



TRANSPORT ASSESSMENT

LAND SOUTH OF WATER LANE, ANGMERING

Client: Rydon Homes and Gleeson Developments Ltd



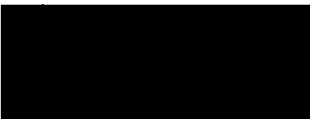
1-Transport

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Client: Rydon Homes and Gleeson Developments Ltd

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SECTION 1 INTRODUCTION

- 1.1 Rydon Homes and Gleeson Developments Ltd are proposing the residential development of Land South of Water Lane, Angmering, for up to 175 residential dwellings.
- 1.2 An outline planning application has been prepared which seeks permission for the principle of residential development on the land. All detailed matters are reserved at this stage apart from access which is a detailed matter for consideration as part of this application. An illustrative masterplan is provided at **Appendix A**.
- 1.3 The site is located some 800m east of Angmering village centre. The site is located to the south of Water Lane and is bounded by the A280 to the east, Weavers Hill to the west and High Street to the south. A site location plan is provided as **Figure T1**.
- 1.4 Rydon Homes and Gleeson Developments Ltd also control land to the north of Water Lane. Whilst this land is outside of the current planning application, it is being promoted for inclusion within Arun District Council's (ADC) Emerging Local Plan for residential led, mixed-use development.
- 1.5 i-Transport has been appointed to provide highways and transport advice in relation to the proposed development.
- 1.6 In line with the requirements of the National Planning Policy Framework (NPPF) and the National Planning Practice Guidance (NPPG), this Transport Assessment (TA) has been prepared to consider the transport impacts that may arise from the proposed development, and to consider the proposal against relevant transport policy.
- 1.7 Specifically, the TA has been prepared to consider the three critical tests outlined in paragraph 32 of the National Planning Policy Framework:
 - Will safe and acceptable access be provided to the site for all modes?
 - Will the opportunities for sustainable travel be taken up?
 - Will there be a 'severe' residual cumulative transport impact of the development?
- 1.8 The TA has been produced in accordance with guidance contained in the NPPG and other local and national transport planning guidance.

- 1.9 The scope of the TA, along with the key parameters and methodologies used in its development, have been agreed with West Sussex County Council (WSCC) as the local highway authority. The text to the Transport Assessment Scoping Report is provided at **Appendix B** which sets out the parameters upon which the assessment is based.
- 1.10 A **Framework Travel Plan** (ITB9105-009R) has also been prepared to identify a comprehensive package of measures designed to encourage sustainable travel to and from the site. The TA should be read alongside the Framework Travel Plan (FTP).

Key Conclusions

- 1.11 The TA concludes that the development proposal complies with relevant national and local transport policy; that the site is in an accessible location in transport terms; that proposed access arrangements comply with the relevant design guidance and deliver safe access for all people; and that the residual impact of development on the operation of the local highway network would not be severe. Therefore, there are no transport or highway reasons for refusing or preventing the proposed development.

Structure

- 1.12 The remainder of this TA is structured as follows:
- **Section 2** sets out information on the development proposals;
 - **Section 3** reviews relevant national and local transport policy;
 - **Section 4** provides an overview of the existing transport conditions on the local transport network in the vicinity of the site;
 - **Section 5** sets out the proposed site access arrangements and considers the principles of site servicing and parking;
 - **Section 6** considers the accessibility of the site relative to local facilities;
 - **Section 7** provides an assessment of the likely transport impact of the development proposals, including the traffic impact on local roads;
 - **Section 8** provides a sensitivity test to consider the Full Masterplan; and
 - **Section 9** provides a summary of the TA and identifies its conclusions.

SECTION 2 DEVELOPMENT PROPOSALS

- 2.1.1 The proposed residential development of land to the south of Water Lane will provide for up to 175 dwellings, of which some 30% will be affordable dwellings, with all vehicular access to be provided from Water Lane.
- 2.1.2 The planning application seeks outline consent only at this stage, and matters including the precise quantum and mix of development, as well as the site layout, to be confirmed at the reserved matters stage.
- 2.1.3 To assist the TA, an indicative development mix is provided in Table 2.1:

Table 2.1: Illustrative Housing Mix

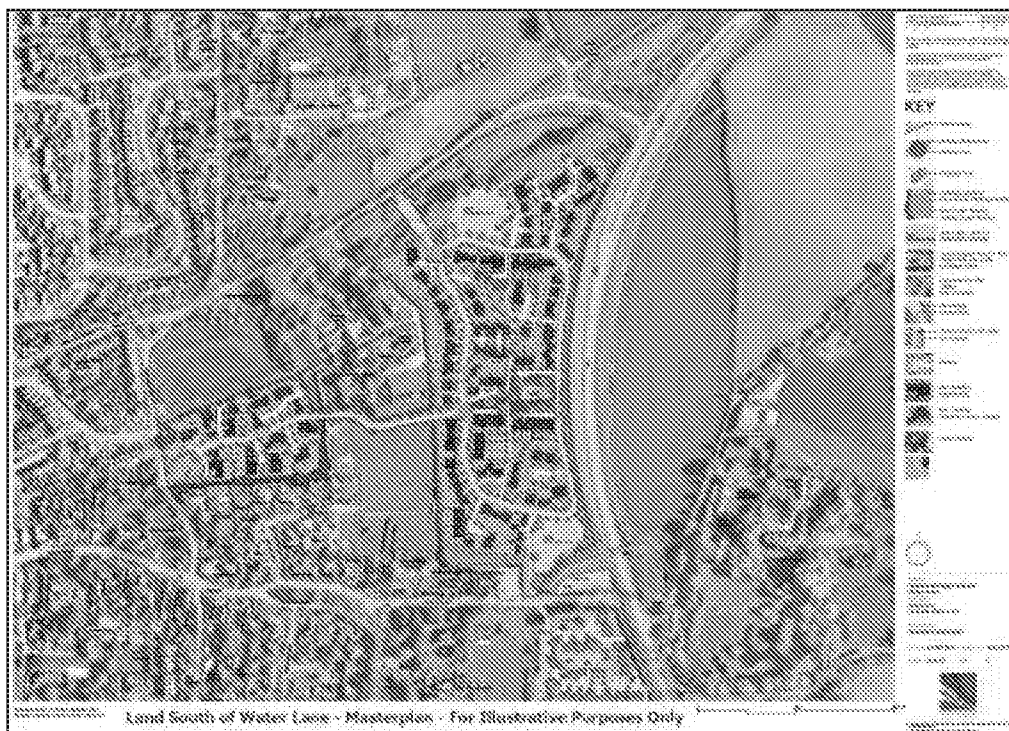
Dwelling Type	Private	Affordable	Total
1 Bed Dwelling	11	13	24
2 Bed Dwelling	40	28	68
3 Bed Dwelling	56	10	66
4 Bed Dwelling	15	2	17
Total	122	53	175

2.2 Site Layout

- 2.2.1 Whilst the details of the layout are still to be determined, the ‘principles’ of the site layout have been considered and are presented to provide context to the application and to demonstrate how the development can be brought forward.
- 2.2.2 The site layout will be designed in accordance with contemporary design guidance, namely the Department for Transport’s *‘Manual for Streets’*, and will follow the principles outlined below:
- **Primary Street** – minimum 5.5m carriageway with 2.0m footways on the primary routes through the development;
 - **Secondary Streets** – 5.0m shared surfaces with service margins as agreed with WSCC on secondary routes through the development which will be designed to enable access for refuse vehicles; and
 - **Private driveways** – narrower shared surface areas where refuse vehicles do not need to enter.

- 2.2.3 An illustrative site layout is provided at **Appendix A** which demonstrates how these principles can be delivered on the land. An extract of the illustrative masterplan is shown below in Image 2.2.

Image 2.2: Illustrative Site Layout



SECTION 3 POLICY REVIEW

3.1.1 To provide context for the assessment, this section of the TA provides a review of the national and local transport planning policies that are relevant to the proposed development.

3.2 National Policy

National Planning Policy Framework (NPPF)

3.2.1 The NPPF was published in March 2012 and sets out the Government's planning policies for England, and provides guidance on how these are expected to be applied.

3.2.2 Paragraph 14 of the NPPF sets out that there is a presumption in favour of sustainable development:

"At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking."

3.2.3 Paragraph 32 of the NPPF considers the need for transport assessment and states:

"All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment."

3.2.4 In line with this policy requirement, this TA has been prepared to consider the likely transport impacts of the proposal.

3.2.5 Specific transport policies within the NPPF, include paragraph 32, which states that decisions should take account of whether:

- **"Opportunities for sustainable transport modes have been taken up depending on the nature and location of the site to reduce the need for major transport infrastructure;**
- **Safe and suitable access to the site can be achieved for all people; and**
- **Improvements can be undertaken within the transport network that cost effectively limit the significant impacts of development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe."**

- 3.2.6 Therefore, development should provide opportunities for sustainable travel; achieve safe access; and should only be prevented where the residual cumulative impact is 'severe'. This last point provides an even more demanding test than the 'general test' of paragraph 14 – development should only be prevented for transport reasons if the cumulative residual impact would be 'severe'.

National Planning Practice Guidance (March 2014)

- 3.2.7 The web-based NPPG replaced the DfT's 'Guidance on Transport Assessment' on 6 March 2014 and seeks to bring together planning guidance for England across all disciplines in an accessible way as well as to provide a clear link between guidance and the aims and objectives of the NPPF.
- 3.2.8 The NPPG discusses the role of travel plans and transport assessments / statements and how they relate to each other:

"Travel Plans, Transport Assessments and Statements are all ways of assessing and mitigating the negative transport impacts of development in order to promote sustainable development. They are required for all developments which generate significant amounts of movements. (ID42 – 002);

Transport Assessments and Statements can be used to establish whether the residual transport impacts of a proposed development are likely to be "severe", which may be a reason for refusal, in accordance with the National Planning Policy Framework. (ID42 – 005);

Travel Plans are long-term management strategies for integrating proposals for sustainable travel into the planning process. They should not, however, be used as an excuse for unfairly penalising drivers and cutting provision for cars in a way that is unsustainable and could have negative impacts on the surrounding streets. (ID42 – 003)".

- 3.2.9 In accordance with NPPG this TA has been prepared to assess the transport impacts of the development, and to consider whether any effects would be 'severe'.
- 3.2.10 Section 7 of the TA presents a comprehensive assessment of potential traffic impacts and identifies deliverable and appropriate mitigation to ensure any impacts of the development are not significant. Section 8 demonstrates that this is also the case if the full masterplan is brought forward.
- 3.2.11 A FTP is also provided to outline a long-term, realistic strategy for the promotion of sustainable travel which seeks to reduce car based travel demand. The FTP should be read in conjunction with the TA.

3.3 Local Policy and Guidance

Saved Policies of the Arun District Local Plan Review 2003-2011 (April 2003)

- 3.3.1 Local policy is set out in the saved policies of the Arun District Local Plan. The Local Plan was adopted in April 2003 and on 27 September 2007 the Secretary of State agreed to 'Save' a number of policies. These 'saved' policies for the existing development plan against which the proposals must be assessed.
- 3.3.2 In relation to transport, the 'Saved' policies are Policies GEN7, GEN12, GEN14 and GEN 15. These are considered in further detail in the following section:
- 3.3.3 Saved Policy GEN7, *'The Form of New Development'* refers to sustainable development and access for different users, with extracts including:

"Development will be permitted provided it:

...(iii) promotes sustainable development, including the effective use and conservation of energy and reducing the need to travel, particularly by private car;

(vii) allows for the safe movement of pedestrians and vehicles, giving priority to pedestrians;

(viii) provides for vehicle parking in accordance with Policy GEN12 and Appendix 2 and open space in accordance with Policy GEN20."

- 3.3.4 Section 5 considers the principles of on-site car parking and safe movement for all people. Section 6 (along with the FTP) considers the transport sustainability of the development and identifies a series of measures designed to reduce the need to travel by private car.
- 3.3.5 Saved Policy GEN12 *"Parking in New Development"*:

"The Local Planning Authority will base its consideration of the need for on-site parking provision on its parking standards contained within this Plan. Provision of parking in excess of these standards will not be allowed.

The Local Planning Authority may seek a lower provision than required by the standards for developments proposed in town centres and other areas accessible by other means of transport."

- 3.3.6 Section 5 considers the principles that will be applied to delivering parking on the site. The details of parking provision will be confirmed at the reserved matters stage.

- 3.3.7 Saved Policy GEN14 *"Public Transport"* refers to the expectation of new developments to provide adequate access to public transport provision:

"The Council will support the provision of comprehensive public transport services throughout the District, and encourage improvements to be made to services wherever possible. Where appropriate, new development will be required to make provision for public transport facilities.

Where new development can only take place with improvements to public transport services, or such improvements would be likely to influence desirable travel patterns, the Local Planning Authority will seek contributions towards the cost of improvements."

- 3.3.8 In line with Policy GEN14 the proposed development will provide a convenient route / access to the exiting bus stops along Weavers Hill in the form of new a pedestrian/cycle access. Improvements to local bus stops are also proposed in Section 6 and the FTP presents a strategy to promote the use of public transport.

- 3.3.9 Saved Policy GEN15 *"Cycling and Walking"* sets out the council's strategy to improve links for non-motorised users within the district:

"The Council will continue to work with West Sussex County Council and others to encourage and support the development of safe cycle and footpath networks. Where appropriate, new development will be required to provide safe and attractive facilities for cyclists and pedestrians, both within the site and in the form of links to the surrounding area. The proposed Barnham - Felpham and River Arun cycle routes will be protected from development which would preclude their use as a safe cycle route."

- 3.3.10 Section 5 identifies the layout principles to deliver a well-connected network of streets on the site, and also demonstrates how the site integrates well with the local network to provide direct walking and cycling connections to local facilities. The FTP presents a package of measures designed to further encourage walking and cycling.

Arun District Council's Emerging New Local Plan

- 3.3.11 Arun District Council is in the process of preparing a new local plan. When the local plan is adopted it will set out the vision for Arun to 2031 and beyond, and will outline how the District Council plan to accommodate growth in the district.

- 3.3.12 At this stage there are no current draft policies to consider and the earlier draft documents do not hold any planning policy weight.

Arun Transport Study (March 2013)

3.3.13 The Arun Transport Study (March 2013) identifies that improvements to the A259 would help to mitigate the impact of new development in Angmering. The Transport Study built upon the work undertaken as part of the A259 Route Improvement Study (November, 2012) which proposed a package of improvements to provide journey time savings for the eastern section of the route. The total package of improvement works has been identified with the Arun IDP and will be part funded through a Section 106 agreement with the remainder funded as part of the Governments Growth Deal with the C2C LEP.

3.3.14 Phase 1 of the works (the Angmering section) are due to be constructed in 2017.

West Sussex Transport Plan 2011-2026 (February 2011)

3.3.15 The West Sussex County Council (WSCC) Local Transport Plan 3 was published in February 2011 and sets out a long term strategy and implementation plan for making improvements to the transport system throughout the county over the next 20 years.

3.3.16 The strategy for Arun is to provide improvements to the transport system to tackle the identified transport issues as and when funding becomes available. To ensure that the regeneration aspirations of the coastal plan are delivered and the identified transport issues are addressed, they will ensure that all new scheme and developments contribute, and support, in some way to the following:

- increasing use of sustainable modes of transport;
- improving network efficiency in order to improve journey times and air quality;
- improving safety for all road users;
- discouraging HGVs from using unsuitable roads; and
- improving accessibility between communities within the District.

WSCC Guidance for Parking in New Residential Developments (September 2010)

3.3.17 WSCC Car Parking Standards Supplementary Planning Guidance was adopted in November 2003. The residential parking components of this were revised in September 2010, following revisions to PPG13. The current residential parking standards are calculated based upon the ward in which the site is located.

Relevant Transport Guidance

3.3.18 The TA has also been prepared with due regard to relevant industry standard practice and guidance documents, including:

- DfT's 'Manual for Streets' (MfS) and 'Manual for Streets 2' (MfS2);
- The Design Manual for Road and Bridges (DMRB);
- CIHT – 'Providing for Journeys on Foot';
- Sustrans 'Design Manual';
- National Travel Survey (NTS) data;
- WSCC's 'Transport Assessment Methodology' (TAM); and
- Local Transport Notes (LTNs), including on walking and cycling routes.

3.4 Policy Summary

3.4.1 Paragraph 32 of the NPPF identifies the three key transport criteria that decisions on development proposals should take account of. These are whether:

- The opportunities for sustainable travel have been appropriately 'taken up';
- safe and suitable access can be achieved; and
- improvements can be undertaken within the transport network that cost effectively limit the impacts of the development.

3.4.2 These criteria are broadly reflected in existing and emerging local policy. This TA has been prepared to consider the development proposal against these criteria.

3.4.3 The following sections of the TA describe how the proposed development complies with these local and national transport planning policy considerations.

SECTION 4 EXISTING SITUATION

4.1 Introduction

- 4.1.1 This section of the TA describes the existing transport conditions in the area, including the opportunities for walking, cycling and public transport.

4.2 Site Location

- 4.2.1 The site is located to the east of Angmering, some 800m from the village centre. The site is located to the south of Water Lane and is bounded by the A280 to the east, Water Lane to the north, Weavers Hill to the west and High Street to the south. **Figure T1** provides a location plan of the site.

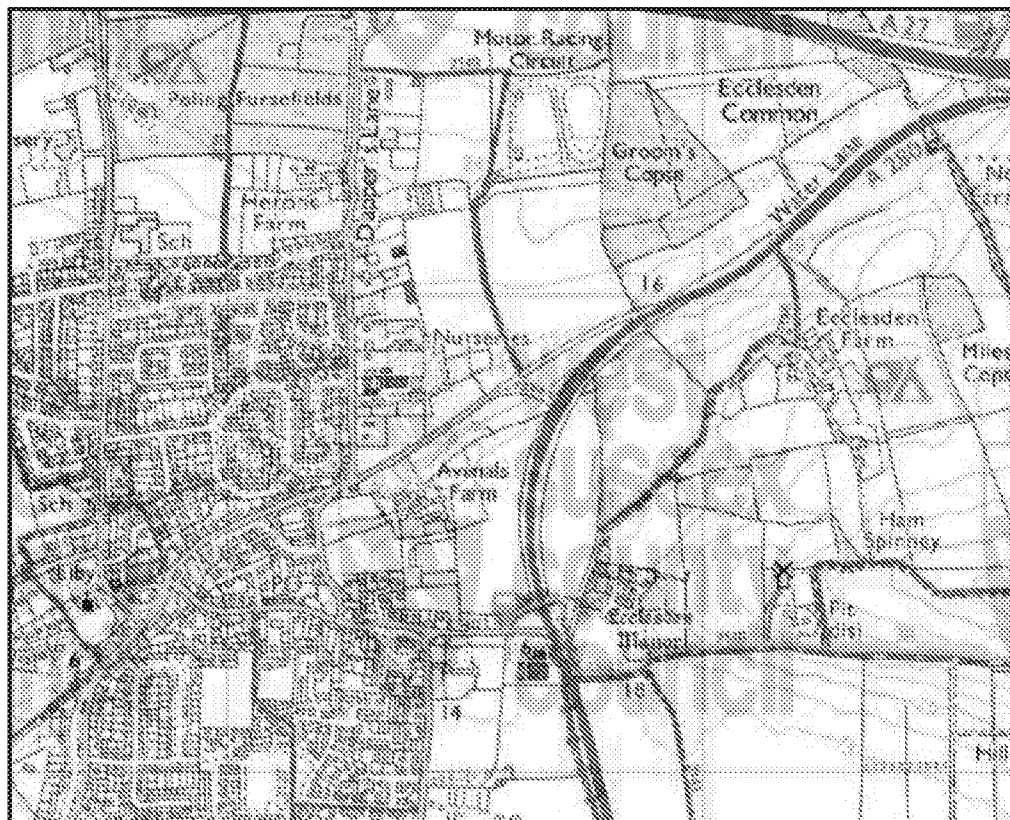
4.3 Walking and Cycling Facilities

Walking Facilities

- 4.3.1 Angmering village centre is within 800m of the centre of the site and offers a good range of local facilities, including convenience stores, a health centre, library, newsagent, café / restaurant and hairdressers. There are significant additional facilities in the wider area, within a reasonable walking distance (within 2km) of the site, which include schools, employment and local services. A full assessment of the local facilities has been undertaken further in the TA at Section 6.3.
- 4.3.2 Angmering village centre can be accessed using Weavers Hill and Cumberland Road to the west of the site. Cumberland Road is a residential road, subject to a 30mph speed limit, and is street-lit with a footway present on its southern side continuously to the junction with Water Lane. Water Lane (from Cumberland Road) has a footway present on its southern side which provides access from Cumberland Road into the village centre where there is a signal crossing to provide access to the north of the village centre.
- 4.3.3 An additional connection to the centre of Angmering is available using the High Street which runs to the south of the site. At its eastern (site) end, there is no footway but the lane serves only a very small number of properties and is very lightly trafficked. To the west of the site the High Street provides a footway on its northern side which is provided towards the village centre.

- 4.3.4 The development at Manor Nursery to the south of High Street (A/51/14/OUT) will bring forward a footway improvement scheme on High Street which will enable pedestrians using the southern access into the site to connect to the existing footways to the west. These proposals are provided in **Appendix C**.
- 4.3.5 There are no footways along Water Lane in the vicinity of the site frontage with footway provision currently commencing to the west of Dappers Lane. From this point a continuous footway is provided to Angmering Village Centre, with street lighting provided along the route.
- 4.3.6 To the south of the site there are footways on Roundstone Lane which provide continuous lit connections towards the A259.
- 4.3.7 There are a number of public footpaths within the local area, including public footpath 2149, which runs to the north of the site connecting to Dappers Lane and bridleway 18 running east from the southern site boundary (Image 4.1).

Image 4.1: Location of Public Rights of Way



Source: West Sussex County Council Public Rights of Way iMap

- 4.3.8 The routes which future residents would use to access the local facilities within Angmering have been assessed as part of a Non-Motorised User Audit, presented in Section 6.4 and **Appendix D** of this report.

Cycling Facilities

- 4.3.9 Water Lane is suitable for use by cyclist within the carriageway, which connects to the village centre with shuttle-working traffic calming features on the southern side of the carriageway. There are on-road / hard surfaced cycle routes available to the north of the A27, between the A284 and A280.
- 4.3.10 Other local streets are generally of a residential nature within Angmering and are subject to traffic calming measures. In part local roads are subject to a 20mph speed limit and low traffic volumes. As such cycle trips can be accommodated on the carriageway as per Manual for Streets (MfS) guidance.

“Cyclists should generally be accommodated on the carriageway. In areas with low traffic volumes and speeds, there should not be any need for dedicated cycle lanes on the street” (MfS, para, 6.4.1).”

4.4 Public Transport

- 4.4.1 The closest bus stops to the site are located on Weavers Hill some 350m from the centre of the site as shown in **Figure T2**. These stops are served by the regular local bus Service 9. The facilities provided at these bus stops are a simple flag pole with timetable. Table 4.1 shows details of local bus services.

Table 4.1 – Angmering Bus Services

Service	Operator	Routing	Frequency
9	Stagecoach South	Shoreham-by-Sea – Lancing – Worthing – Angmering – Littlehampton	Hourly Service (No service on Sundays) First service departs at 0701 with last return journey arriving at 1902
		Littlehampton – Angmering – Worthing – Lancing – Shoreham-by-Sea	Hourly Service (No service on Sundays) First service departs at 0805 with last return journey arriving at 1919
Destination		Average Travel Time from Angmering (Bus Stop Weavers Hill, Bus Service 9)	
Angmering Rail Station		10mins	
Littlehampton		34mins	
Worthing		32 mins	
Lancing		49 mins	
Shoreham by Sea		72 mins	

Source: Traveline SE and Stagecoach South

4.4.2 Bus service 9 provides an hourly service between Shoreham-by-Sea and Littlehampton, and provides access directly from the site to Angmering rail station.

4.4.3 Journeys from Angmering to Littlehampton depart at six minutes past the hour with the first service at 0701 with a journey time of circa 25 minutes. The return journeys depart at approximately 40 minutes past the hour until 1842. The first service between Angmering and Worthing departs at 0805 with the last return from Worthing departing at 1828.

