daily usage	Date
2018PROW01	Mount Edge (Equestrian)	BW	Access road at Mount Edge, south of Hopton Lane	Surfaced road	Showers	11	August 2018
2018PROW02	A53 Newcastle Road	FP	A53 Newcastle Road	Rural A53 road, no segregated pedestrian/cycle facilities	Showers	0	August 2018
2018PROW03	Snape Hall Road	FP	Snape Hall Road	Partially surfaced track	Showers	2	August 2018
2018PROW04	Den Lane	BOAT	Den Lane	Surfaced carriageway, no designated pedestrian or cycle facilities.	Showers	37	August 2018

⁵ FP = footpath; BW = bridleway; BOAT = Byway Open to All Traffic

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