Table 4.2: Peak Hour Bus Journey Times (Monday to Friday)

Bus Departs from Weavers Hill	Bus Arrival			
	Rail Station	Littlehampton (Anchor Springs)	Worthing (Marine Parade)	Lancing (Carnforth Road)
07:01	07:12	07:34	-	-
07:56	08:08	08:34	-	-
09:01	09:13	09:39	-	-
08:05	-	-	08:40	08:57
09:11	-	-	09:45	10:02

Bus Departs				Bus Arrives at Weavers Hill
Lancing (Carnforth Road)	Worthing (Marine Parade)	Littlehampton (Anchor Springs)	Rail Station	
-	-	16:34	17:02	17:12
-	-	17:42	18:10	18:19
17:12	17:28	-	-	18:06
18:12	18:28	-	-	19:02
-	-	18:42	19:10	19:19

Source: Traveline/ Stagecoach

4.4.4 Table 4.2 above demonstrates that buses depart and arrive at Weavers Hill at times suitable for accessing local employment centers in the morning and evening peak periods. The site is therefore shown to be accessible to a regular bus service which provides a realistic opportunity for commuting to local centers including Littlehampton, Lancing and Worthing. This accommodates a range of journey purposes including travel to/from work, education, leisure and retail trips.

- 4.4.5 Bus service 9 provides services which connect well with the train times for services to destinations such as Brighton and Bognor Regis, with trains leaving at 0734 and 0817 for services to Bognor returning at 1742 and 1842, and with trains to Brighton leaving at 0726 and 0823 and returning at 1645, 1800 and 1900.

Rail

- 4.4.6 Angmering rail station is located to the south-west of the village with rail services operated by Southern. Table 4.3 summarises the train services currently operating from the station.

Table 4.3 – Angmering Station – Rail Services

Destination	Typical Frequency (per hour)			Average Journey Duration
	Peak	Off-Peak	Sunday's	
Littlehampton	3	3	2	10mins
Worthing	5	4	3	11mins
Bognor Regis	2-3	2	2	25mins
Brighton	5	4	3	38mins
Portsmouth Harbour	2-3	2	2	50mins
Southampton Central	2	2	1	70 mins
London Victoria	5	4	2	100 mins

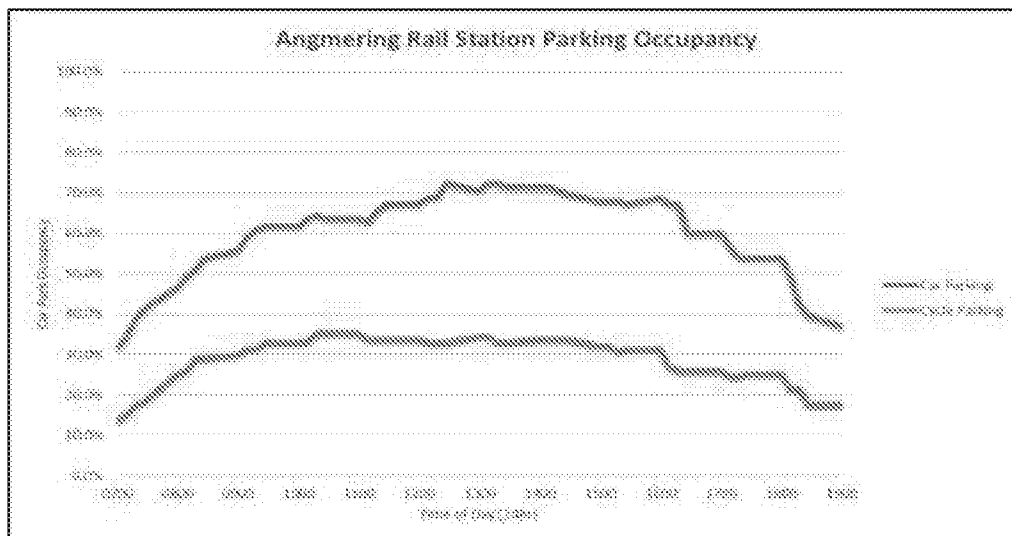
Source: National Rail Enquiries

- 4.4.7 Table 4.3 demonstrates that Angmering benefits from a frequent rail service to key destinations such as Littlehampton, Worthing, Brighton, London and Portsmouth.

Rail Station Car Parking

- 4.4.8 The rail station has 113 car parking spaces, three accessible car parking spaces, and 130 sheltered cycle parking spaces. A parking survey was conducted at Angmering Rail station on Wednesday 4 May 2016 to establish the existing use of the car park across the day for both cars and cycles.
- 4.4.9 Image 4.3 presents a car parking occupancy assessment which demonstrates that there is sufficient existing capacity for both car and cycle parking by future residents at Angmering Rail Station.

Image 4.3: Angmering Rail Station Percentage Occupancy



Source: i-Transport and parking surveys

4.4.10 Image 4.3 demonstrates that the car parking demand never exceeds 75% with the capacity, with demand falling in the inter-peak period between 1300-1400. This equates to a minimum of 28 spaces unoccupied.

4.4.11 Cycle parking demand never exceeds 40% but remains above 30% from 0800-1600 which is consistent with the traditional working day. This equates to a minimum of 78 spaces unoccupied.

4.5 Local Highway Network

4.5.1 Water Lane forms the northern boundary of the site and provides the primary road connection from the A280 to Angmering village. To the west Water Lane provides access towards the existing residential roads within Angmering and the village centre facilities. To the east Water Lane provides connections to the priority junction with the A280. No right turn onto the A280 is permitted.

4.5.2 Water Lane is a single carriageway road circa 6m in width, and is subject to a 30mph speed limit, which increases to 60mph approximately 100m west of the access to the Oval Raceway. There are no footways provided on either side of Water Lane in the vicinity of the site however a footway is provided to the west, which begins at the Dappers Lane junction. Water Lane benefits from street lighting and is traffic calmed.

- 4.5.3 The High Street forms the southern boundary of the site and provides a route to the south along Roundstone Lane towards Angmering Community Centre and The Angmering School as well as the A259 Roundstone by-pass road. Roundstone Lane is subject to a 30mph speed limit and is traffic calmed in the form of speed humps, roundels and narrowing's.
- 4.5.4 Weavers Hill forms the western boundary of the site and provides a route from southern Angmering onto Water Lane. Weavers Hill is subject to a 30mph speed limit and has no footways.
- 4.5.5 Angmering lies to the south of the A27, which can be accessed via two roundabouts on the A280. The A27 forms part of the Strategic Road Network (SRN) and provides a link between Chichester and Portsmouth to the west which are approximately 25km and 55km away respectively. The A27 also provides access to Brighton and Eastbourne to the east, which are approximately 25km and 60km away respectively.

Local Highway Network Traffic Flows

- 4.5.6 Traffic flows along Water Lane were surveyed using a week-long Automatic Traffic Counter (ATC) between 24 November to 1 December 2015. The results of the survey to show the average weekday are summarised in Table 4.4.

Table 4.4: Water Lane Traffic Flows (weekday average)

Time Period	Eastbound		Westbound		Two-Way	
	Total Vehicles	HGV %	Total Vehicles	HGV %	Total Vehicles	HGV %
Morning Peak (0800 – 0900)	367	<1%	295	1.4%	662	<1%
Evening Peak (1700 – 1800)	177	<1%	516	<1%	693	<1%

Source: ATC Surveys – November 2015

- 4.5.7 The following weekday average two-way flows were recorded on Water Lane:
- Morning peak hour: 662 two-way vehicle movements (<1% HGVs), approximately 55% of which travel eastbound and 45% westbound; and
 - Evening peak hour: 693 two-way vehicle movements (<1% HGVs), approximately 25% of which travel eastbound and 75% westbound.

4.5.8 Traffic flows on Water Lane are tidal, with more vehicles travelling eastbound towards the A280 in the morning peak hour and westbound into Angmering in the evening peak hour. Recorded flows are lower in the morning peak hour.

4.5.9 In addition to recording traffic flows on Water Lane, to inform the TA a large number of Manual Classified Turning Count Traffic surveys were carried out on the local transport network during November 2015, which as defined by the DfT's WEBTAG Guidance is a neutral traffic month.

4.5.10 The scope and timing of the surveys were agreed with WSCC as part of the scoping process and comprised the following junctions:

- Water Lane / A280 priority junction;
- Water Lane with Dappers Lane priority junction;
- Water Lane with Weavers Hill priority junction;
- Water Lane with Arundel Road priority junction;
- Water Lane with High Street priority junction;
- A259 / Mill Lane / Golfers Lane roundabout;
- A259 / Station Road / B2140 roundabout;
- A259 Roundstone by-pass Road / Roundstone Lane roundabout;
- A280 / B2140 / Littlehampton Road roundabout;
- A259 / Goring Street / A2700 Titnore Lane roundabout.
- A280 / Titnore Lane / A27 westbound off-slip / A27 westbound on-slip; and
- Long Furlong / A27 eastbound on-slip / A280 / A27 eastbound off-slip and Arundel Road roundabout.

4.5.11 The morning peak period is identified as 07:45 – 08:45, and the evening peak 17:30 – 18:30. Traffic Flow diagrams, which show the observed traffic flows during the morning and evening peaks are provided at **Figures TF1-TF2**.

4.5.12 Table 4.5 summarises the peak traffic flows on a selection of roads local to the site.

Table 4.5: Observed Local Road Conditions

Road	Direction	Morning Peak	Evening Peak
Water Lane (at Site Access)	Eastbound	437	234
	Westbound	268	329
Water Lane (West of High Street)	Eastbound	370	274
	Westbound	422	323
A280 (North of Water Lane)	Northbound	796	468
	Southbound	602	832
A280 (South of Water Lane)	Northbound	326	330
	Southbound	347	487
Station Road (North of A259)	Northbound	550	346
	Southbound	505	458
Weavers Hill (South of Water Lane)	Northbound	113	34
	Southbound	70	145
Roundstone Lane (North of A259)	Northbound	118	217
	Southbound	144	234
A259 (west of Station Road)	Eastbound	1,528	1,383
	Westbound	1,432	1,609
A259 (East of Roundstone Lane)	Eastbound	1,197	1,293
	Westbound	858	1,242

Source: MCC Surveys – November 2015

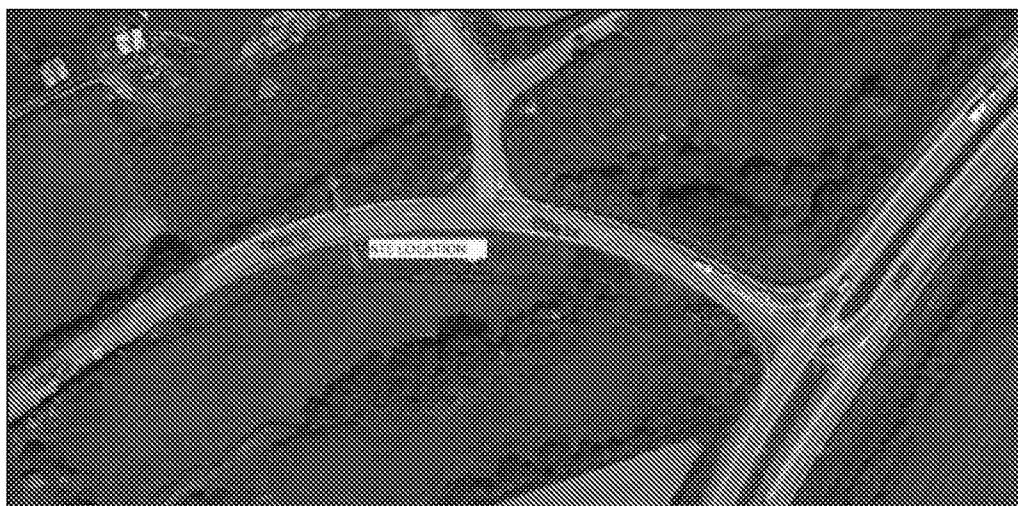
4.5.13 The traffic surveys demonstrate that:

- Traffic flows on Water Lane are modest and are generally tidal;
- Traffic flows on the A280 are significantly greater to the north of Water Lane, due to traffic movements associated with accessing Angmering village;
- The A259 is a busy and strategic road connection that carries a significant flow of traffic in both peak periods; and
- Weavers Hill and Roundstone Lane are relatively lightly trafficked.

Vehicle Speeds on Water Lane

- 4.5.14 An ATC survey was carried out in July 2015 to consider traffic speeds along Water Lane in the vicinity of the site. The location of the survey is shown in Image 4.4.

Image 4.4: Location of ATC survey on Water Lane



Source: Google Maps

- 4.5.15 In accordance with the guidance set out in DMRB TA 22/81 '*Vehicle Speed Measurement*', vehicle speeds have been established for the preferred times for undertaking speed surveys, i.e. between 10:00-12:00 and 14:00-16:00 hours. In accordance with the guidance set out in the DfT's TA 22/81 '*Vehicle Speed Measurement on All Purpose Roads*' a reduction of 4kph (2.5mph) is required to get from the 85th percentile dry weather to the wet weather journey speed which is the parameter used to determine the required stopping sight distance for existing streets.
- 4.5.16 Table 4.6 sets out the observed average and 85th percentile dry and wet weather speeds for eastbound and westbound vehicles on Water Lane.

Table 4.6: Speed Survey Results – Water Lane

Road / Direction	Direction	Average	Dry Weather	Wet Weather*
Water Lane [115m west of the A280]	Eastbound	35.6mph	41.1mph	38.6mph
	Westbound	33.2mph	38.5mph	36.0mph

Source: Speed Surveys – July 2015

- 4.5.17 Table 4.6 demonstrates that average vehicle speeds on Water Lane are a little above 30mph however they are significantly below the de-restricted speed limit that is currently in place to the east of the site. 85thile speeds are shown to be below 40mph.

4.6 Personal Injury Accident Analysis

4.6.1 Personal Injury Accident (PIA) data has been obtained from Sussex Safer Roads Partnership for the most recent five-year period between 1 April 2011 and 31 March 2016 (**Appendix E**). The study area includes:

- Water Lane up to the junction with Arundel Road including the junctions with Dappers Lane and Weavers Hill;
- The junction of Water Lane with the A280;
- The A280 north from Water Lane up to the A27 inclusive of the two roundabouts at the A27;
- Weavers Hill, Cumberland Road and High Street.

4.6.2 Analysis of the data has been undertaken, and Table 4.7 provides a summary of the PIAs that have occurred.

Table 4.7: PIA Data Summary

Vehicle	Fatal	Serious	Slight	Total
Motor Vehicle	0	3	27	30
2 Wheeled Motor Vehicle	0	2	1	3
Pedestrians	0	0	0	0
Pedal Cycle	0	0	2	2
Total	0	5	30	35

Source: Sussex Safer Roads Partnership

4.6.3 The data identifies that a total of 35 PIA's have occurred within the study area. These can be summarised as follows and are set out in full in report reference ITB9105-010 TN PIA Analysis at **Appendix F**:

- No PIA's occurred at the Water Lane Weavers Hill Junction;
- Eight accidents have occurred on the A280 between Ecclesden Lane and the A27 Roundabouts;
- Three accidents occurred at the A280/ Water Lane Junction;
- Two accidents occurred at the junction of Dappers Lane and Water Lane;

- Four accidents occurred along Station Road/Water Lane between Weavers Hill and Mill Road;
- Severn accidents occurred at the High Street Weavers Hill Junction;
- Eight injury accidents occurred on the A27 roundabouts; and
- Three accidents occurred on the A27 through the A280 junction.

4.6.4 The number, cause and severity of accidents are considered to be fairly typical of a study area of this scale and the detailed assessment does not identify any accident trends or patterns which would suggest that there are any significant safety issues.

4.7 **Summary**

4.7.1 The site is located within close proximity to a network of existing and proposed walking and cycling facilities which offer safe and convenient routes to local services and facilities on key desire lines, including the retail facilities in Angmering centre.

4.7.2 Angmering has a regular bus service which provides good accessibility to wider destinations, including Littlehampton and Worthing and the timing and frequency of rail services from Angmering rail station provides the opportunity to travel to destinations further afield including London. A review of car and cycle parking capacity at the rail station demonstrates that there is spare capacity.

4.7.3 The site is well connected to the local and strategic road network. Extensive surveys have been carried out to identify the existing conditions on the local highway network and to identify the local network peak periods.

4.7.4 A review of the personal injury accident data does not indicate any specific highway safety problem on the local highway network.

SECTION 5 SITE ACCESS ARRANGEMENTS, SERVICING AND PARKING

5.1 Introduction

- 5.1.1 This section of the TA sets out the proposed site access arrangements from the local highway network along with servicing and parking provision.

5.2 Site Access Arrangements

- 5.2.1 The NPPF at paragraph 32 requires that;

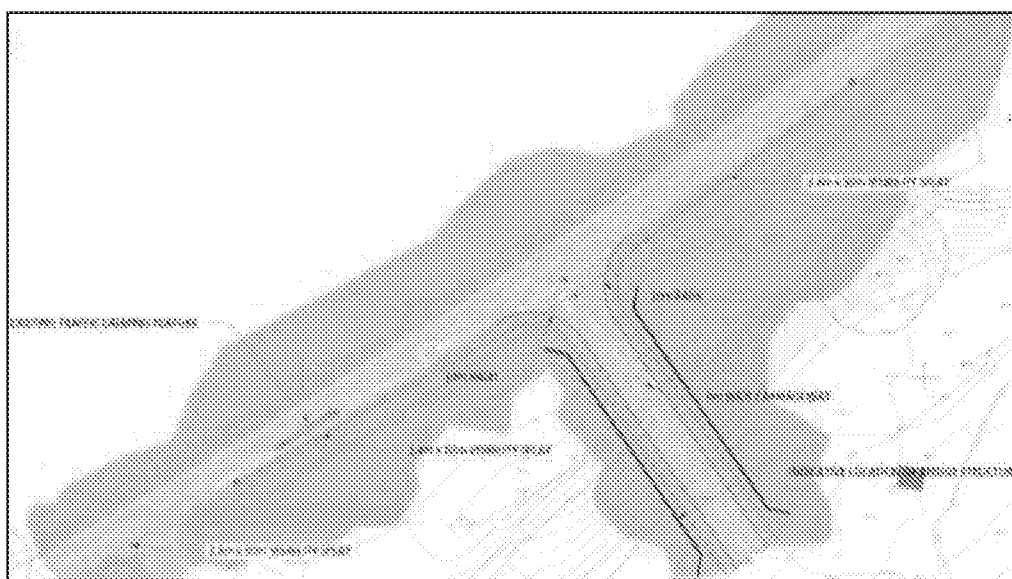
“Safe and suitable access to the site can be achieved for all people”

- 5.2.2 In order to achieve safe access, the development proposal includes the delivery of a new vehicular accesses to Water Lane, and connections to the existing footway network from Weavers Hill and High Street. These access proposals are described in the following sections and are shown in principle on **Figure T4**.

Vehicular Access

- 5.2.3 Access to the development is proposed in the form of a simple priority junction to Water Lane as shown in principle at Image 5.1 and on **Drawing ITB9105-GA-022**. The access is proposed as a 6.0m wide carriageway and 10m radii to Water Lane to ensure the safe and effective manoeuvring of likely vehicles.
- 5.2.4 The access road will need to be raised over the existing water course running to the south of Water Lane. This will be provided in the form of a bridge structure.

Image 5.1: Site Access Proposals



5.2.5 The access has been designed in line with guidance in MfS. The applicability of this guidance in this location is confirmed in the MfS2 which states at paragraph 1.3.2:

“..... most MfS advice can be applied to a highway regardless of speed limit. It is therefore recommended that as a starting point for any scheme affecting non-trunk roads, designers should start with MfS.”

5.2.6 Paragraph 1.3.6 goes on to state that:

“It is only where actual speeds are above 40mph for significant periods of the day that DMRB parameters for SSD are recommended. Where speeds are lower, MfS parameters are recommended. Where there may be some doubt as to which guidance to adopt, actual speed measurements should be undertaken to determine which is most appropriate.”

5.2.7 Table 4.6 provides the results of the speed survey on Water Lane which returned 85th percentile wet weather speeds of 38.6mph eastbound and 36.0mph westbound along Water Lane.

5.2.8 Against this background, the guidance on visibility provision given in MfS is applicable in this location. In line with the formula for deriving SSD presented in MfS, the following visibility requirements at the site access are required:

- 2.4m x 62m to the left, suitable for a 38.6mph design speed; and
- 2.4m x 56m to the right, suitable for a 36.0mph design speed.

5.2.9 The proposed access (**Drawing ITB9105-GA-022**) identifies how this visibility can be delivered at the access. In practice, due to the straight nature of Water Lane, significantly greater visibility can be achieved (in excess of 200m plus) that the MfS guidance suggests.

5.2.10 Swept path analysis has been undertaken to demonstrate that the site accesses can accommodate refuse vehicles. The swept path analysis is shown on **Drawing ITB9105-GA-027**. This demonstrates that satisfactory access can be achieved for a refuse vehicle.

5.2.11 A Stage One Road Safety Audit has been undertaken on the proposed access onto Water Lane. The audit did not raise any issues with the proposed design. A copy of the audit is included at **Appendix G**.

Non-Vehicular Access

5.2.12 Two additional points of access to the site are proposed, for the sole use of pedestrians and cyclists. These points of access for sustainable modes are as follows:

- The provision of a new 3m footpath link to the west of the site onto Weavers Hill to allow access into central Angmering along Cumberland Road. This will provide staggered barriers (or another control system) at the end to control cyclists speeds and to make clear the need for cyclists to give way. The southbound flag stop will also be re-located to the proposed footpath, whilst an area of hardstanding in the existing verge for northbound buses will be provided to cater for existing and future residents. These proposals are shown on **Drawing ITB9105-GA-026**.
- The provision of a new footpath / cycleway link to the south at High Street to connect into the improvement works to the east of the High Street to be implemented as part of the Manor Nurseries committed development site. Cyclists will be able to access on to the carriageway as this is a very lightly trafficked route and suitable for cyclists. These proposals are shown on **Drawing ITB9105-GA-029**.

5.2.13 A Stage One Road Safety Audit has been undertaken on the proposed footpath link onto Weavers Hill. The audit recommended the provision of hazard paving at the start/termination of the shared facility. The drawing has been updated to take account of this recommendation. A copy of the audit along with the designer's response is included in **Appendix H**.

5.2.14 A Stage One Road Safety Audit has been undertaken on the proposed footpath/cycleway link to the south at High Street. The audit recommended hazard paving at the start termination of the shared facility, and staggered barriers / gates / bollards to slow down cyclists exiting the shared surface facility. The drawing has been updated to take account of this recommendation. A copy of the audit along with the designer's response is included in **Appendix I**.

5.2.15 Both points of access will also be available as emergency accesses in the (unlikely) event that the main vehicular route is blocked.

5.2.16 To ensure that the routes to both High Street and Weavers Hill allow for attractive and convenient access on foot and by cycle, but also that they enable emergency vehicle access without enabling general vehicles to use the connections, a control system will be required at each of the two accesses.

5.2.17 There are a number of examples of these systems which comprise:

- **Staggered Gates** (Image 5.2 – left image) – Two locked gates are positioned one staggered behind the other. This results in unconstrained access on foot and by cycle, whilst controlling cycle speeds. In the event of emergency access being required the gate can be unlocked and opened to enable emergency vehicle access;
- **Demountable Bollards** (Image 5.2 – right image) – A lockable demountable bollard is placed in the path to prevent vehicle access. This can be removed to allow emergency vehicle access as required;
- **Lateral Gates** (Image 5.3 – Left image) – Two locked gates are positioned either side of the access to allow sufficient space for pedestrians and cyclists to pass unimpeded, but insufficient width for vehicles to access the path. In the event an emergency vehicle requires access, one or both of the gates would be unlocked and opened; and
- **Gated Chicane** (Image 5.3 - right image) – A locked maintenance gate is provided adjacent to a chicane pedestrian and cycle entrance.

5.2.18 Each of the options presented would be applicable to the site at Angmering, and the detail of the access restriction will be confirmed at the reserved matters stage. It is however likely that in view of the Safety Audit recommendations that a staggered gate system will be deployed.

Image 5.2: Access Control Systems

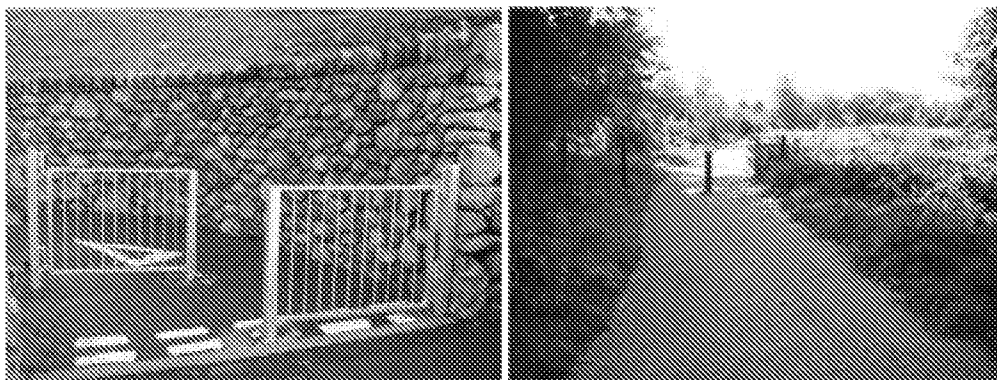
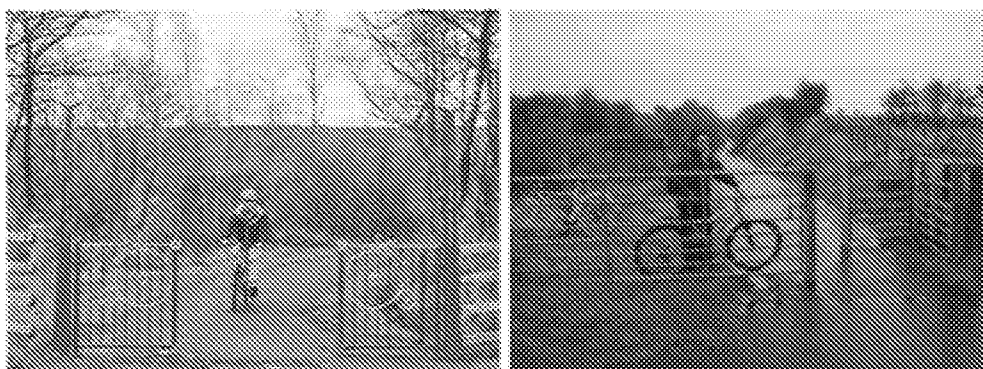


Image 5.3: Access Control Systems



Source: Sustrans: A guide to controlling access on paths (2012)

5.3 Service and Refuse Collection Arrangements and Emergency Access

5.3.1 The detailed layout of the scheme (which would need to be determined via a separate reserved matters application) will have due regard to the guidance on carry distances for refuse provided in Schedule 1, Part H of the Building Regulations (2000):

- Residents should not be required to carry waste more than 30m (excluding any vertical distance) to the storage point; and
- Waste collections should be able to get within 25m of the storage point.

5.3.2 The site layout will be designed to the guidance in Section 6.8 of the Manual for Streets. Where appropriate, bin stores will be provided such that a refuse vehicle will not have to enter any smaller cul-de-sacs of 55m or less in length.

5.3.3 The site layout will also meet the MfS requirements in terms of providing access for emergency vehicles, with multiple access to the site for emergency vehicles provided at Water Lane, High Street and Weavers Hill. All roads within the site will provide in excess of 3.7m width (the required working width for a fire tender).

5.4 Parking

5.4.1 A future reserved matters application would deal with the provision of car parking, which would be provided in accordance with the car parking standards at that time.

5.4.2 A statement of intent with regards to parking is as follows:

- Car and cycle parking to be provided in accordance with local parking standards as set out in adopted guidance;
- Non-curtilage allocated car parking ideally to be located within 25m of individual dwellings;
- Within parking courts, a proportion of parking would be unallocated to provide for efficient use; and
- On-street parking where appropriate to be provided within discrete parking bays on the main routes.

5.4.3 The illustrative masterplan (**Appendix A**) demonstrates a feasible layout which can deliver a level of parking consistent with the current adopted parking standards.

Cycle Parking

5.4.4 Future reserved matters applications would provide details of cycle parking provision. Adequate cycle parking facilities would be provided for the proposed homes in secure covered parking, such as within a garage or shed. Accordingly, cycle parking would be provided in accordance with the standards set out in Table 5.1.

Table 5.1: Cycle Parking Standards

Dwelling Type	Size	Provision
Houses	Up to 4 rooms (1 & 2 bed)	1 space
Houses	5+ rooms (3+ bed)	2 spaces
Flats	Up to 3 rooms (1 & 2 bed)	0.5 space (if communal storage, otherwise same as 1 & 2 bed house)
Flats	4+ rooms (3+ bed)	1 space

Source: West Sussex County Council Guidance for Car Parking in New Residential Developments (September 2010)

5.5 Summary

- 5.5.1 The development proposal comprises an outline planning application for the development of up to 175 residential dwellings, which will comprise a combination of houses and apartments and will deliver a significant proportion of affordable dwellings.
- 5.5.2 Vehicular access is proposed to the site through a new T-junction to Water Lane. The proposed access has been designed in accordance with the relevant design guidance contained in Manual for Streets and delivers sufficient geometry and visibility to ensure the safe movement of vehicles through the junction.
- 5.5.3 The proposed development will deliver a permeable site layout, and will offer a number of different connections to the local walking and cycling networks, to ensure the site is safely accessible by all. This includes the provision of designated pedestrian and cycle accesses to both Weavers Hill and High Street.
- 5.5.4 In this regard, it is demonstrated that the site will deliver safe and suitable access, and that the proposed development complies therefore with para 32 of the NPPF.
- 5.5.5 The proposed development will deliver car and cycle parking in line with the relevant adopted guidance and will promote a site layout that has been developed in accordance with the principles of Manual for Streets. The layout, and precise number and mix of parking will be determined at the reserved matters stage.

SECTION 6 TRANSPORT SUSTAINABILITY

6.1 Introduction

6.1.1 Paragraph 32 of the NPPF sets out that development proposals should ensure that:

“Opportunities for sustainable transport modes have been taken up depending on the nature and location of the site to reduce the need for major transport infrastructure”

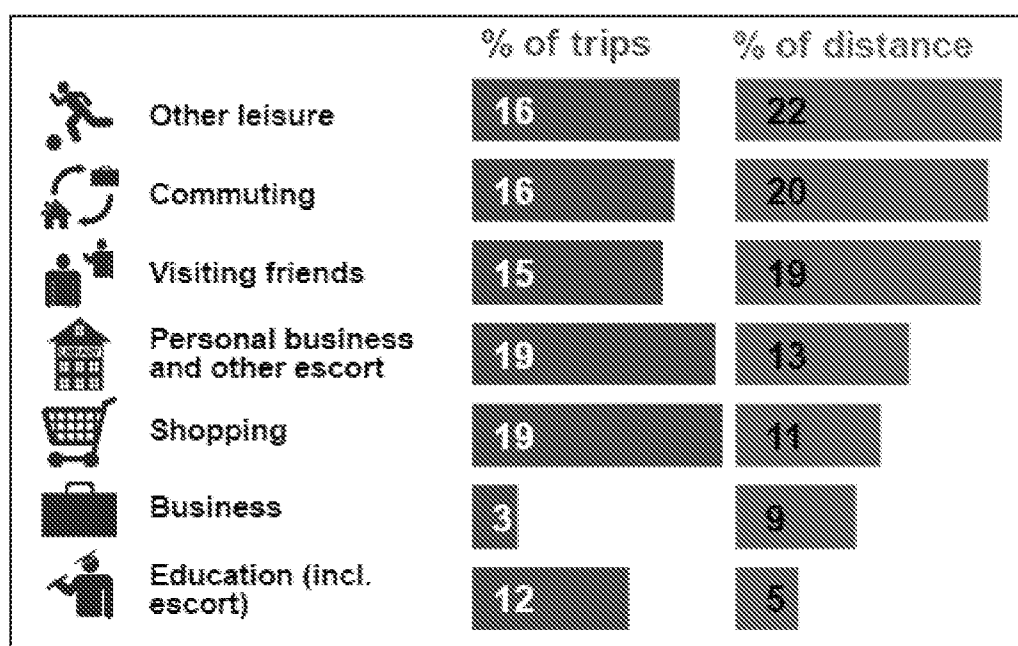
6.1.2 This section of the TA considers the accessibility of the site to key local services and facilities by walking, cycling and public transport. The opportunities for sustainable travel to the site are identified, and a package of measures is outlined which seeks to ensure that these opportunities are taken up.

6.2 Journey Purpose and Key Destinations

6.2.1 In promoting sustainable transport, it is important to consider the reasons why future residents of the proposed development will make journeys.

6.2.2 The DfT’s National Travel Survey provides information on the journey purposes of all trips made annually (Image 6.1). This indicates journey purpose is well spread between leisure, shopping, commuting / business and education / escort education trips.

Image 6.1: Proportion of Trips per Year by Journey Purpose



Source: National Transport Statistics Great Britain 2015 – NTS0401 / NTS0402

Journey to Work Data

6.2.3 The 2011 Census has been analysed to assist in understanding establishing travel patterns for people living Angmering. Table 6.1 summarises the work destinations (excluding those that work from home) for residents of Angmering.

Table 6.1: Journey to Work Destinations (excluding work from home) - Angmering

Destination	% Journey to Work
Arun	33.9%
Angmering	9.6%
Littlehampton	8.9%
Rustington	3.6%
Bognor Regis	3.2%
East Preston	2.9%
Arundel	2.0%
Yapton	1.9%
Ferring	1.0%
Eastergate, Barnham and Walberton	0.8%
Worthing	27.8%
Horsham	7.9%
Chichester	6.8%
Shoreham-by-Sea	4.5%
Brighton and Hove	4.3%
Crawley	3.7%
Burgess Hill	0.8%
Haywards Heath	0.8%
Lewes	0.8%
Havant	0.6%
Portsmouth	0.6%
London	2.6%
Other	4.9%
Total	100%

Source: 2011 Census 'Journey to Work'

6.2.4 The Census data identifies that some 34% of the residents of Angmering and the surrounding area work within Arun district, with 10% of those working within Angmering itself and 9% in Littlehampton. Worthing is the largest employment draw for residents with 28% of Angmering residents working in Worthing.

6.3 Accessibility to Local Facilities

6.3.1 Angmering offers a good range of local facilities and services which future residents are likely to visit on a day to day basis. These are summarised in Table 6.2, with the locations of these facilities shown on a plan at **Figure T3**.

Table 6.2: Key Local Destinations

Purpose	%	Destination	Reference	Walking Distance (m)
Leisure Other	26%	The Spotted Cow Pub	L9	260
		The Lamb at Angmering Pub	L10	740
		Angmering Village Hall	L8	930
		Angmering Community Centre	L7	1,020
		Bramley Green Park	L4	1,020
		Worthing Rugby Football Club	L5	1,090
		Ham Manor Golf Course	L2	2,730
		Rustington Golf Course	L1	3,340
		Virgin Active Rustington	L3	3,340
		Out of Bounds	L6	3,340
Retail	19%	Angmering Village Centre	-	800
		The Co-Operative Food	R2	800
		Haskins Garden Centre	R7	1,920
		Hobby Craft	R3	1,950
		Sainsbury's	R5	2,480
		Halfords	R4	2,740
		Rustington Retail Park	R6	2,740
		Wyevale Garden Centre	R8	2,900
		Asda	R9	3,000
Commuting /Business	19%	Angmering Village Centre	EM1	800
		West End Nursery	EM4	1,300
		Rustington Retail Park	EM2	2,740
		Rustington Trading Park	EM3	3,860
Education	12%	Angmering Village Pre-School	ED2	930
		St Wilfred's Catholic Primary School	ED4	1,075
		Angmering Day Nursery	ED1	1,130
		The Angmering School	ED5	1,550
		St Margaret's CofE Primary School	ED3	1,640
Personal Business	10%	Cornerways Dental Practice	H2	460
		Lloyds Pharmacy	H1	980
		Angmering Medical Centre	H3	980

- 6.3.2 Angmering village centre is located within a short (800m) walking distance of the site. This includes a local convenience store located on Water Lane to the east of the junction with the High Street as well as a Post Office and other local shops and services.
- 6.3.3 The site is also very well located to the local education facilities. There are two primary schools located close to the site on Arundel Road, St Margaret's CofE and St Wilfred's Catholic schools and in addition a nursery. The local secondary school is located to the south west of the site off Greenwood Drive.
- 6.3.4 Angmering also has a number of leisure facilities close to the site. These include golf clubs, garden centres, a community centre as well as a park.
- 6.3.5 In summary, within close proximity of the site there are a good range of shops and facilities including healthcare, leisure, retail and local schools that can satisfy many daily demands of the development.

6.4 Walking Connections

- 6.4.1 Paragraph 4.4.1 of the Manual for Streets identifies that *"Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes' (up to about 800 m) walking distance of residential areas"* and *"this is not an upper limit and PPG13 states that walking offers the greatest potential to replace short car trips, particularly those under 2km."*
- 6.4.2 Section 6.3 of CIHT 'Planning for Walking' suggests that most people will only walk if their destination is less than a mile away (1.6km):

"Across Britain, approximately 80% of journeys shorter than 1 mile are made wholly on foot – something that has changed little in 30 years. The main reason for the decline in walking is the fall in the total number of journeys shorter than 1 mile, which has halved in thirty years. It is not that people are less likely to make short journeys on foot but rather that fewer of the journeys they make can be accomplished on foot. If destinations are within walking distance, people are more likely to walk if walking is safe and comfortable and the environment is attractive."

and

"most people will only walk if their destination is less than a mile away. Lane use patterns most conducive to walking are thus mixed in use and resemble patchworks of "walkable neighbourhoods," within a typical catchment of around 800m or 10 minutes' walk."

- 6.4.3 This is corroborated by the National Travel Survey (NTS) 2015 which identifies the mode share journeys of different lengths (Image 6.2) and confirms that the vast majority (76%) of trips of up to one mile (1.6km) are undertaken on foot.

Image 6.2: Mode Share of Trips by Main Mode for Different Trip Lengths: England

Main mode	Percentage						Unweighted sample size (trips '000s)
	Under 1 mile	1 to under 2 miles	2 to under 5 miles	5 to under 10 miles	10 to under 25 miles	25 miles and over	
Walk	76	32	4	-	-	0	58
Bicycle	2	3	2	1	1	-	5
Car / van ¹	21	58	77	90	82	80	166
Local bus	1	5	12	10	5	1	17
Rail ²	-	-	1	5	9	18	8
Other transport ³	1	2	3	3	3	4	5
All modes	100	100	100	100	100	100	258

Source: NTS 2015 – NTS0308

- 6.4.4 Providing new homes within one mile (1.6km) of facilities and services will provide the greatest opportunity for a significant proportion of trips to be made by walking.
- 6.4.5 That is not to say that a mile is the maximum that people are prepared to walk, or that development must be located within a mile of everything and the NTS data (Image 6.1) identifies that a significant proportion (around one-third) of journeys between one and two miles are undertaken on foot. This demonstrates that walking is a realistic and viable travel option for many people for such journeys.
- 6.4.6 This is supported by paragraph 2.3 of the DMRB TD91/05 '*Provision for Non-Motorised Users*', which identifies that walking is a 'normal' mode of transport for journeys undertaken within a range of two miles, as follows:

"Walking is used to access a wide variety of destinations including educational facilities, shops, and places of work, normally within a range of up to 2 miles. Walking and rambling can also be undertaken as a leisure activity, often over longer distances".

- 6.4.7 Against all of this background, the following walking distances are identified:
- 800m – A comfortable and attractive walking distance in line with the walkable neighbourhood's concept;
 - 1,600m – A reasonable walking distance i.e. the distance within which circa three-quarters of all journeys are made on foot;
 - 3,200m – A maximum walking distance i.e. the distance within which a significant proportion (circa one-third) of journeys will still be on foot.

Walking Distance to Education

6.4.8 The recent DfE Guidance^[1] identifies statutory walking distances to school (after which home to school transport must be provided). This identifies that children under 8 years of age can be expected to walk up to 2 miles (3.2km), with children between 8 and 16 years of age walking up to 3 miles to school (4.8km). The development at Land South of Water Lane is comfortably within these walking distance thresholds, and as such it can be expected that a proportion of children will walk to school.

Walking Routes

6.4.9 There are two key pedestrian routes between the site and local services and facilities in Angmering. Route 1 provides a link between the site and Angmering Village centre via Weavers Hill and Route 2 provides a link via the High Street. These are summarised below with a full assessment contained in the NMU Audit in **Appendix D** of this TA.

Route 1 – Development towards Weavers Hill, Cumberland Road and Water Lane

6.4.10 This route provides a direct connection to the local services in Angmering centre as well as the bus stops. The route crosses Weavers Hill and follows Cumberland Road before joining Water Lane. An assessment of the route identifies that it is:

- **Convenient** – The route offers direct access to the village;
- **Accessible** – Existing footways offer segregated pedestrian access to the village centre with (generally) appropriate crossing facilities;
- **Safe** – Segregated, street-lit, footways separate traffic from pedestrians and the route follows slow and lightly trafficked routes;
- **Comfortable** – Footways are sufficiently wide to pass two pedestrians and the route is generally flat, making walking comfortable; and
- **Attractive** – The slow speed of adjacent streets and provision of street lighting mean the route is attractive.

6.4.11 Overall the route is of a good standard and is attractive for pedestrians. There are a number of missing dropped kerbs which could be delivered to improve the route.

^[1] DfE 'Home to School Travel and Transport Guidance: Statutory guidance for local authorities' July 2014 (section 1.3)

Route 2 – Proposed development towards High Street and Roundstone Lane

6.4.12 Route 2 provides access to a number of facilities within Angmering including the rail station and The Angmering School. The route assessment identifies that it is:

- **Convenient** – The route offers direct access to local facilities;
- **Accessible** – Aside from the first section of High Street, existing footways offer segregated pedestrian access to local facilities;
- **Safe** – Segregated footways are in good condition and adjacent roads are lightly trafficked with natural surveillance and street lighting;
- **Comfortable** – Footways are sufficiently wide to pass two pedestrians; and
- **Attractive** – Footways are generally separated from the carriageway by a verge and much of the route benefits from attractive landscaping.

6.4.13 Overall the route is of a good standard and is suitable for use by pedestrians.

Improvements to Walking Facilities

6.4.14 West Sussex County Council proposes to implement a traffic calming scheme in Angmering. This will result in speed reducing measures along Water Lane including an extension of the 20mph zone east of Dappers Lane and a new footway extension with crossing point at the corner of Water Lane and the High Street. This will improve the attractiveness of Route 1 through reducing traffic speeds along Water Lane and the High Street. Additionally, the current puffin signalised crossing will be upgraded to a raised table signal crossing which will improve safety by causing cars to slow down in the vicinity of the signalised crossing.

6.4.15 A 20mph zone will be implemented immediately south of where Route 2 joins Roundstone Lane. Additionally, a new raised table at the junction of Roundstone Lane and Nursery Road will improve pedestrian opportunities to cross. Roundstone Lane will also have traffic calming features installed along its length with existing raised tables replenished and existing cushions replaced with flat top humps.

6.4.16 The missing footway at the High Street is due to be delivered by Manor Nurseries (**Appendix C**) which will further improve the route.

6.5 Cycling Distances

6.5.1 DMRB TA 91/05 "Provision for Non-Motorised Users" paragraph 2.11 records that:

"Cycling is used for accessing a variety of different destinations, including educational facilities, shops and places of work, up to a range of around 5 miles. Cycling is also undertaken as a leisure activity, often over much longer distances. As well as being a mode of transport in its own right, cycling frequently forms part of a journey in combination with cars and public transport."

6.5.2 Guidance within CIHT "Planning for Cycling" also states that:

"The majority of cycling trips are for short distances, with 80% being less than five miles and with 40% being less than two miles. However, the majority of trips by all modes are also short distances (67% are less than five miles, and 38% are less than two miles); therefore, the bicycle is a potential mode for many of these trips (DfT, 2014a)..."

6.5.3 Paragraph 1.5 in the Department for Transport's (DfT) Local Transport Note 2/08 'Cycle Infrastructure Design' (October 2008) states that:

"Urban networks are primarily for local journeys. In common with other modes, many utility cycle journeys are under three miles (4.8km) (ECF, 1998), although for commuter journeys, a trip distance of over 5 miles (8km) is not uncommon."

6.5.4 Data provided within the National Travel Survey demonstrates that the average distance per journey by bike is approximately 4.4km, with the current average length of an employment and leisure cycle trip some 5.2km.

6.5.5 On this basis, a 3.2km cycle distance is considered to be 'attractive', a 5km cycling distance is considered to represent a 'reasonable' cycle distance, with 8km considered to be a 'maximum' cycling distance.

6.5.6 All of the local facilities and services located around in and around Angmering village are within an attractive cycle distance from the site, with many other facilities located between within a reasonable distance (2km-5km) including the pharmacy, Angmering Medical Centre, Rustington Trading Park and Angmering Community Centre.

6.5.7 Angmering provides two dedicated cycle facilities which are of use to future residents. Water Lane to the north of the site has an on-road cycle route connecting into Angmering village centre. An off-road cycle route also provides access from Roundstone Lane to The Angmering School.

- 6.5.8 Image 6.3 provides a replication of Table 4.1 from the DfT's Local Transport Note (LTN) 02/08 which describes the hierarchy of cycle facilities that should be followed.

Image 6.3: Hierarchy of cycle provision

Consider	Possible actions	
First  Last	Provide for cyclists in the carriageway	Traffic speed/volume reduction
		HGV reduction
		Junction/hazard site treatment
	Create new shared use routes	Reallocation of carriageway space
	Convert pedestrian routes to shared use	

Source: Table 4.1 LTN02/08

- 6.5.9 In view of this advice, the first consideration should be to retain where possible cycle use within the carriageway as is generally the case within Angmering. Assessment of the local PIA data identifies only two slight injury accidents over the last 5 years involving pedal cycles which does not suggest that there is any inherent safety issue with existing cycling facilities.

- 6.5.10 WSCC's traffic calming scheme due to be implemented along Roundstone Lane will improve the attractiveness of cycling from the site in and around Angmering. Traffic calming measures along Roundstone Lane to the south will reduce traffic speeds making the carriageway even more appropriate than at present for accommodating cycles (*MfS, para, 6.4.1*).

- 6.5.11 It is therefore considered that the use of residential roads within Angmering by cyclists is both safe and appropriate.

6.6 Public Transport

Bus

- 6.6.1 The site is well located to existing bus services which provide opportunity for trips to be made to local services and facilities by sustainable modes. Bus services are also important in providing access to destinations for individuals who do not have access to a private car who may otherwise be isolated.

- 6.6.2 Bus service 9 is the main bus route serving the local area surrounding the site. This route operates an hourly service between Shoreham-by-Sea and Littlehampton, including access to Angmering rail station, with bus stops within close proximity of the site (some 300-400m from the centre of the site), as shown on **Figure T3**. The number 9 service provides a regular service to employment destinations outside of Angmering including retail parks in Shoreham, Brighton and City Airport, Lancing Business Park and Northbrook College in Goring-by-Sea.
- 6.6.3 The site is therefore shown to be accessible to a regular bus service that provide connections to key destinations nearby, such as Worthing, Littlehampton and Lancing. This accommodates a range of journey purposes including travel to/from work, education, leisure and retail trips.

Rail

- 6.6.4 Angmering rail station is located to the south west of the village and is operated by Southern. Angmering Station provides links to a number of destinations such as Littlehampton, Worthing, Brighton, London Victoria, Portsmouth and Southampton which demonstrates that the site has access to a frequent rail service.
- 6.6.5 The proposed development is likely to generate around seven two-way rail trips in the morning and evening peak periods (0800-0900 and 1700-1800), based upon the 2011 Census modal split for Angmering. To reach the rail network, these residents are likely to travel either by bus Service 9 from the site, cycle, or drive.
- 6.6.6 In terms of bus access, Service 9 provides a direct connection between the site and the station on an hourly basis. This offers a realistic and attractive option for accessing the rail network and reduces the costs that would be associated with accessing the station by car such as car parking.
- 6.6.7 In relation to cycling, the station is located just over 2km from the site and so falls within a reasonable cycle distance (a 10-minute cycle) from the site. Section 3 has demonstrated that there is ample existing cycle parking available at the station. Cycling is therefore a realistic option for accessing the station for onward travel. There is ample available cycle parking at the station.
- 6.6.8 For those trips that will be undertaken by car, Angmering Rail Station car park has more than adequate capacity to accommodate trips made to the rail station.

6.7 Accessibility Summary

6.7.1 The primary destinations for future residents of the proposed development within the local area are listed in Table 6.4, which includes facilities for education, leisure, retail, employment and health (also shown on **Figure T3**).

6.7.2 The accessibility to each local destination is assessed by each mode of transport to determine whether there are realistic opportunities for sustainable travel. Overall, it is concluded that:

- A large number of destinations are located within an attractive walking distance including the village centre, public houses and bus stops. A large range of further facilities are available in a reasonable walking distance including schools, medical facilities and community and leisure facilities. Existing walking connections are generally attractive and convenient to make walking a realistic option for many local trips;
- All of the village facilities within Angmering itself are located within a short and attractive cycle distance along with further facilities, including particularly the rail station and employment areas adjacent to the A259. Provisions for cycling in Angmering are appropriate to encourage cycling;
- The site benefits from its close proximity to regular bus services which provide a realistic connection to the rail station, employment areas and higher-order centres;
- The site is well located to the national rail network offering regular and direct access to destinations further afield. The station is accessible by walk, car, cycle and by bus. There is sufficient parking for cycles and cars at the station.

Table 6.4: Local Destinations – Accessibility by non-car Modes

Purpose	%	Destination	Accessibility by Non-Car Modes				
			Distance (m)	Walk	Cycle	Bus	Rail
Leisure Other	26%	The Spotted Cow Pub	260	✓✓✓	✓✓✓	N/A	N/A
		The Lamb at Angmering Pub	740	✓✓✓	✓✓✓	N/A	N/A
		Angmering Village Hall	930	✓✓	✓✓✓	N/A	N/A
		Angmering Community Centre	1,020	✓✓	✓✓✓	N/A	N/A
		Bramley Green Park	1,020	✓✓	✓✓✓	N/A	N/A
		Worthing Rugby Football Club	1,090	✓✓	✓✓✓	✓	N/A
		Ham Manor Golf Course	2,730	✓	✓✓	N/A	N/A
		Rustington Golf Course	3,340	-	✓✓	N/A	N/A
		Virgin Active Rustington	3,340	-	✓✓	N/A	N/A
		Out of Bounds	3,340	-	✓✓	N/A	N/A
Retail	19%	Angmering Village Centre	800	✓✓✓	✓✓✓	✓	N/A
		The Co-Operative Food	800	✓✓✓	✓✓✓	✓	N/A
		Haskins Garden Centre	1,920	✓	✓✓✓	✓	N/A
		Hobby Craft	1,950	✓	✓✓✓	✓	N/A
		Sainsbury's	2,480	✓	✓✓	N/A	N/A
		Halfords	2,740	✓	✓✓	N/A	N/A
		Rustington Retail Park	2,740	✓	✓✓	N/A	N/A
		Wyevale Garden Centre	2,900	✓	✓✓	✓	N/A
		Asda	3,000	✓	✓✓	✓	N/A
Commuting/ Business	19%	Angmering Village Centre	800	✓✓✓	✓✓✓	N/A	N/A
		West End Nursery	1,300	✓✓	✓✓✓	N/A	N/A
		Rustington Retail Park	2,740	✓	✓✓	N/A	N/A
		Rustington Trading Park	3,860	-	✓✓	N/A	N/A
		Littlehampton	6,600	-	✓	✓	✓
		Worthing Leisure Centre	6,900	-	✓	✓	✓
		Worthing	10,000	-	-	✓	✓
		Lancing Business Park	14,000	-	-	✓	✓
Education	12%	Angmering Village Pre-School	930	✓✓	✓✓✓	✓	N/A
		St Wilfred's Catholic Primary School	1,075	✓✓	✓✓✓	✓	N/A
		Angmering Day Nursery	1,130	✓✓	✓✓✓	✓	N/A
		The Angmering School	1,550	✓✓	✓✓✓	N/A	N/A
		St Margaret's CoE Primary School	1,600	✓✓	✓✓✓	✓	N/A
Personal Business	10%	Cornerways Dental Practice	460	✓✓✓	✓✓✓	✓	N/A
		Lloyds Pharmacy	980	✓✓	✓✓✓	✓	N/A
		Angmering Medical Centre	980	✓✓	✓✓✓	✓	N/A
Other	4%	Bus Stop on Weavers Hill	360	✓✓✓	✓✓✓	N/A	N/A
		Angmering Rail Station	2,280	✓	✓✓	✓	N/A

Notes: Walk Distances – ✓✓✓ 800m or less ✓✓ between 801m and 1.6km, ✓ between 1.6km and 3.2km
Cycle Distances – ✓✓✓ less than 2km ✓✓ between 2km and 5km, ✓ between 5km and 8km

6.8 Sustainable Transport Strategy

6.8.1 It is demonstrated that the site benefits from its close proximity to a range of local everyday services and facilities that cater for many journey purposes. The site is located within a reasonable walking distance of most of these facilities, all of which are within a comfortable cycle distance. Regular bus services are also accessible to the site. Overall there are a number of realistic and viable transport choices available to future residents of the site.

6.8.2 In order to ensure these opportunities are taken up, a '*Sustainable Transport Strategy*' has been developed. The Strategy comprises:

- Delivering sustainable access connections from the site to the local walking and cycling network;
- Delivering improvements to the walking network to address identified barriers to sustainable travel;
- Providing improvements to the public transport network to encourage access and use; and
- Delivering a realistic package of measures designed to encourage residents to consider sustainable travel choices as part of their overall travel pattern.

6.8.3 The delivery of this strategy comprises a series of 'Hard' measures, which offer physical infrastructure improvements, and 'Soft' measures which are designed to encourage use of sustainable travel through incentivisation, promotion and marketing.

Hard Measures

6.8.4 To encourage walking for local trips and address the issues identified in the Non-Motorised User Audit, a package of infrastructure improvements has been developed to improve local walking connections. These comprise:

- The provision of a new footpath link to the south of the site to connect to the High Street. This would integrate with the improvement works to be implemented as part of the Manor Nurseries committed development site which would deliver a footway connection along High Street;

- The provision of a new footpath link to the west of the site onto Weavers Hill to allow access into central Angmering along Cumberland Road;
- Delivery of a comprehensive network of footways and routes within the site to improve the pedestrian and cycle permeability of the site including a central walking and cycling spine;
- Delivery of improved informal crossing facilities on the approach to the village centre comprising dropped kerbs and tactile paving; and
- Provision of wayfinding signage in the site.

6.8.5 To encourage cycling, the site will deliver good quality cycle parking facilities within the development, in line with the West Sussex County Council parking standards. The precise quantum, location and specification of these facilities will be determined at the reserved matters stage. This is in line with CIHT guidance *'Planning for Cycling'* with some of the most important measures including the following:

- Bicycle purchase schemes, 'pool' bicycles and recycling schemes.
- Bicycle purchase schemes, 'pool' bicycles and recycling schemes;
- Cycle route maps and mapping, both paper-based and electronic, including smartphone apps which can act as a cycle-mounted satnav;
- A range of marketing techniques, including personalised travel planning, advertising, events, festivals and so on; and
- Integration with public transport (railways, buses, trams and taxis).

6.8.6 These measures will be implemented as part of the development to encourage residents to cycle.

6.8.7 The site will also deliver a permeable network of on-site streets and well-connected external connections to High Street and Weavers Hill to offer direct routes from the site to local facilities.

6.8.8 To encourage access to local bus facilities, in addition to the walking improvements identified at paragraph 6.8.4 which enhance connections to local bus stops, it is proposed to deliver an improvement to Weavers Hill which will re-locate the bus stop to a safer and more appropriate position and would deliver enhanced waiting facilities. The works are shown in principle on **Drawing ITB9105-GA-026**.

Soft Measures

6.8.9 To support the TA, a Framework Travel Plan has been developed which sets out a detailed and comprehensive strategy for the delivery of measures to encourage sustainable travel (*report ref: ITB9105-009 R*).

6.8.10 The overarching aims of the Framework Travel Plan are:

- To reduce the number of single occupancy car journeys to the site; and
- To improve accessibility to the site by non-car modes of transport and thereby encourage the use of other travel modes.

6.8.11 The overarching aims have been set in order to achieve a number of key transport objectives and targets. The key target of the FTP is to:

“To reduce the number of single occupancy vehicle trips to and from the site over a 12 hour weekday by 10% from the baseline position by year five.”

6.8.12 To achieve the aims and objectives, a package of ‘Soft’ measures designed to encourage residents to consider sustainable travel opportunities are promoted through the FTP.

6.8.13 The Framework Travel Plan identifies the following measures;

- Provision of a residents ‘Residents Travel Information Pack’, to provide information of travel opportunities and to promote travel;
- Offer of a sustainable travel voucher to be used either on public transport or on cycle equipment;
- Creation of a community travel website, to provide travel information;
- Creation of a steering group consisting of local residents;

- Community noticeboards to identify travel opportunities and incentives;
- Promotion of local car-share and bicycle user groups;
- Negotiation of discounts for cycle equipment; and
- Establishment of a cycle user group.

6.8.14 The FTP identifies a delivery and management strategy for these measures, and commits to future monitoring of the success of the travel plan. In combination with the hard measures identified earlier, these will ensure opportunities to travel sustainably are taken up.

6.8.15 An Action Plan is provided in Table 6.5 which summarises the comprehensive package of measures proposed to be delivered to encourage sustainable access to and from the site. Further detail is provided within the FTP that accompanies this TA.

Table 6.5: Sustainable Transport Strategy

Objective	Measure	Timescale
Overall cross-objective	Appoint a Travel Plan Coordinator	Prior to Occupation
	Develop web-site / twitter feed	Prior to Occupation
	Distribute Travel Welcome Packs	Prior to Occupation
	Provide community notice boards	Phased with Development
Reduce the Need to Travel	Deliver connections to broadband network	Prior to Occupation
Promotion of Walking and cycling	Walking and cycling maps and health information	Prior to Occupation
	Pedestrian / cycleway connection to Weavers Hill	Prior to Occupation
	Pedestrian / cycleway connection to High Street	Prior to relevant phase of Development
	Improved uncontrolled pedestrian crossings to the village centre	Prior to Occupation
	Provision of improved wayfinding	Prior to Occupation
	Delivery of MfS layout – interconnecting streets, shared streets and home zones	Phased with Development
	Offer of a £150 travel voucher to each dwelling for cycle equipment purchase	On occupation (within Travel Information Packs)
	Provision of cycle storage within each unit	Phased with Development
	Set up a Bicycle User Group (BUG)	6 months after occupation
Promotion of Public Transport	Delivery of a Bus Stop improvement at Weavers Hill	Prior to agreed occupation
	Offer of £150 Bus Taster ticket	On occupation (within Travel Information Packs)
Encourage Car Sharing	Promotion of car sharing schemes through liftshare.com	Prior to Occupation and Ongoing

6.9 Summary

- 6.9.1 Angmering village provides a range of local services and facilities, which the future residents of the proposed development will visit on a regular basis. This includes local convenience stores, pharmacy, post office, community centre, and retail park. In addition, local schools and leisure facilities are within a reasonable walking distance from the proposed site.
- 6.9.2 Future residents of the proposed development will have the opportunity to access a range of everyday destinations by a choice of different travel modes.
- 6.9.3 Walking is a realistic mode of travel to and from the site, with well-connected routes providing direct access to local facilities which are located within a short walk of the site. A significant proportion of travel from the site can be expected to be made on foot to reach the village centre as well as local schools and services.
- 6.9.4 Facilities and services located around Angmering Village are within a reasonable cycle distance from the site. With traffic calming measures being implemented onto Roundstone Lane this will improve the attractiveness of cycling into the south of the village. Cycling routes on Water Lane and Nursery Road allow for future residents to access local facilities and Angmering Rail Station.
- 6.9.5 An hourly bus service operates from within 400m of the centre of the site. This provides a route to Worthing, Littlehampton and Lancing and to key employment areas in Angmering and further afield in Shoreham, Lancing and Worthing. The bus also connects to Angmering Rail station which provides for direct and regular onward travel to higher-order destinations.
- 6.9.6 The FTP identifies opportunities for the effective promotion and delivery of sustainable transport initiatives e.g. walking, cycling, public transport to reduce the demand for travel by less sustainable modes.
- 6.9.7 Future residents at the proposed development therefore have the opportunity to access a range of destinations by a choice of sustainable transport modes. The proposed development is located where the need to travel will be minimised and, through the Framework Travel Plan, the use of sustainable transport modes can be maximised. In line with the NPPF requirements, it is therefore demonstrated that the opportunities for sustainable travel can be and have been taken up.

SECTION 7 TRAFFIC IMPACT

7.1 Introduction

- 7.1.1 This section of the TA summarises the traffic impact of the proposed development. The scope of the TA has been discussed and agreed with WSCC. The agreed assessment parameters are contained within the Scoping Note as **Appendix B**.

7.2 Opening Year Traffic Flows

- 7.2.1 The Highways England (HE) advice in Circular 02/2013, re-iterated in the recent HE document 'Planning for the Future', identifies that:

"Assessments should be carried out for:

- **the development and construction phase;**
- **and the opening year, assuming full build out and occupation, and**
- **either a date ten years after the date of registration of the associated planning application or the end of the Local Plan period (whichever is the greater).**

The assessment at opening will be used for the determination of impact mitigation needs whilst the latter is necessary to determine the risk which will transfer to us."

- 7.2.2 To ensure consistency with this approach, and following the withdrawal of the former DfT's '*Guidance on Transport Assessment*', it is proposed to test the impact of the development at its projected Opening Year, assumed to be 2019. The impact of the fully occupied development will be considered at this time, along with the impact of already permitted development. To consider the operation of the network in the context of the full masterplan, an additional assessment at 2026 has been undertaken. This is presented in Chapter 8.
- 7.2.3 The growth factors to 2019 and 2026 have been derived from the TEMPRO database for 'urban' and 'all roads' in the Arundel (45UC5) area (Table 7.1.).

Table 7.1: Growth Rates

Date Range	Morning Peak	Evening Peak
2015-2019	1.0538	1.0554
2015-2026	1.1451	1.1517

Source: TEMPRO Version 6.2

7.2.4 The planning assumptions that underpin the assessment of traffic growth have been considered and manually adjusted to remove the potential impacts of double counting in relation to the direct assessment of committed development (Section 7.3).

7.3 Committed Development

7.3.1 Committed developments within the area have been identified and are listed below. These committed developments have been agreed to be assessed as part of the Transport Assessment with WSCC:

- Roundstone Lane planning applications for up to 700 residential dwellings:
 - Application number A/51/14/OUT - Manor Nurseries for 32 residential dwellings – Approved March 2015;
 - Application number A/82/12 – Land East of Roundstone Lane for 138 residential dwellings – Approved May 2015;
 - Application number A/135/12 – JV Plants – Pound Nursery for 36 residential dwellings – Approved November 2014;
 - Application number A/154/14/OUT – Roundstone Place Roundstone Lane for 18 residential dwellings – Approved April 2015;
 - Application number A/122/12 - VHB Nurseries for 195 residential dwellings – Approved February 2015;
 - Worthing Rugby Club for 193 residential dwellings – Awaiting Planning Application; and
 - Site 101 (SHLAA) for 100 residential dwellings – Awaiting Planning Application.

7.3.2 Traffic flow estimates for each of the development sites have been extracted from relevant transport assessments and are included in the future Opening Year traffic flows to ensure the cumulative impacts of development are assessed.

7.3.3 A summary of the total committed development vehicle trips is shown on **Figure TF7-8** with the 2019 plus committed development traffic shown on **Figures TF9-10** for the morning and evening peaks respectively.

7.4 Development Traffic Generation

- 7.4.1 To understand how many car trips the proposed development will generate the TRICS database has been used. This database contains over 6,000 independent traffic surveys for a number of different land uses.
- 7.4.2 An assessment has been undertaken using trip rates for *'Houses – Privately Owned'* and *'Affordable / Local Authority Housing'* taking into account that the proposed development would provide a mixture of private and affordable properties. Sites have also been removed for those land uses which are on the 'edge of town centre', 'edge of town' or 'neighbourhood centre' to ensure that the traffic estimates are appropriate and representative of the application site.
- 7.4.3 The trip rates and traffic generation for up to 175 dwellings, assuming 65% privately owned units and 35% affordable units, are summarised in Table 7.2 with the full TRICS data provided in **Appendix J**.

Table 7.2: Proposed Development Trip Generation

Time Period	Trip Rate per unit			Vehicular Trip Generation		
	In	Out	Two-way	In	Out	Two-way
Private units – 122						
0800-0900	0.136	0.362	0.498	17	44	61
1700-1800	0.320	0.179	0.499	39	22	61
Affordable Units – 53						
0800-0900	0.094	0.175	0.269	5	9	14
1700-1800	0.175	0.129	0.304	9	7	16
Total – 175 Units						
0800-0900	-	-	-	22	53	75
1700-1800	-	-	-	48	29	77

Source: TRICS

- 7.4.4 The analysis demonstrates that the development proposal is likely to generate approximately 75 two-way vehicle movements in the morning and evening peak hours. This is the equivalent to just over one vehicle each minute in the morning peak and evening peak periods.

- 7.4.5 To confirm the robustness of the TRICS data, an ATC was laid on an existing residential road in Angmering which is similar in nature to that of the proposed development. The ATC was placed on Mill Road between 22nd April 2016 to 28th April 2016 with the full data contained in **Appendix K**. The trips rates associated with the ATC on Mill Road (5-day average) are summarised in Table 7.3.

Table 7.3: Mill Road ATC Trip Rate and Trip Generation

Time Period	Trip Rate per unit			Vehicular Trip Generation		
	In	Out	Two-way	In	Out	Two-way
Private and Affordable units – 175						
0800-0900	0.135	0.325	0.460	24	57	81
1700-1800	0.283	0.167	0.450	50	29	79

Source: TRICS

- 7.4.6 This demonstrates a higher trip generation with an increase of 6 two-way movements during the morning peak and two more two-way trips during the evening peak.
- 7.4.7 The higher of these derived rates (those from local roads) has been agreed with WSCC as a suitable estimate of future traffic generation, and so has been used in the assessments to provide a robust assessment.

7.5 Development Traffic Distribution and Assignment

- 7.5.1 Data derived from the National Travel Survey (NTS) 2014 (DfT) outlines the proportion of peak hour trips made by car, split into journey purpose. The summary results are presented in Table 7.4.

Table 7.4: Proportion of Peak Hour Trips by Journey Purpose (Car Driver Only)

Trip Purpose	AM Peak (0800-0900)	PM Peak (1700-1800)
Commuting/Business	40%	46%
All Other Journey Purposes	60%	54%
Total	100%	100%

Source: Table 8.2 Trip start time by time of day and trip purpose (Monday to Friday only), Car driver: 2010/14, National Travel Survey, DfT, 2014

- 7.5.2 The analysis demonstrates that 40% of the total vehicular trips generated by the proposed residential development the morning peak hour period are likely to be employment journeys. The remaining 60% of the vehicle trips are likely to be for other purposes, such as: education, shopping, leisure and personal business.

- 7.5.3 In the evening peak hour, the proportion of employment related journeys is similar accounting for 46% whilst other journeys comprise 54% of the total vehicular trips.
- 7.5.4 For the purpose of this assessment, the analysis has been undertaken on the basis that 46% of the total vehicular trips generated by the residential development will be for employment journeys and the remaining 54% of the vehicle trips will be for all other purposes for both the morning and evening peak hour periods.
- 7.5.5 In order to provide an accurate assessment of the likely distribution of traffic from the site, separate methodologies have been applied to consider the destinations of commuting and business trips to other trip purposes:
- For commuting and business trips, the 2011 National Census Journey to Work statistics (for car drivers) for the Arun 002 and 005 Super Output Area –have been used. This dataset identifies existing resident’s employment locations and so existing commuting patterns; and
 - For other journey purpose trips a P/T^2 gravity model has been undertaken using the population of key urban areas (from the 2011 Census) within a 50-minute drive from the site (estimated from Google Maps Directions facility). This includes Chichester, Crawley Littlehampton and Portsmouth.
- 7.5.6 The two sets of data are then combined to generate a single set of distribution parameters to inform the development trip assignment. The combined data is set out in Table 7.5 with the full analysis included in **Appendix L**.

Table 7.5: Distribution of Car Drivers

Destination		Employment Trips %	Non Commuter Trips %	% All Trips Combined
Arun	Angmering	4.42%	17.78%	22.2%
	Littlehampton	4.10%	4.94%	9.04%
	Bognor Regis	1.47%	2.62%	4.09%
	Rustington	1.67%	1.04%	2.71%
	East Preston	1.34%	1.15%	2.49%
	Arundel	0.91%	0.46%	1.37%
	Ferring	0.46%	0.48%	0.94%
	Yapton	0.86%	-	0.86%
	Eastergate, Barnham and Walberton	0.39%	-	0.39%
South East	Worthing	12.77%	10.87%	23.64%
	Brighton and Hove	1.97%	3.70%	5.67%
	Horsham	3.62%	1.27%	4.89%
	Shoreham-by-Sea	2.09%	2.26%	4.35%
	Chichester	3.12%	0.87%	3.99%
	Crawley	1.70%	1.86%	3.56%
	Portsmouth	0.25%	2.42%	2.67%
	Havant	0.25%	0.94%	1.19%
	Burgess Hill	0.39%	0.51%	0.9%
	Haywards Heath	0.39%	0.48%	0.87%
	Lewes	0.35%	0.34%	0.69%
London		1.21%	-	1.21%
Other N Direction		1.09%	-	1.09%
Other North West		0.47%	-	0.47%
Other North East		0.37%	-	0.37%
Other West Direction		0.25%	-	0.25%
Other East Direction		0.08%	-	0.08%
Total		46.0%	54.0%	100%

Source: 2011 Census / Gravity Model and Consultant Estimates

7.5.7 The assessment demonstrates that the greatest peak period travel demands will be to Angmering (22%) and Worthing (24%). Littlehampton also attracts a significant proportion of trips (10%) with Bognor Regis, Brighton, Horsham and Shoreham-on-sea all notable trip attractors.

7.6 Proposed Development – Assignment

7.6.1 The expected traffic that would be generated by the site (Table 7.3) has been distributed onto the local network to the destinations identified in Table 7.5.

7.6.2 To consider the routing of trips to these destinations, trips were assigned to the road network based on the quickest peak hour route from the site to the destination location using the Google Maps 'Directions' Facility. The resulting morning and evening peak hour development traffic distribution and assignment on the local road network is presented in Table 7.6.

Table 7.6: Combined Trip Assignment

Primary Route	%	Secondary Route	%	Tertiary Route	%	Quaternary Route	%
Water Lane East	58%	A280 N	58%	A280 North (Bridge)	32%	A27 East	20%
						A280 Long Furlong North	12%
				A27 West	10%	-	-
				Titnore Lane	16%	Titnore Lane	16%
Water Lane West	42%	Station Road South	34%	A259 West	24%	Mill Lane	10%
						-	-
						A259 West	14%
		Weavers Hill / High Street / Roundstone Lane	8%	B2140 South	10%	-	-
				A259 East	3%	A259 East	3%
				Roundstone Lane south of A259	5%	-	-
Total	100%		100%		100%		73%

Source: Consultant's Estimates

7.6.3 To ensure the validity of these results, a turning count was undertaken at the junction of Water Lane with Dappers Lane between the hours of 0700 to 1000 and 1600 to 1900 on the 24th November 2015. The turning movements at this junction identified that 58% departed east along Water Lane with 42% departing west along Water Lane in the morning peak. In the evening peak 62% arrived from the east and 38% arrived from the west. Therefore, the trip assignment summarised in Table 7.6 is shown to be very comparable to that of existing vehicle movements in the area. The development assignment is shown on **Figures TF14-15** respectively.

7.7 Opening Year Traffic Flows

7.7.1 The development traffic flows have been added to the 2019 Opening Year traffic flows to provide the Opening Year with development scenario. The morning and evening peak hour traffic flows for the design year with development traffic are shown on **Figures TF16-17** respectively.

7.8 Traffic Impact

7.8.1 The estimated development traffic has been compared to the baseline traffic flows at local junctions to consider the proportionate impact of the development. This is presented in Table 7.7.

Table 7.7: Proportionate impact on the local highway network

Junction	Observed 2015 Flows		Development Trips		Proportionate Impact	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A280 / Water Lane	1,365	1,396	46	45	3.37%	3.22%
Water Lane / High Street	861	661	28	27	3.25%	4.08%
Water Lane / Arundel Road	1,364	950	28	27	2.05%	2.84%
A280 / A27 on-slip / A280 (north) A27 off-slip / Titnore Lane	2,602	2,495	46	45	1.77%	1.80%
A280 (south) / A27 off-slip / Arundel Road / Long Furlong	2,121	1,980	23	20	1.08%	1.01%
A259 / Golfers Lane / Mill Lane	3,289	3,463	20	19	0.61%	0.55%
A259 / Station Road / B2140	3,563	3,475	28	27	0.79%	0.78%
A259 / Roundstone Lane	2,250	2,865	6	6	0.27%	0.21%
A259 / A280 / B2140	2,952	3,273	3	3	0.10%	0.09%

Source: I-Transport

7.8.2 The assessment demonstrates that the predicted increases in traffic on existing junctions on the local highway network is small, representing less than a 5% increase in traffic flows on Water Lane. Impacts on the A259 junctions are much smaller at less than a 1% increase in traffic. At the A27 junctions, the development has less than a 2% impact.

7.8.3 These increases are unlikely to have any measurable effect on the operation of the road network itself and are considered to be within daily flow variation.

7.8.4 Notwithstanding this, as agreed with WSCC as part of the TA Scoping exercise, further detailed assessments have been carried out as identified in Section 7.9 of the Transport Assessment.

7.9 Detailed Operational Assessments

7.9.1 Capacity analysis has been undertaken to determine the operation of the surrounding highway network and its ability to accommodate the additional traffic from the proposed development. Analysis has been undertaken for the following junctions.

- Proposed site access with Water Lane;
- A280 / Water Lane junction (with and without improvements);
- Water Lane / High Street junction;
- Water Lane / Arundel Road junction;
- A280 / Titnore Lane / A27 roundabout; and
- Long Furlong / Arundel Road / A27 / A280 roundabout.

7.9.2 Assessment of the future projected operation of these junctions has been undertaken for the weekday morning and evening peak hours (0800 to 0900 and 1700 to 1900). Assessments have been carried out for the following scenarios:

- 2015 Base;
- Opening Year (2019) plus committed development; and
- Opening Year (2019) plus committed development and with development.

7.9.3 The priority junctions and roundabouts have been tested using TRL Software Junctions 9. The assessment outputs are provided in **Appendix M** of this report. The junctions have been assessed using the 'one-hour profile' in Junctions 9 to account for peaks in traffic flows that occur within the peak hour.

7.9.4 The traffic signal controlled junctions have been assessed using LinSig 3 and the assessment outputs are provided in **Appendix N**.

7.10 Site Access onto Water Lane

7.10.1 The southern site would be accessed by the creation of a simple priority junction access to Water Lane, as shown in on **Drawing ITB9105-022**.

7.10.2 To assess the capacity of the proposed site access, 'Junctions 9' has been used. The principle outputs derived from the model are the Ratio of Flow to Capacity (RFC¹) and average queue lengths. The results of the assessment are summarised in Table 7.8.

Table 7.8: Site Access/Water Lane Priority Junction Assessment Results

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	Max RFC	Queue	Max RFC
2019 Opening Year + Committed Development + Development				
Site Access	<1	0.15	<1	0.08
Water Lane (west) right turn	0	0.03	<1	0.06

Source: Junctions 9

7.10.3 The results demonstrate that the proposed access will operate well within capacity in all time periods assessed. The maximum RFC (0.15) is on the site access arm of the junction and a queue of less than one vehicle is predicted in 2019.

7.11 A280 / Water Lane Junction

7.11.1 The A280 / Water Lane junction is an uncontrolled limited moves priority junction. From Water Lane traffic is banned from making a right-turn, with all traffic required to turn left to travel north towards the A27.

7.11.2 To assess the capacity of the Water Lane / A280 priority junction, Junctions 9 has been used. The results of the assessment are summarised in Table 7.9.

¹ An RFC of 1.0 indicates that the traffic demand equals the theoretical capacity.

Table 7.9: Water Lane / A280 Priority Junction Assessment Results

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	Max RFC	Queue	Max RFC
2015 Baseline				
Water Lane	3	0.78	1	0.42
A280 right turn	1	0.41	1	0.51
2019 Opening Year + Committed Development				
Water Lane	21	0.96	1	0.52
A280 right turn	1	0.48	2	0.7
2019 Opening Year + Committed Development + Development				
Water Lane	21	1.02	1	0.55
A280 right turn	1	0.50	3	0.74

Source: Junctions 9

7.11.3 These results demonstrate that the junction currently operates within capacity during both the morning and evening peaks, with a maximum RFC of 0.78 on Water Lane with a queue of three vehicles in the morning peak.

7.11.4 By 2019, even without development traffic, the assessment demonstrates that the junction is predicted to operate under stress and close to its theoretical capacity, with a maximum RFC of 0.96 on Water Lane with an associated queue of 21 vehicles on Water Lane. Vehicles on Water Lane would wait on average 80 seconds to join the A280. This is primarily as a result of committed development traffic.

7.11.5 With the addition of the proposed development, the junction would operate over capacity with a maximum RFC of 1.02 on Water Lane in the morning peak period, along with associated queues. Vehicles seeking to access the A280 from Water Lane would experience an average delay of 2 minutes.

Mitigation Scheme

7.11.6 As part of the Roundstone Lane planning application it was identified that a junction improvement scheme would be required to mitigate the impact of development at this junction. This is further illustrated by the results identified in Table 7.9.

7.11.7 It is proposed to bring forward an improvement scheme at the A280 / Water Lane Junction. The proposed scheme comprises of signalising all approaches to the junction, but retain the restricted movements from Water Lane. The proposed improvement scheme is shown on **Drawing ITB9105-GA-021**. A Stage One Road Safety Audit has been undertaken on the proposed scheme. The audit did not raise any issues with the proposed design. A copy of the audit is included at **Appendix O**.

7.11.8 To assess the capacity of the improvement scheme LinSig 3 has been used. The principal outputs from LinSig are the Degree of Saturation² (DOS) and Mean Max Queue (MMQ) length. The results of the improvement junction are shown in Table 7.10 for 2019 with development scenario (full outputs provided at **Appendix N**).

Table 7.10: Water Lane / A280 Signalised Junction Assessment Results

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	DOS (%)	Queue	DOS (%)
2019 Opening Year + Committed Development + Development				
A280 Southbound	3	37.30%	6	54.80%
A280 Northbound	6	62.20%	6	54.70%
Water Lane left	8	62.80%	4	36.20%

Source: LinSig3

7.11.9 The assessment demonstrates that the improvement scheme will effectively mitigate the effects of future traffic and will operated with significant spare capacity.

7.12 Water Lane / High Street / Station Road / Arundel Road Junction

7.12.1 This junction is made up of two priority junctions (Water Lane with High Street and Station Road with Arundel Road), with a signalised ‘puffin’ crossing between the two junctions along the High Street.

7.12.2 Due to the presence of the controlled crossing, a combination of Junctions 9 and LinSig 3 have been used to assess the performance of the junction with Junctions 9 used to obtain the slope and intercept values to be provided into the LinSig model.

² A Degree of Saturation (DOS) of 100% means that the traffic demand equals the available capacity

7.12.3 The LinSig model has assumed 100 pedestrians each way per hour in each peak, with a 60 second cycle time i.e. 60 calls per hour, which is likely to be a robust assumption. The model then uses the slope and intercept values from the Junctions 9 model and is therefore calibrated to the local conditions. The results are contained in Table 7.11.

Table 7.11: Water Lane / High Street / Station Road / Arundel Road Priority Junctions with Signalised Crossing Assessment Results

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	DOS (%)	Queue	DOS (%)
2015 Baseline				
J1: Station Road/Arundel Road / High Street				
High Street	<1	26.8	<1	15.0
Station Road NB	<1	12.2	<1	14.8
Station Road SB	<1	24.1	<1	19.0
J2: Pedestrian Crossing on Station Road				
Station Road SB	5	42.4	3	31.4
Station Road NB	2	22.0	1	15.1
Arundel Road	1	43.0	<1	24.7
2019 Opening Year + Committed Development				
J1: Station Road/Arundel Road / High Street				
High Street	<1	32.1	<1	16.9
Station Road NB	<1	18.6	<1	15.6
Station Road SB	<1	30.6	<1	20.2
J2: Pedestrian Crossing on Station Road				
Station Road SB	5	46.4	3	33.6
Station Road NB	2	23.1	1	16.1
Arundel Road	1	46.0	<1	27.2
2019 Opening Year + Committed Development + Development				
J1: Station Road/Arundel Road / High Street				
High Street	<1	32.5	<1	17.1
Station Road NB	<1	13.0	<1	15.7
Station Road SB	<1	30.7	<1	20.4
J2: Pedestrian Crossing on Station Road				
Station Road SB	6	47.8	3	34.3
Station Road NB	2	23.7	1	17.4
Arundel Road	1	46.5	<1	27.5

Source: LinSig3

7.12.4 These results show that the junction will operate well within capacity during peak periods, with a maximum Degree of Saturation of 47.8% on Station Road (southbound) at the pedestrian crossing in the morning peak period, and a maximum queue of six vehicles when the crossing is called. The Station Road / Arundel Road / High Street Junction operates without any projected queuing in both peak periods.

7.13 A280 / Titnore Lane / A27 roundabout

7.13.1 The A280 / Titnore Lane / A27 junction is an uncontrolled roundabout junction. To assess the results of the A280 / Titnore Lane / A27 roundabout, Junctions 9 has been used. The results of the assessment are summarised in Table 7.12.

Table 7.12: A280 / Titnore Lane / A27 Roundabout Junction Assessment Results

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	Max RFC	Queue	Max RFC
2015 Baseline				
A27 Off-slip	1	0.36	1	0.36
Titnore Lane	1	0.39	1	0.46
A280 South West	3	0.74	1	0.44
A280 North	2	0.61	2	0.68
2019 Opening Year + Committed Development				
A27 Off-slip	1	0.42	1	0.45
Titnore Lane	1	0.43	1	0.53
A280 South West	6	0.86	1	0.50
A280 North	2	0.66	3	0.77
2019 Opening Year + Committed Development + Development				
A27 Off-slip	1	0.43	1	0.47
Titnore Lane	1	0.44	1	0.54
A280 South West	7	0.89	1	0.52
A280 North	2	0.66	3	0.77

Source: Junctions 9

7.13.2 The assessment demonstrates that the junction would operate within capacity in 2019 without development with a maximum RFC of 0.86 on A280 south west in the morning peak and 0.77 on A280 north in the evening peak. A maximum queue of six vehicles and three vehicles respectively is projected to occur on these arms of the junction.

7.13.3 When development traffic is added the impact on the junction is shown to be small. The junction would continue to operate within capacity during both the morning and evening peaks with a maximum RFC of 0.89 on A280 south west during the morning peak with a queue length of seven vehicles.

Mitigation Scheme

7.13.4 Whilst the junction does operate within theoretical capacity and the impacts of development are small, it does exceed design capacity (taken as 0.85 RFC) on the A280 south-western arm leading from Angmering, as shown by the projected queues. This is the case with and without the proposed development.

7.13.5 An improvement scheme has been discussed with Highways England for consideration, which would improve the A280 South West arm by utilising existing carriageway to develop a two-lane entry. The proposed improvement scheme is presented in **Drawing ITB9105-GA-023**.

7.13.6 To assess the performance of the improvement scheme Junctions 9 has been used. The results of the improvement to the junction are shown in Table 7.13 for 2019 with development scenario. Full Junctions 9 outputs are included in **Appendix M**.

Table 7.13 A280 / Titnore Lane / A27 Roundabout Junction Assessment Results

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	Max RFC	Queue	Max RFC
2019 Opening Year + Committed Development + Development				
A27 Off-slip	1	0.43	1	0.47
Titnore Lane	1	0.44	1	0.54
A280 South West	4	0.80	1	0.47
A280 North	2	0.66	3	0.77

Source: Junctions 9

7.13.7 The results demonstrate that the proposed improvements on A280 South West arm will effectively mitigate the effects of the additional development traffic in the 2019 Opening Year and the junction will perform more efficient than if the development does not proceed.

7.14 Long Furlong / Arundel Road / A27 / A280 roundabout

7.14.1 To assess the Long Furlong /Arundel Road / A27 / A280 roundabout, Junctions 9 has been used. The results of the assessment are summarised in Table 7.14.

Table 7.14: Long Furlong / Arundel Road / A27 / A280 Roundabout

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	Max RFC	Queue	Max RFC
2015 Baseline				
A280 Long Furlong	1	0.52	2	0.67
A280 South	1	0.48	1	0.36
A27 Off-slip	1	0.58	<1	0.31
Arundel Road	<1	0.09	<1	0.06
2019 Opening Year + Committed Development				
A280 Long Furlong	1	0.59	3	0.76
A280 South	2	0.60	1	0.40
A27 Off-slip	2	0.68	1	0.35
Arundel Road	<1	0.11	<1	0.07
2019 Opening Year + Committed Development + Development				
A280 Long Furlong	2	0.60	3	0.77
A280 South	2	0.61	1	0.41
A27 Off-slip	2	0.69	1	0.36
Arundel Road	<1	0.12	<1	0.07

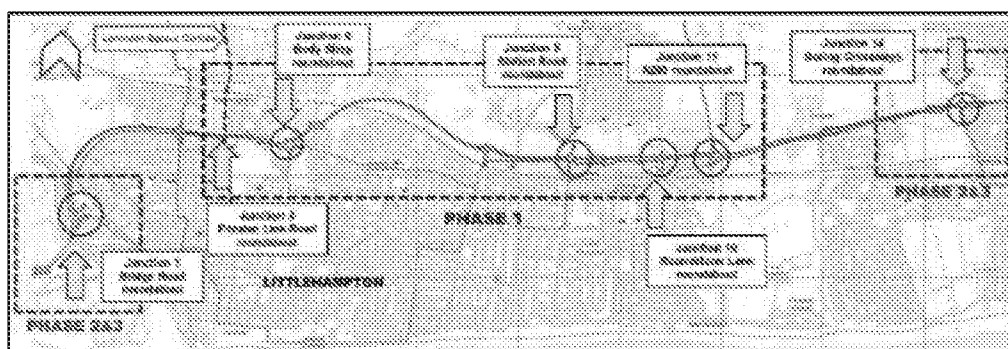
Source: Junctions 9

7.14.2 These results demonstrate that the junction would operate well within capacity during both peak periods in 2019 with development, with a maximum RFC of 0.77 on A280 Long Furlong and queue of three vehicles in the evening peak.

7.15 A259 Corridor

7.15.1 West Sussex County Council have developed proposals to significantly improve the A259 corridor to the south of Angmering which will deliver a combination of road dualling and junction enhancement (shown on Image 7.1) and will increase the capacity of the corridor. The improvement works will be delivered in several phases with the first phase expected to start on site in late 2017. This will deliver improvement to the junctions closest to Angmering.

Image 7.1: A259 Corridor Improvements Location Plan



Source: WSCC A259 Corridor Improvements Consultation

7.15.2 On the basis that WSCC is committed to delivering significant improvements to the corridor, WSCC have confirmed that detailed assessment of the A259 corridor is not required as part of a planning application for Land South of Water Lane, Angmering.

7.15.3 Notwithstanding this, an overview assessment to consider the impacts of the development on the A259 corridor has been carried out and is presented in Table 7.15 which compares the future traffic flows at each junction in 2026 to the additional traffic that the development will generate.

Table 7.15: A259 Impact Assessment

Junction	Morning Peak Hour (0800-0900)			Evening Peak Hour (1700-1800)		
	2026 Flows	Dev traffic	% increase	2026 Flows	Dev traffic	% increase
A259 / Golfers Lane / Mill Lane	3766	20	0.53%	3988	19	0.48%
A259 / Station Road / B2140	4080	28	0.69%	4002	27	0.67%
A259 / Roundstone Lane	2576	6	0.23%	3300	6	0.18%
A259 / A280 / B2140	3380	3	0.09%	3370	3	0.09%

Source: Consultants Estimates (2026 traffic flows include committed development)

7.15.4 The development is shown to have a small impact on the A259 corridor generating less than a 1% impact on any junction. Such increases would not have any demonstrable impact on the operation of the road network and are considered to be within daily flow variations.

7.16 Angmering Traffic Calming Scheme

7.16.1 West Sussex County Council proposes to implement a traffic calming scheme in Angmering during 2017/18 (**Appendix P**).

7.16.2 These works will result in speed reducing measures along Water Lane and Station Road between the A280 to the north east and the A259 to the south west. This will be in the form of extending the 20mph zone from Station Road through to circa 165m east of Dappers Lane. Works will also be undertaken on Roundstone Lane between the High Street to the north and the A259 to the south to provide a 20mph zone.

7.16.3 Buff coloured road surfacing to delineate the start of the 20mph zone, with speed cushions, raised table top junctions and uncontrolled crossing with tactile paving to be provided throughout. In addition, the current puffin crossing located in Angmering Village Centre is to be upgraded to a raised signal crossing.

7.16.4 The impact of the moderate traffic increases as a result of the proposed development will not have any material impact on the proposed traffic calming scheme, but would benefit from the improved traffic flow and road conditions provided.

7.17 Summary

7.17.1 An assessment of the performance of the local highway network has been carried out which considers the impact of the development of the land south of Water Lane.

7.17.2 The proposed development would generate some 81 vehicle trips in the morning peak and 79 vehicle trips in the evening peak, equivalent to a little over one additional vehicle each minute at peak times. Of this 58% are anticipated to go east on Water Lane and 42% west along Water Lane.

7.17.3 The assessment has demonstrated that the following junctions will operate within capacity in the future when development traffic is considered and that no improvements are required to accommodate development traffic:

- Proposed site accesses to Water Lane;
- Water Lane / High Street junction;
- Water Lane / Arundel Road junction (including puffin crossing);
- Long Furlong / Arundel Road / A27 / A280 roundabout.

- 7.17.4 The combination of committed development (from Roundstone Lane) and the proposed development would increase pressure on the A280 / Water Lane junction and which would require improvement in order to accommodate future traffic levels. An improvement scheme has been developed which would signalise the junction. This is shown to fully mitigate the impacts of development and is deliverable entirely within public highway.
- 7.17.5 Analysis of the A280 / Titnore Lane / A27 roundabout demonstrates that with development traffic the junction operates within capacity, albeit some operational issues are shown to arise on the A280 south western approach. To address this an improvement scheme has been developed to deliver a two-lane entry on this approach arm which would improve junction operation. This is deliverable within the highway.
- 7.17.6 On the basis of the detailed assessment, carried out using parameters agreed with WSCC as local highway authority, it is demonstrated that there are deliverable and cost effective solutions available to address any significant traffic impacts of development. As such, there is no transport reason that the development of land south of Water Lane should be resisted, with the site considered to fall short of the 'severe' test set by the National Planning Policy Framework.

SECTION 8 SENSITIVITY TEST

8.1.1 The proposed development on land to the south of Water Lane is part of a larger mixed use development which is being promoted for development through the emerging local plan. As part of the planning application a sensitivity test has been undertaken at WSCC's request to demonstrate that the development of land to the south of Water Lane would not prejudice the comprehensive development of the wider site and that the full development masterplan is deliverable in transport terms.

8.1.2 At this stage the mix of development on the land north of Water Lane is not fixed and for this reason an assessment has been made of two options for the comprehensive development of the site:

- **Full Masterplan Option A** – Southern Site (175 dwellings) plus Northern Site with 3ha employment (12,000sqm) Plus 550 dwellings; and
- **Full Masterplan Option B** – Southern Site (175 dwellings) plus Northern Site with 8ha employment (32,000sqm) Plus 350 dwellings.

8.2 Proposed Access Arrangements

Vehicular Access

8.2.1 To enable the assessment of cumulative impacts, consideration has been given to how land north of Water Lane could be accessed. In view of the local conditions, it is likely that vehicular access would be delivered by improvement of the existing access to the northern site to provide a ghost island priority junction. In initial site access option is shown in principle on **Drawing ITB9105-GA-025** and is provided for illustrative purposes only (not to be determined at this stage).

8.2.2 The access arrangement has been designed having regard to TD 42/95 (Geometric Design of Major/Minor Priority Junctions) of the Design Manual for Roads and Bridges (DMRB). The following geometry is proposed:

- Site access arm providing a 6m wide carriageway flaring to two lanes at entry;
- 3.0m footway/cycleway provided on the site access arm connecting to Dappers Lane and the southern land parcel;

- Ghost island right turn lane into the proposed development, providing a 10m turning length, 40m deceleration length and a 15m direct taper length. This is based on a design speed of 70kph as identified by vehicle speed surveys and agreed in principle with WSCC;
- A visibility splay of 2.4m x 120m to the west, which is in line with guidance set out in 'Design Manual for Roads and Bridges (DMRB)' for a design speed of 70kph; and
- Visibility to the junction of the A280 with Water Lane to the east (a visibility splay of 2.4m x 85m).

8.3 Sensitivity Test Traffic Impact

8.3.1 This section of the TA identifies the approach used to assess the impact of the wider development of the site on the local highway network.

Trip Generation

8.3.2 The trip rates identified for the residential development in Section 7.4 have been used and were agreed with WSCC as part of the TA Scoping process.

8.3.3 The northern site was previously identified for employment uses in the Arun DC draft Local Plan and it is intended that employment would be accommodated within the development.

8.3.4 Whilst the mix of employment uses on the site is unknown at this stage, to provide a robust assessment all employment floor space has been assumed to be B1a Offices, which is the highest traffic generator of the employment uses. On this basis the assessment is very robust and the results should be considered as pessimistic.

8.3.5 The TRICS database has been interrogated to provide trip rates for the employment uses, with the land uses 'edge of town centre, edge of town and neighbourhood centre removed from these sites. These are summarised in Table 8.1 with the full data included in **Appendix Q**.

Table 8.1: Employment Vehicle Trip Rates (per 100sqm)

Use	Morning Peak (0800 – 0900)			Evening Peak (1700 – 1800)		
	In	Out	In	Out	In	Out
B1a Trip Rate (per 100sqm)	1.248	0.208	1.456	0.072	1.126	1.198

Source: TRICS

- 8.3.6 Table 8.2 identifies the projected peak period traffic generation of the two masterplan options. This demonstrates that Option A, which is more residential led, would generate some 500 peak period movements, whilst Option B, which is more employment led, would generate around 700 movements in the morning peak and 620 in the evening peak period.

Table 8.2: Trip Generation – Full Masterplan Options

Time Period	Vehicular Trip Generation					
	In	Out	Two-way	In	Out	Two-way
	Southern Site			Southern Site		
	Total Residential Units - 175			Total Residential Units - 175		
0800-0900	24	57	81	24	57	81
1700-1800	50	29	79	50	29	79
	Northern Site - Option A			Northern Site - Option B		
	Total Residential Units - 550			Total Residential Units - 350		
0800-0900	74	179	253	47	114	161
1700-1800	156	92	248	99	58	158
	B1a – 12,000sqm			B1a – 32,000sqm		
0800-0900	150	25	175	399	67	466
1700-1800	9	135	144	23	360	383
	Total			Total		
0800-0900	248	261	509	471	237	708
1700-1800	214	256	470	172	448	620

Source: Consultants Estimates

- 8.3.7 To assess the impact of the full masterplan, Option B, has been assessed as this provides a worst case scenario. These assessments have been undertaken for the weekday morning and evening peak hours (0800 to 0900 and 1700 to 1800) and have considered the operation of the local highway network in the 2026 future year for those junctions identified in Section 7.9.

Proposed distribution and assignment of development traffic

- 8.3.8 The proposed distribution and assignment of development flows for the sensitivity test have been determined using the methodology set out in Section 7.6 for the residential proportion of the development.
- 8.3.9 To consider the distribution of trips for the employment uses, 2011 Census Journey to Work Data for Arun 002 and 005 Super Output Areas have been used to determine the area of work rather than area of residence.

Committed Development

- 8.3.10 Committed developments identified in Section 7.3 of this report have been included in the sensitivity test assessments. These developments have been agreed to be assessed as part of the Transport Assessment with WSCC.

8.4 Operational Assessments

- 8.4.1 As agreed with WSCC as part of the TA Scoping exercise, detailed assessments of the junctions identified in Section 7.9 have been carried out and summarised below with Traffic Flow diagrams and full junction analysis output contained in **Appendix R**.

Northern Site Access onto Water Lane

- 8.4.2 To assess the capacity of the potential site access, Junctions 9 has been used. The results of the assessment are summarised in Table 8.3.

Table 8.3: Site Access/Water Lane Priority Junction Assessment Results

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	RFC	Queue	Max RFC
2026 Opening Year + Committed Development + Development				
Site Access left out	<1	0.26	1	0.53
Site Access right out	<1	0.43	2	0.68
Water Lane	1	0.55	<1	0.13

Source: Junctions 9

- 8.4.3 The assessment demonstrates that the revised junction would operate well within capacity with the delivery of the full masterplan option. The maximum RFC (0.68) is on the site access arm (right turn) and a queue of two vehicles is predicted in 2026.

Southern Site Access onto Water Lane

- 8.4.4 To assess the capacity of the proposed site access, Junctions 9 has been used. The results of the assessment are summarised in Table 8.4. The results demonstrate that the junction would operate within capacity with the proposed development traffic.

Table 8.4: Site Access/Water Lane Priority Junction Assessment Results

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	RFC	Queue	RFC
2026 Opening Year + Committed Development + Development				
Site Access	<1	0.17	<1	0.1
Water Lane	<1	0.03	<1	0.07

Source: Junctions 9

A280 / Water Lane Junction

- 8.4.5 Assessment in Section 7.11 identified the need to improve the A280 / Water Lane junction to accommodate future traffic demands and a signalisation scheme has been developed (ITB9105-GA-021A).
- 8.4.6 An assessment of the operation of the improved (signalised) junction of the A280 / Water Lane is presented in Table 8.5 for 2026 with development scenario.

Table 8.5: Water Lane / A280 Signalised Junction Assessment Results

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	DOS (%)	Queue	DOS (%)
2026 Opening Year + Committed Development + Development				
A280 Southbound	7	63.6%	8	65.5%
A280 Northbound	7	71.7%	6	63.3%
Water Lane left	11	75.9%	8	62.7%

Source: LinSig3

- 8.4.7 The results demonstrate that the proposed improvement scheme at the A280 / Water Lane Junction will be effective in mitigating the effects of the additional development traffic in the 2026 design year. The junction would operate well and with significant spare capacity.

Water Lane / High Street / Station Road / Arundel Road Junction

- 8.4.8 To assess the capacity of the Water Lane / High Street / Arundel Road junctions, Junctions 9 and LinSig 3 has been used using the parameters identified in Section 7.11. The results of the assessment are presented in Table 8.6.

Table 8.6: Water Lane / High Street / Station Road / Arundel Road Priority Junctions

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	DOS (%)	Queue	DOS (%)
2026 Opening Year + Committed Development + Development				
J1: Station Road/Arundel Road / High Street				
High Street	<1	37.7%	<1	20.2%
Station Road NB	<1	14.7%	<1	18.6%
Station Road SB	<1	36.5%	<1	24.4%
J2: Pedestrian Crossing on Station Road				
Station Road SB	7	56.1%	5	47.7%
Station Road NB	4	36.2%	2	21.8%
Arundel Road	1	59.0%	<1	33.1%

Source: LinSig3

- 8.4.9 These results demonstrate that the junction would operate well within capacity during both peak periods with a maximum Degree of Saturation of 59.0% on Arundel Road. There is projected to be a maximum of seven vehicles queuing on Station Road approaching the puffin crossing in the morning peak (when the crossing is called). No material queues are projected on High Street or Arundel Road.

A280 / Titnore Lane / A27 roundabout

- 8.4.10 To assess the results of the A280 / Titnore Lane / A27 roundabout, Junctions 9 has been used. The results of the assessment are summarised in Table 8.7.

Table 8.7 A280 / Titnore Lane / A27 Roundabout Junction Assessment Results

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	RFC	Queue	RFC
2026 Opening Year + Committed Development + Development				
A27 Off-slip	2	0.67	2	0.65
Titnore Lane	2	0.60	2	0.67
A280 South West	58	1.08	4	0.80
A280 North	3	0.76	7	0.88

Source: Junctions 9

- 8.4.11 The results demonstrate that in the 2026 design year with development the junction would operate over capacity during the morning peak period, with a maximum RFC of 1.08 on A280 south west and a queue of 58 vehicles. In the evening peak the junction would operate within capacity, with a maximum RFC of 0.88 on A280 north with a queue of seven vehicles.

Mitigation Scheme

- 8.4.12 To address the impacts of the additional traffic generated by the full Masterplan an illustrative improvement scheme has been developed which builds upon that considered in Section 7.13. The scheme has been discussed with Highways England for consideration. The improvement scheme comprises widening of the A280 South West arm to provide a 2-lane entry and extended flared approach. The proposed improvement scheme is presented in **Drawing ITB9105-GA-024** and is fully deliverable within the confines of the public highway.

- 8.4.13 To assess the capacity of the proposed improvement scheme Junctions 9 has been used. The results of the improvement to the junction are shown in Table 8.8.

Table 8.8: A280 / Titnore Lane / A27 Roundabout Junction Assessment Results

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	RFC	Queue	RFC
2026 Opening Year + Committed Development + Development				
A27 Off-slip	2	0.68	2	0.65
Titnore Lane	2	0.60	2	0.67
A280 South West	5	0.83	2	0.61
A280 North	3	0.77	7	0.88

Source: Junctions 9

- 8.4.14 The assessment demonstrates that the proposed improvements on A280 South West arm will effectively mitigate the effects of the additional development traffic in the 2026 with full Masterplan. This improvement is not proposed to be delivered as part of the current application for Land South of Water Lane and will instead be considered should the site North of Water Lane be brought forward.

Long Furlong / Arundel Road / A27 / A280 roundabout

- 8.4.15 The Long Furlong / Arundel Road / A27 / A280 roundabout has been assessed using Junctions 9. The results of the assessment are summarised in Table 8.9.

Table 8.9: Long Furlong / Arundel Road / A27 / A280 Roundabout

	Morning Peak (08:00 – 09:00)		Evening Peak (17:00 – 18:00)	
	Queue	RFC	Queue	RFC
2026 Opening Year + Committed Development + Development				
A280 Long Furlong	3	0.72	8	0.89
A280 South	2	0.69	1	0.51
A27 Off-slip	6	0.86	1	0.44
Arundel Road	<1	0.18	<1	0.09

Source: Junctions 9

8.4.16 The results demonstrate that the junction would operate within capacity during both peak periods in 2026 with development, with a maximum RFC of 0.86 on A27 off-slip and a queue of six vehicles in the morning peak and a maximum RFC of 0.89 on A280 Long Furlong and a queue of eight vehicles during the evening peak.

8.5 A259 Corridor

8.5.1 An overview assessment to consider the impacts of the full development Masterplan on the A259 corridor has been carried out and is presented in Table 8.10 which compares the future traffic flows at each junction in 2026 to the additional traffic that the development options will generate.

Table 8.10: A259 Impact Assessment – Masterplan Option B

Junction	Morning Peak Hour (0800-0900)			Evening Peak Hour (1700-1800)		
	2026 Flows	Dev traffic	% increase	2026 Flows	Dev traffic	% increase
A259 / Golfers Lane / Mill Lane	3,791	186	4.91%	4,022	152	3.78%
A259 / Station Road / B2140	4,112	234	4.18%	4,044	205	5.07%
A259 / Roundstone Lane	2,881	71	2.46%	3,638	61	1.68%
A259 / A280 / B2140	3,651	18	0.49%	4,063	15	0.37%

Source: Consultants Estimates (2026 traffic flows include committed development)

8.5.2 The development is shown to have a small impact on the A259 corridor generating less than a 5% impact on any junction. This modest increase in traffic will not have a material impact on the operation of the corridor once the significant improvements to the A259 corridor have been delivered.

8.6 Summary

8.6.1 An assessment of the performance of the local highway network has been carried out which considers the impact of the development of the Full Development Masterplan for Land both North and South of Water Lane.

8.6.2 The assessment has demonstrated that the following junctions will operate within capacity in the future in all scenarios and that no improvements are required to accommodate development traffic for Land South of Water Lane, Angmering:

- Southern Site Access;
- Northern Site Access;
- Water Lane / High Street junction;
- Water Lane / Arundel Road junction (including puffin crossing); and
- Long Furlong / Arundel Road / A27 / A280 roundabout.

8.6.3 The delivery of the Full Masterplan (as with the Southern Site alone) would necessitate improvement to the A280 / Water Lane junction. An improvement scheme has been developed which would signalise the junction. This is shown to fully mitigate the impacts of all development options considered.

8.6.4 Analysis of the A280 / Titnore Lane / A27 roundabout demonstrates that with development traffic the junction would fail to operate effectively with long queues forming on the A280 approach to the junction. To address this an improvement scheme has been identified for illustrative purposes which would fully mitigate the impact of development considered.

8.6.5 An assessment of the impacts of the Full Masterplan scenarios on the wider A259 corridor has also been carried out which identifies that the development would have a relatively modest impact on the corridor, in general adding less than 5% to traffic demands at each junction. WSCC is committed to delivering major improvements to the corridor which are due to be commence in 2017.

8.6.6 Overall it is demonstrated that there are cost effective improvement solutions available to address any significant traffic impacts of development and that there is no transport reason that the development should be resisted.

SECTION 9 SUMMARY AND CONCLUSION

9.1 Summary

- 9.1.1 This TA has considered the potential transport impacts that would arise from a development of up to 175 residential dwellings on Land South of Water Lane. The application seeks outline consent with access a detailed matter to be determined.

Policy Context

- 9.1.2 Taken together, local and national policy requires new residential development to be located where a range of facilities and services can be accessed by a number of modes of transport including walking, cycling and public transport, so as to minimise the number and length of car journeys. Safe and suitable access to the site should be achieved for all people. The NPPF is clear that development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

Existing Conditions

- 9.1.3 Pedestrians can gain access to local services and facilities via the existing footway provision surrounding the site on Cumberland Road and High Street. There are also a network of streets (that are appropriate for cyclists to use), dedicated cycle lanes and shared paths in Angmering, conducive to encouraging cycling from the site.
- 9.1.4 The local bus services provide good accessibility to wider destinations, including Littlehampton, Worthing and Shoreham-by-Sea. Angmering train station provides access to further destinations including Brighton, Portsmouth, London and Southampton providing opportunities for non-car travel for journeys further afield.

Site Access Arrangements

- 9.1.5 Vehicular access to the development will be provided by the delivery of a priority junction onto Water Lane. The access will be raised over the existing water course running in the northern part of the site through the delivery of a bridge structure. Cyclists will also be able to access the site via the vehicular access.
- 9.1.6 Pedestrians and cyclists will be able to access the site via a proposed footway/cycleway connection onto Weavers Hill and a further connection to the High Street at the south of the site.

Transport Sustainability

- 9.1.7 There is a good range of existing everyday services located within a reasonable walking distance of the site, including retail, education, employment, and leisure facilities, providing opportunities for many journey purposes to be satisfied locally by sustainable modes, particularly walking and cycling. Safe and appropriate walking and cycling routes link to the site to local destinations. The Stagecoach bus service 9 provides regular services to key destinations further afield and offers a realistic alternative to travel by the private car.
- 9.1.8 The Framework Travel Plan identifies opportunities for the effective promotion and delivery of sustainable transport initiatives e.g. walking, cycling, public transport to reduce the demand for travel by less sustainable modes and a series of local improvements have been identified to promote non-car travel as part of the Sustainable Transport Strategy.

Traffic Impact

- 9.1.9 The proposed development will generate some 80 two-way vehicle trips in the morning and evening peak hours. Operational assessments have been undertaken to understand the impact of the extra traffic from the development on the operation of the local highway network.
- 9.1.10 The traffic modelling demonstrates that the following junctions will operate within capacity in the morning and evening peak hours with the additional traffic from the proposed development:
- Site access onto Water Lane;
 - Water Lane / High Street junction;
 - Station Road / Arundel Road junction (including puffin crossing); and
 - Long Furlong / Arundel Road / A27 / A280 roundabout.
- 9.1.11 The combination of committed development and the proposed development would increase the pressure on the A280 / Water Lane junction and which would require improvement to accommodate future traffic levels. An improvement scheme has been developed which would signalise the junction. This is shown to full mitigate the impacts of development and is deliverable entirely within the public highway.

9.1.12 Analysis of the A280 / Titnore Lane / A27 roundabout demonstrates that with development traffic the junction operates within capacity albeit with some deterioration of performance on the A280 South West approach. To address this an improvement scheme has been developed to deliver a two-lane entry on this approach arm which would improve the junction operation.

9.1.13 On this basis of the detailed assessment it is demonstrated that there are deliverable and cost effective solutions available at the A280 Water Lane and A280 / A27 junctions to address any significant traffic impacts of development.

Sensitivity Test

9.1.14 The proposed development on land to the south of Water Lane is part of a larger site which is being promoted for development through the emerging Arun Local Plan. An assessment has been undertaken to demonstrate that the development of land to the South of Water Lane would not prejudice the comprehensive development of the wider site, and that the full development masterplan is deliverable in transport terms.

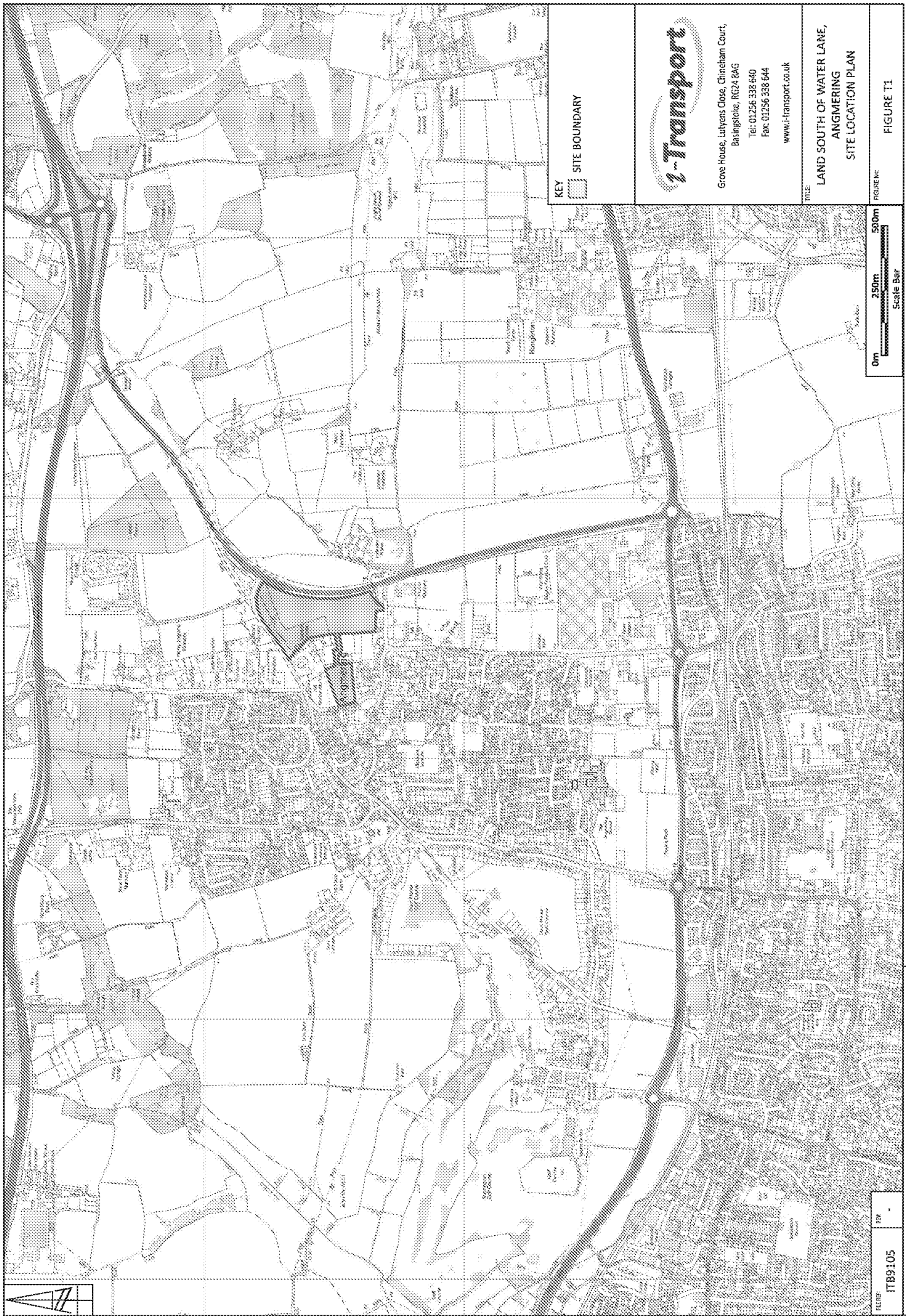
9.2 Conclusions

9.2.1 On this basis, it is concluded that:

- The site is located in an accessible location that is suitable for residential development. With the package of improvements proposed in support of the development, the site will be well connected to local services and facilities and appropriate infrastructure will be in place to ensure opportunities for travel by sustainable modes is taken up;
- The site access arrangements comply with the relevant design guidance and will deliver safe and suitable access for all people; and
- Subject to delivery of the mitigation measures identified, the impact of the development on the operation of the wider highway network within Angmering will not be significant and will fall considerably short of the “severe” test set by the NPPF.

9.2.2 Overall, the proposal is demonstrated to comply with relevant transport policy, particularly the NPPF, and is shown to be acceptable in transport and highways terms.

FIGURES



KEY SITE BOUNDARY	i-Transport Grove House, Ithens Close, Chichester, West Sussex, PO19 1AB Tel: 01256 338 640 Fax: 01256 338 644 www.i-transport.co.uk	TITLE
		LAND SOUTH OF WATER LANE, ANGMERING SITE LOCATION PLAN
FIGURE T1		

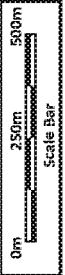
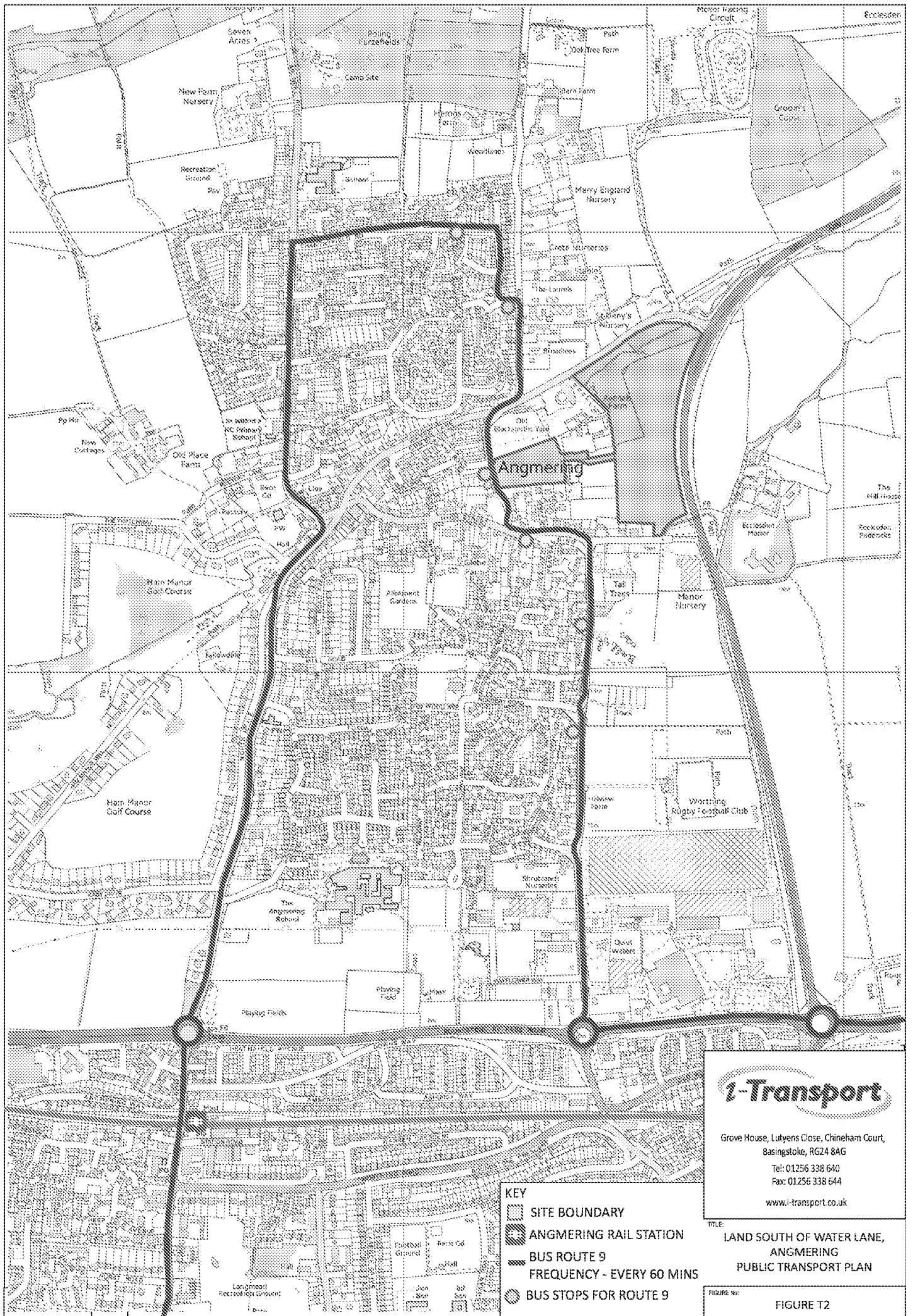
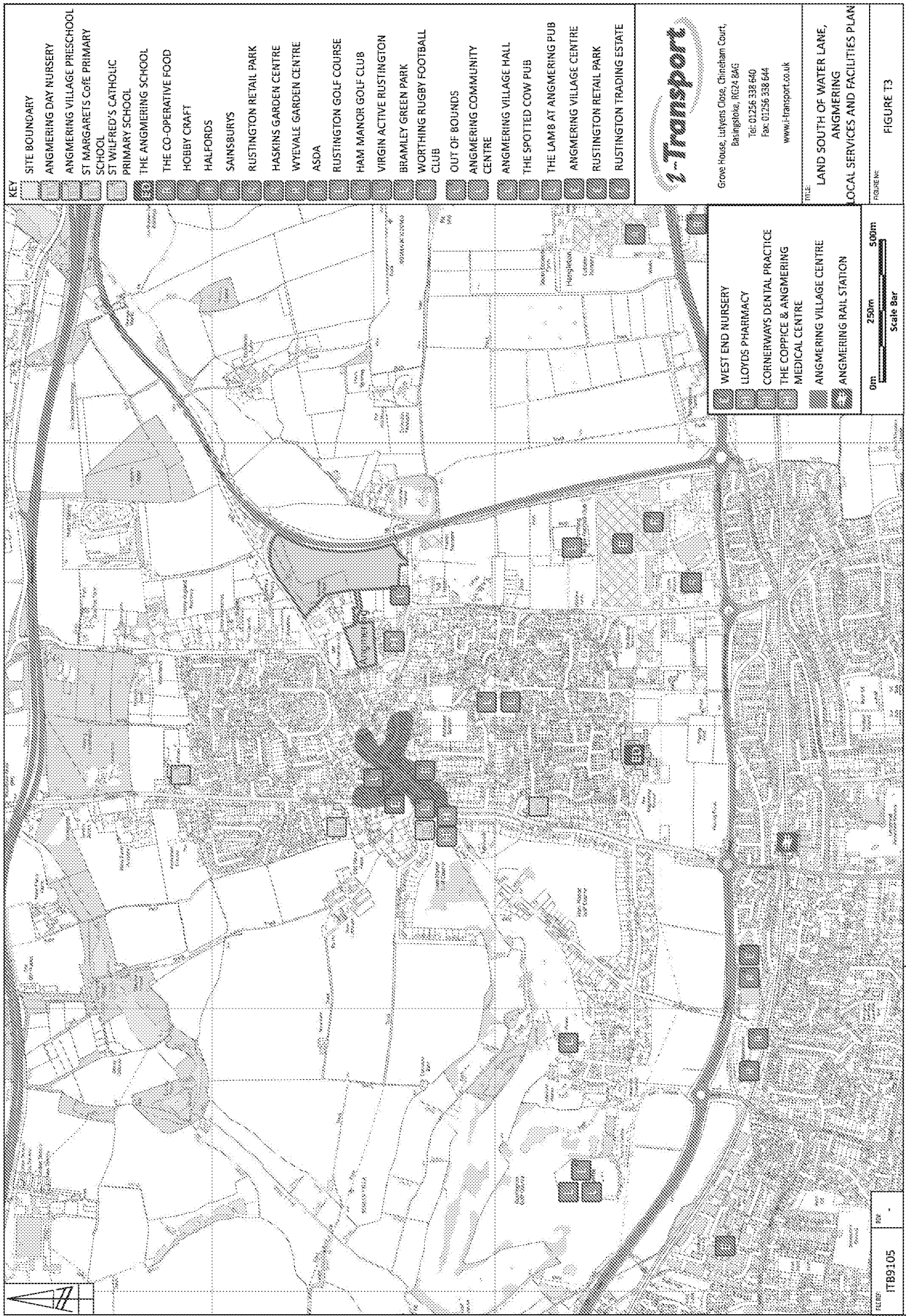
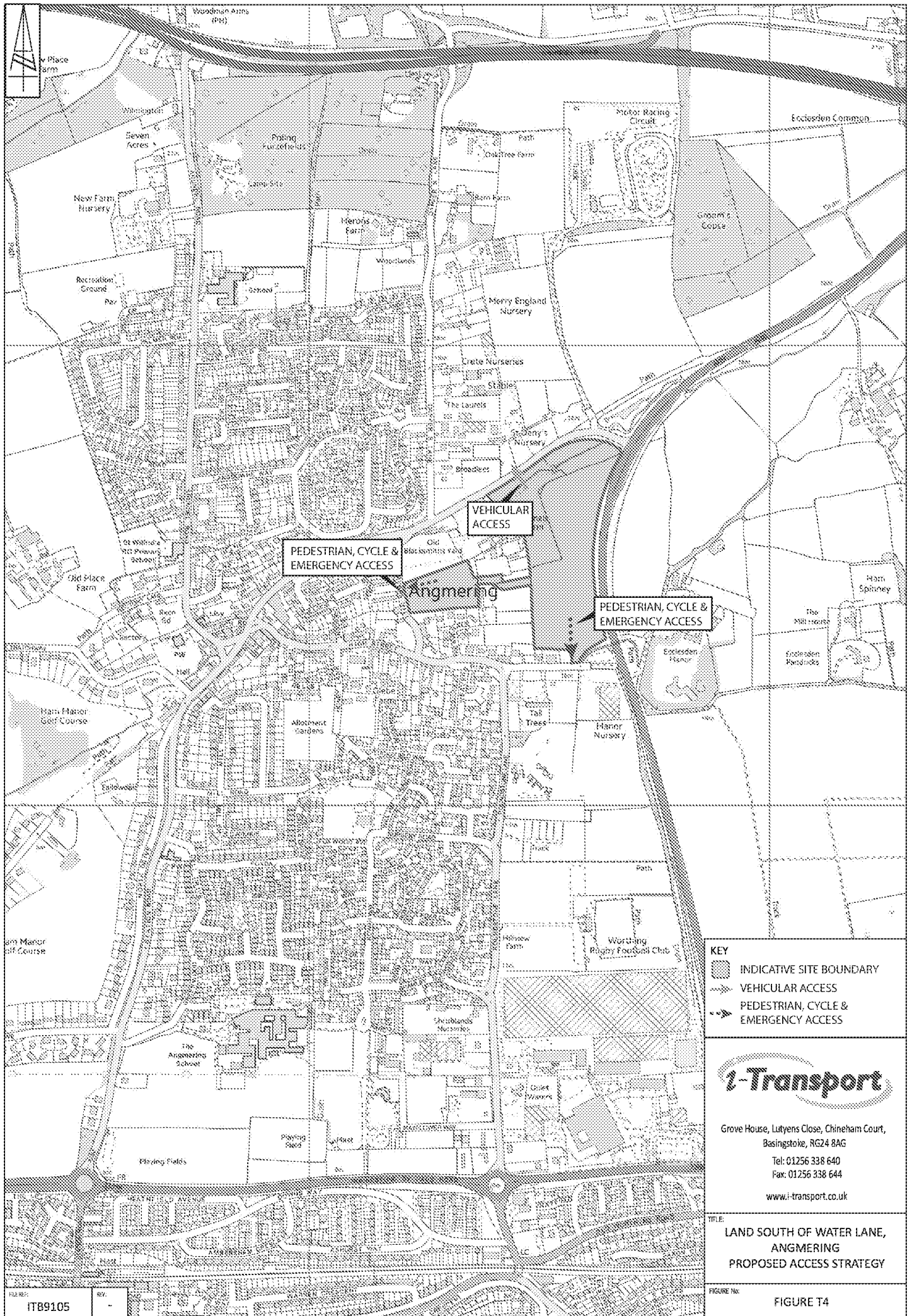
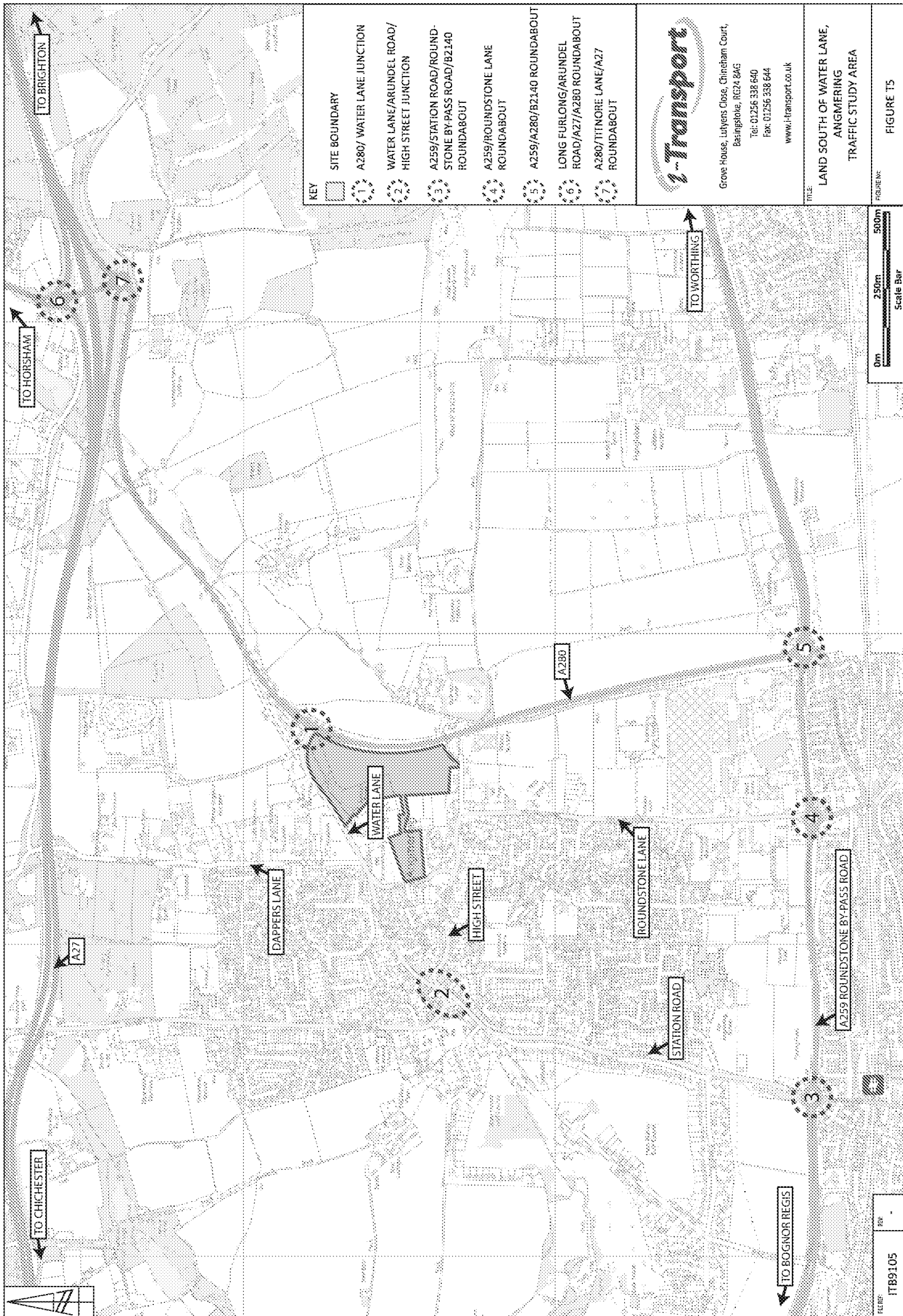


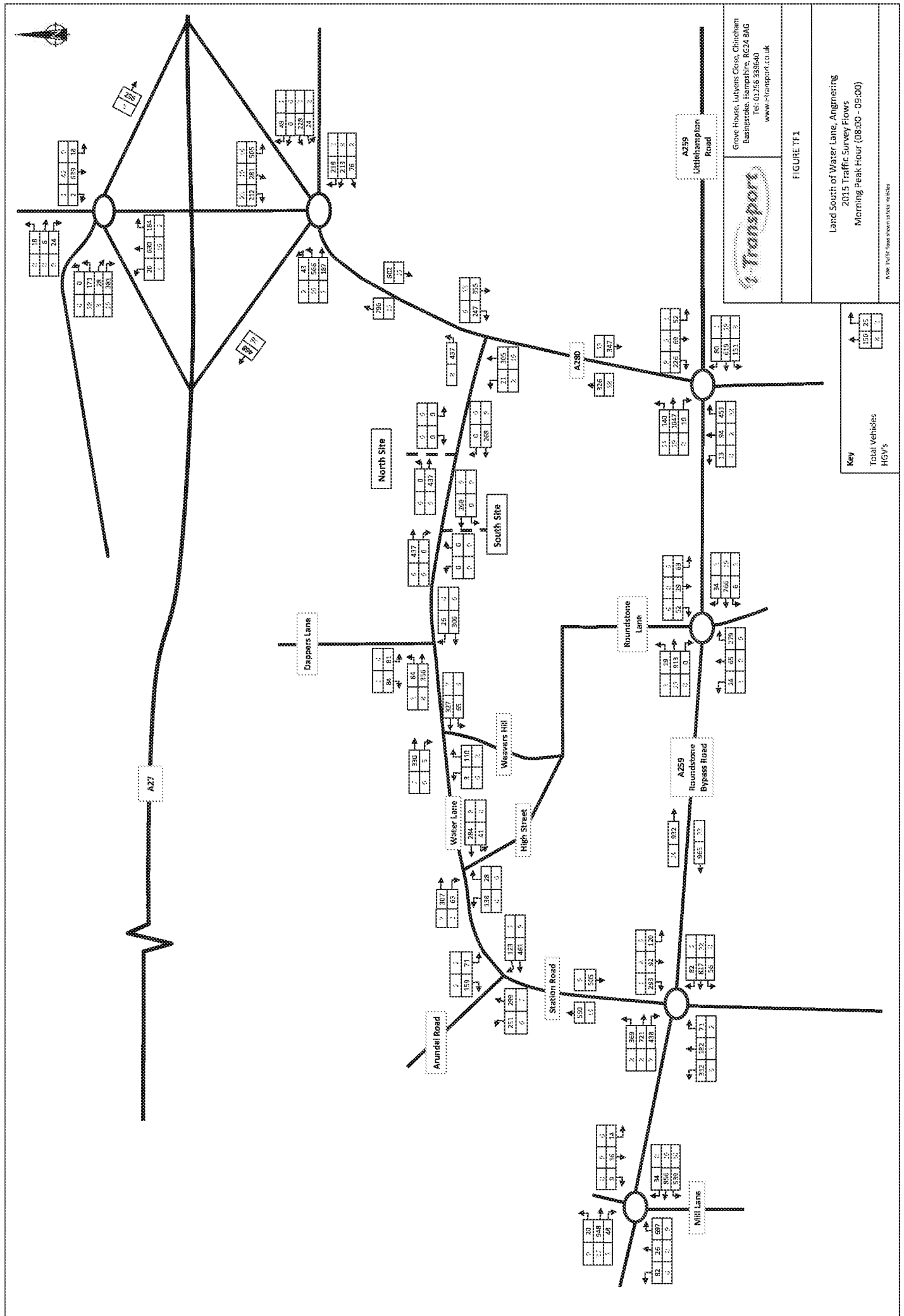
FIGURE T1	REV
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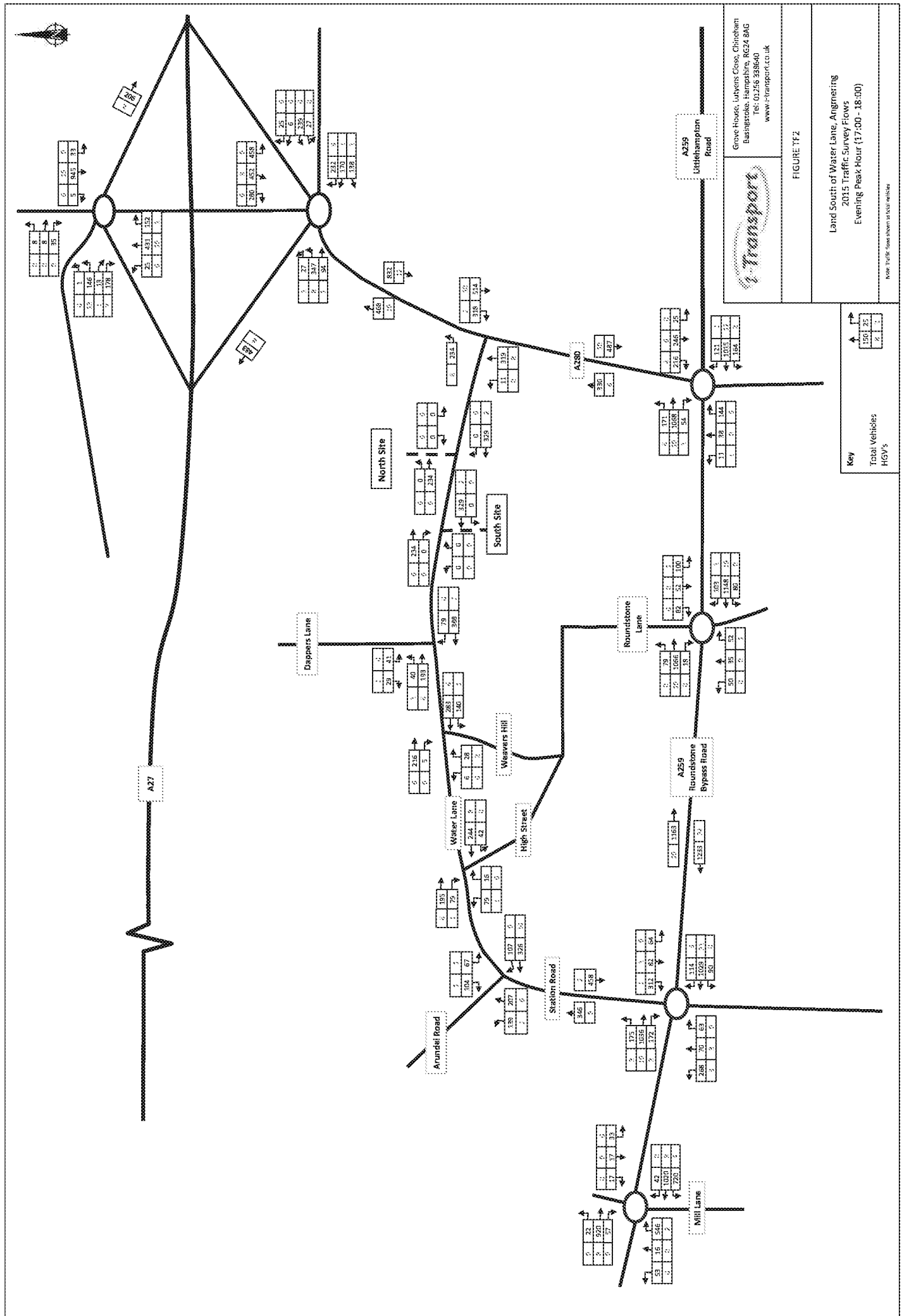


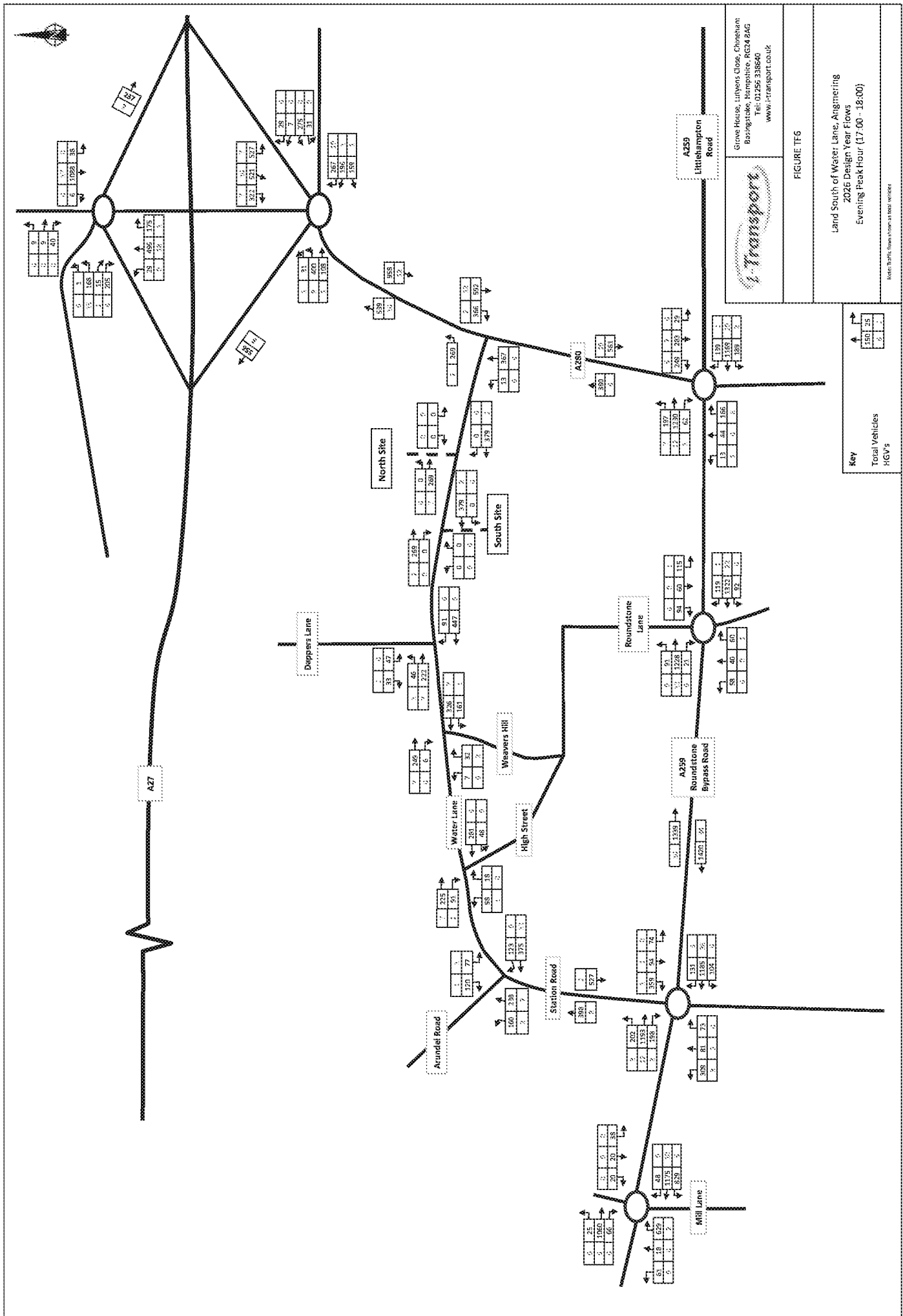












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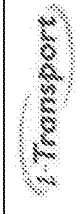
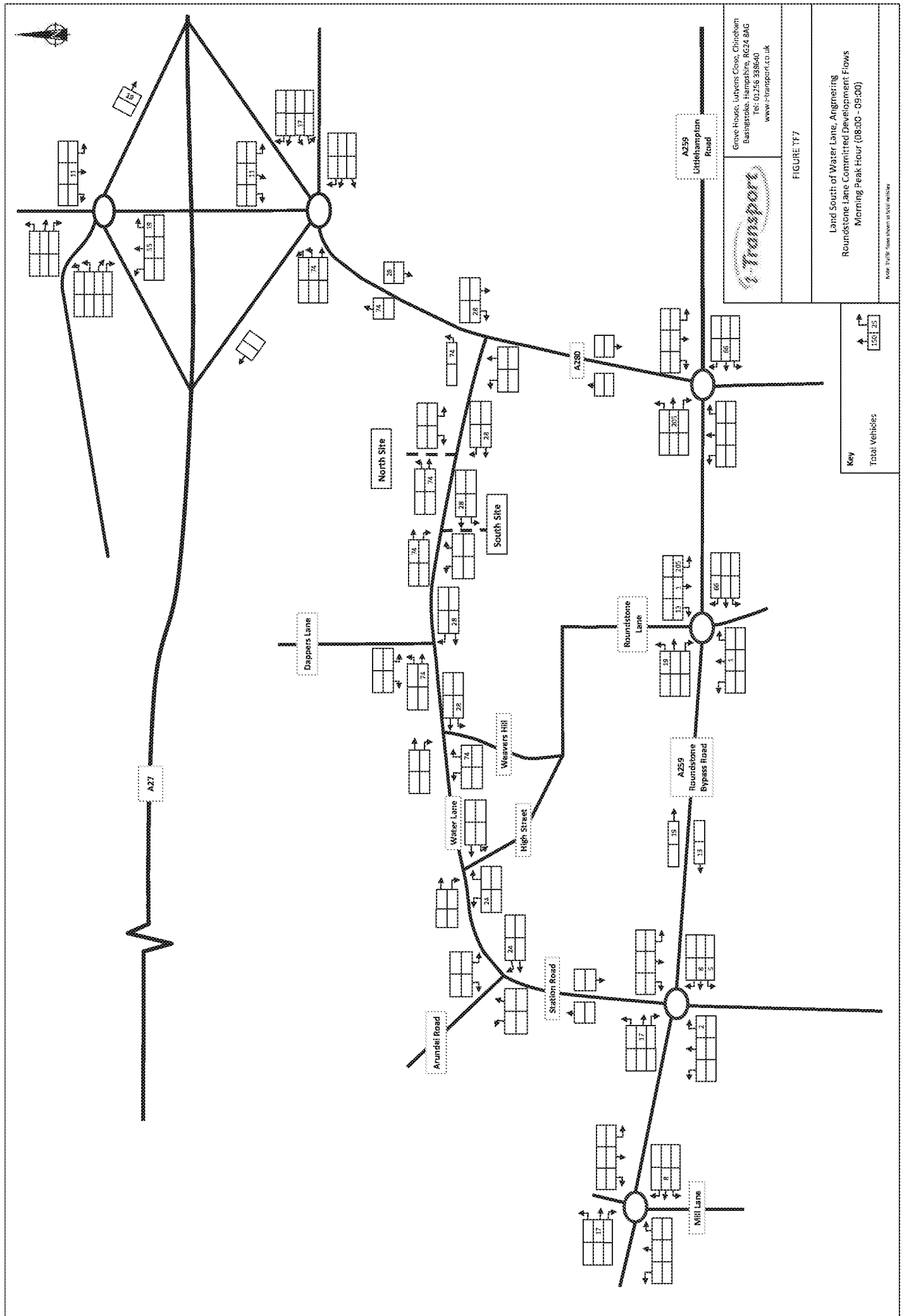


FIGURE TF6

Land South of Water Lane, Angmering
2026 Design Year Flows
Evening Peak Hour (17:00 - 19:00)

Model Traffic Flow Diagram at Road Junctions



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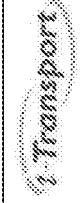
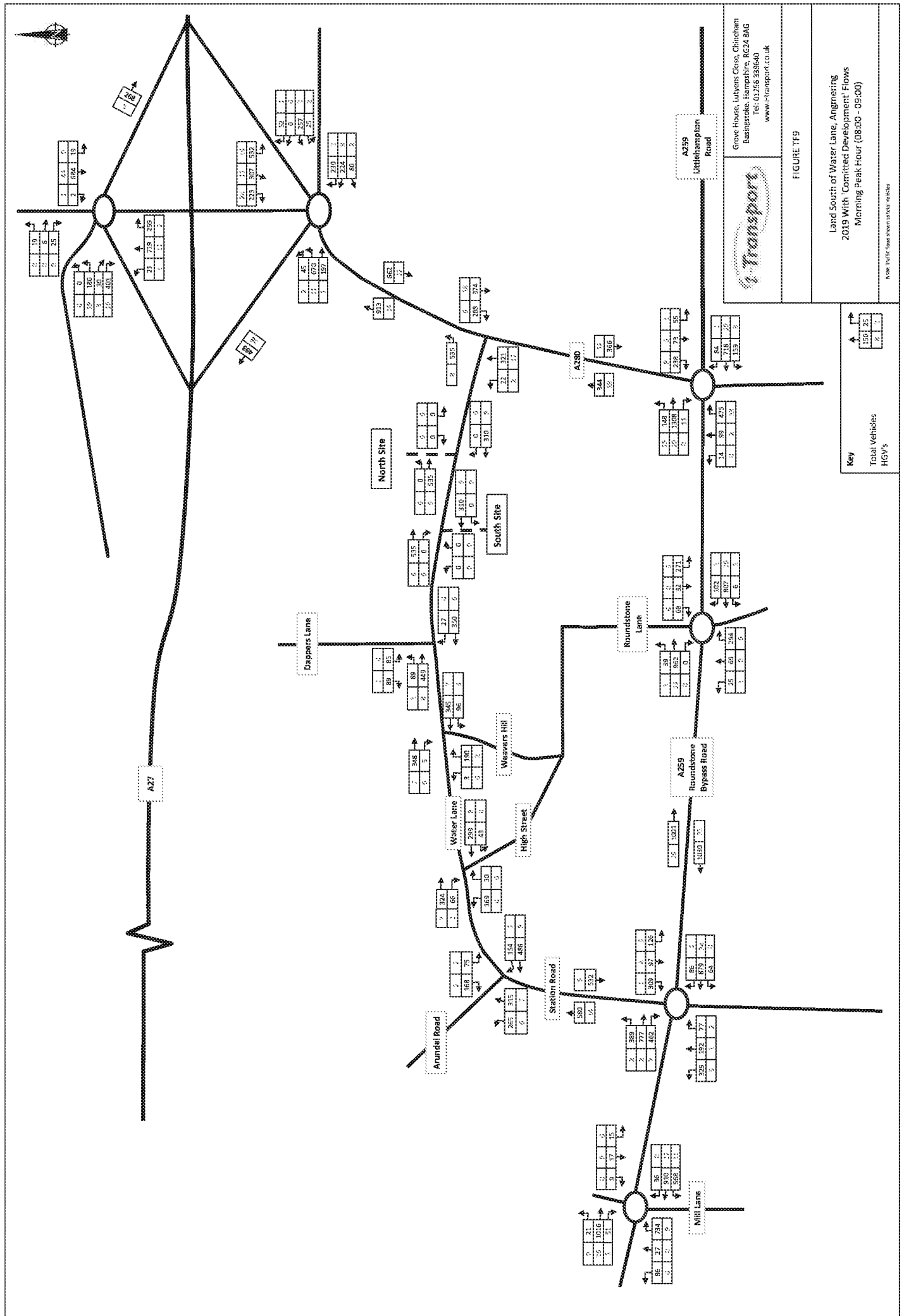
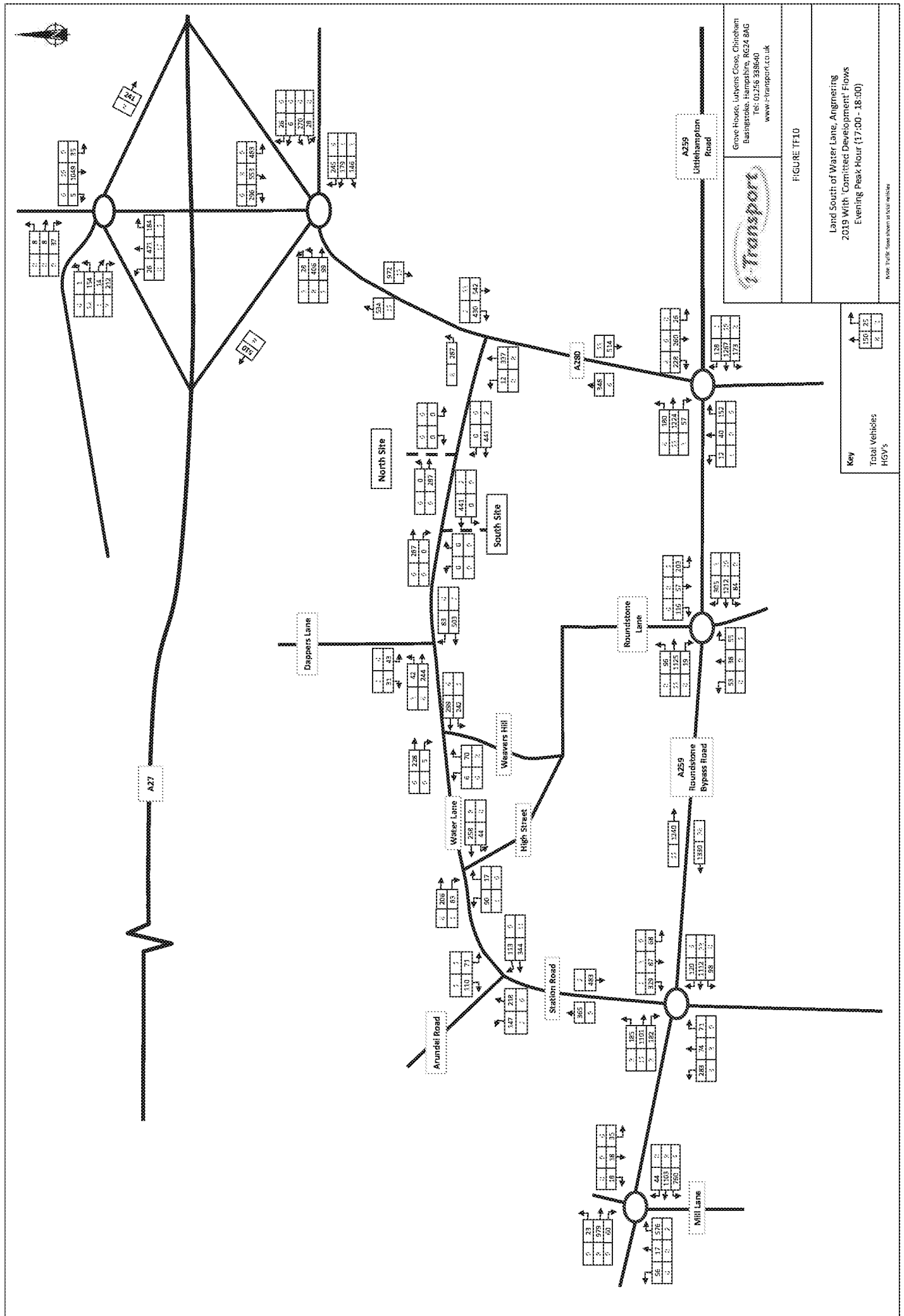


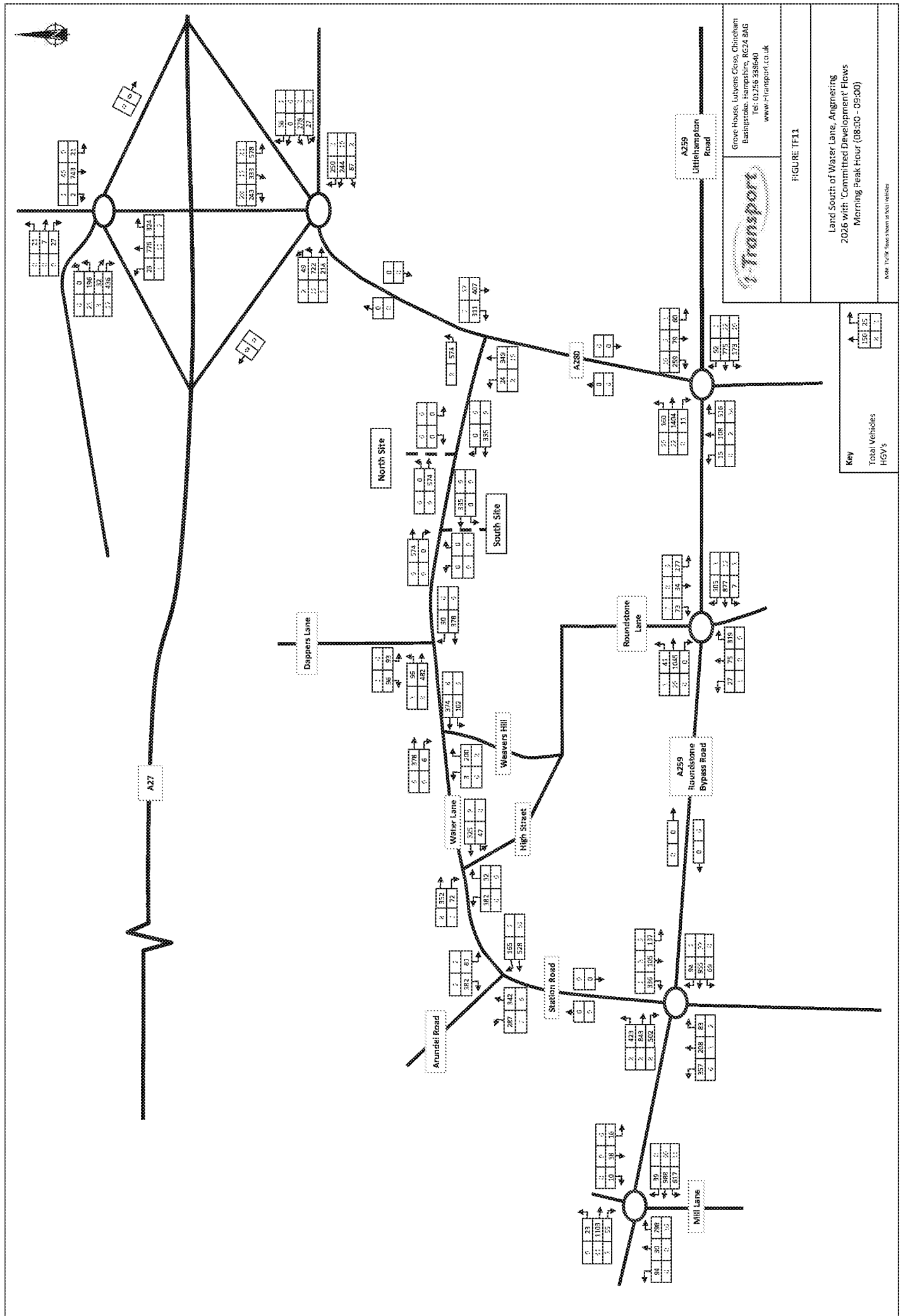
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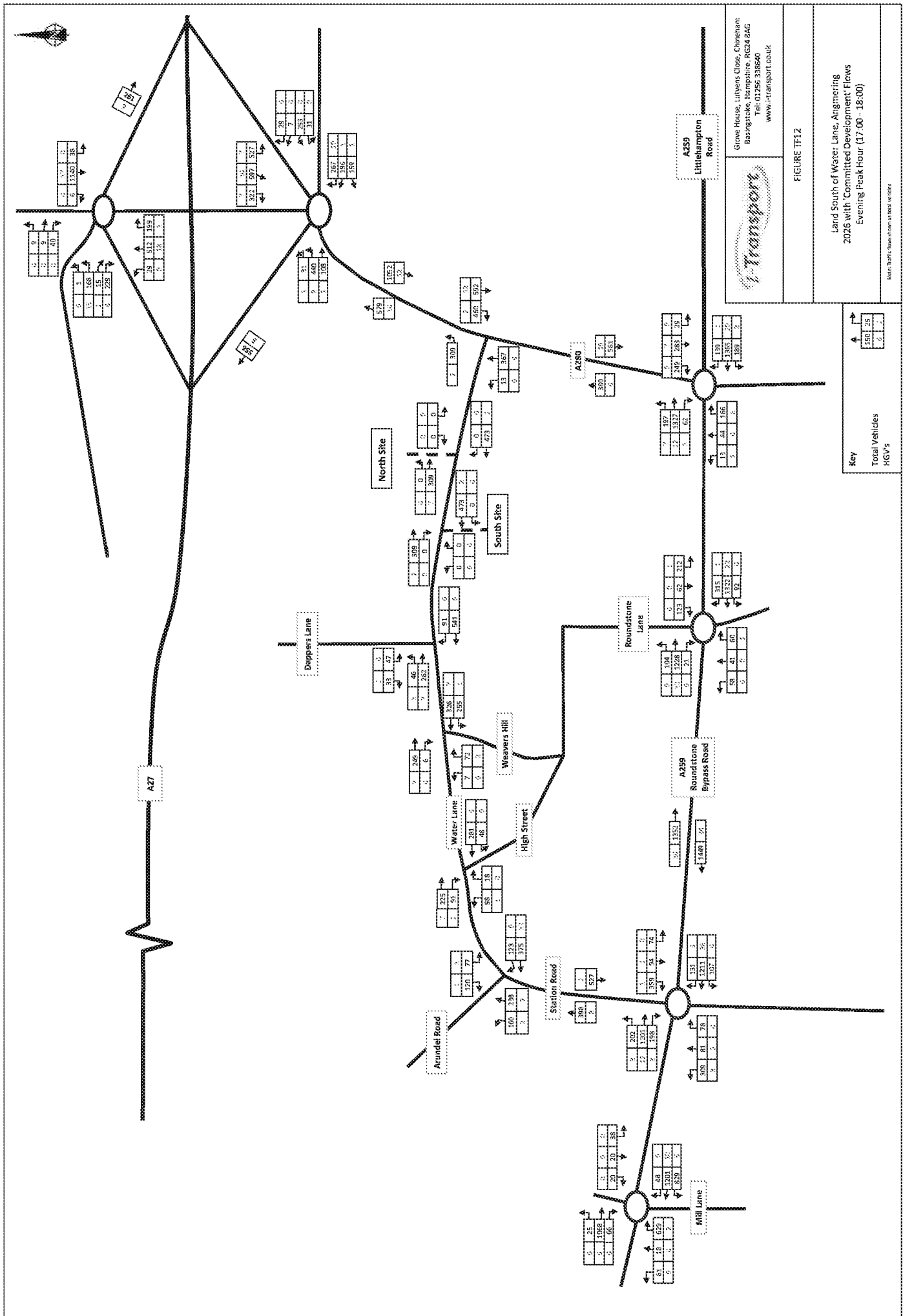
Land South of Water Lane, Angmering
Roundstone Lane Committed Development Flows
Morning Peak Hour (08:00 - 09:00)

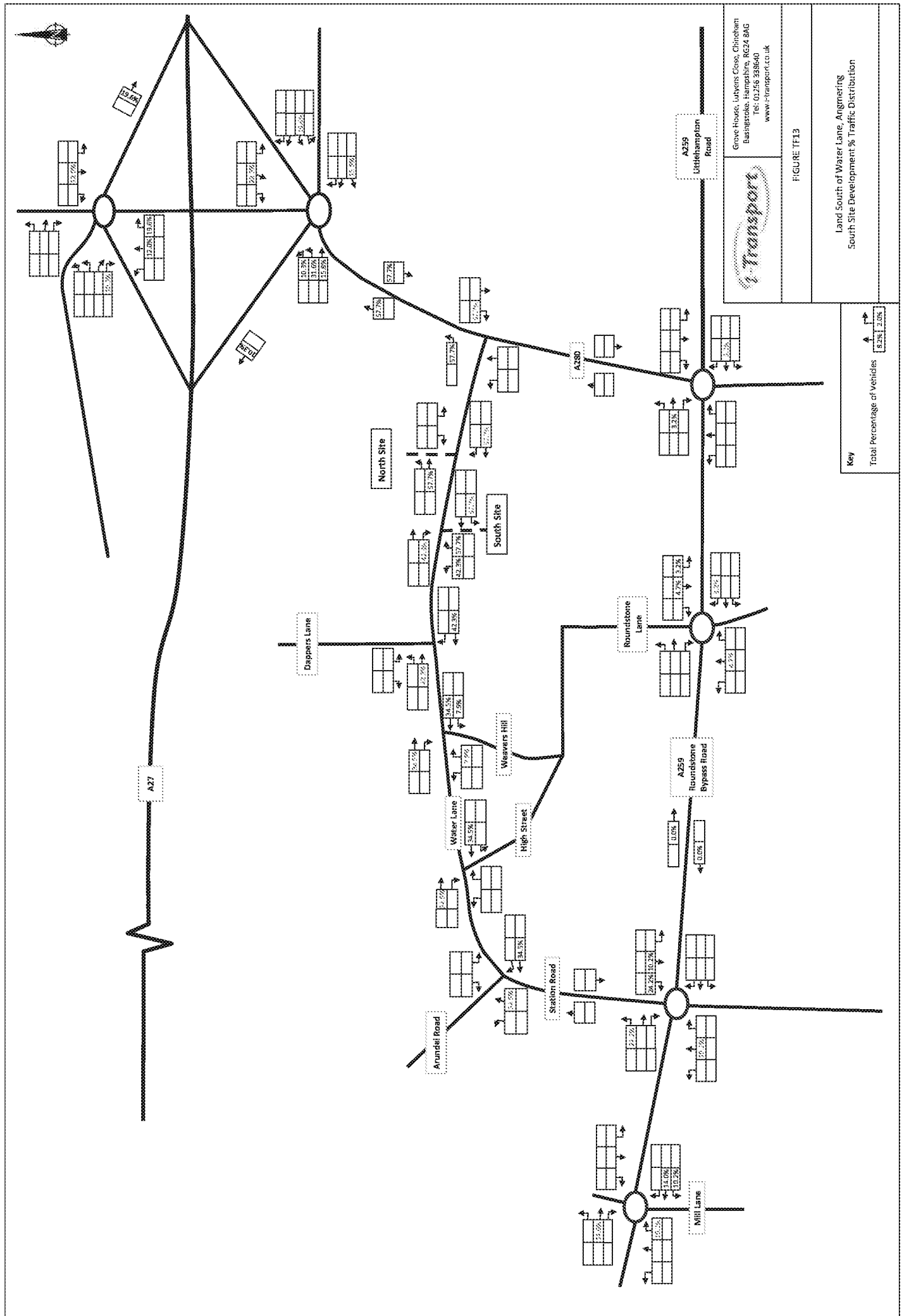
Note: Traffic flows shown in total vehicles

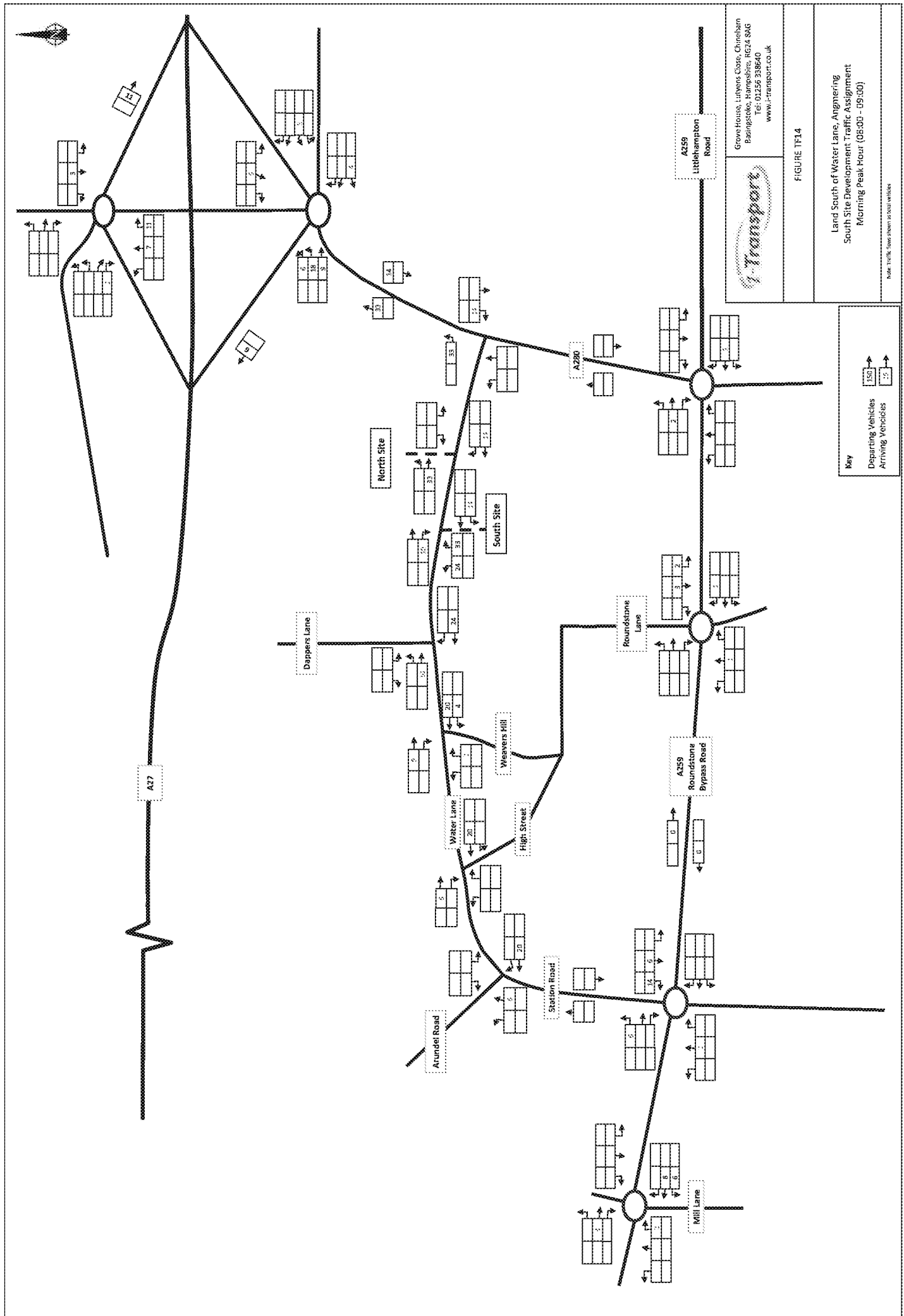












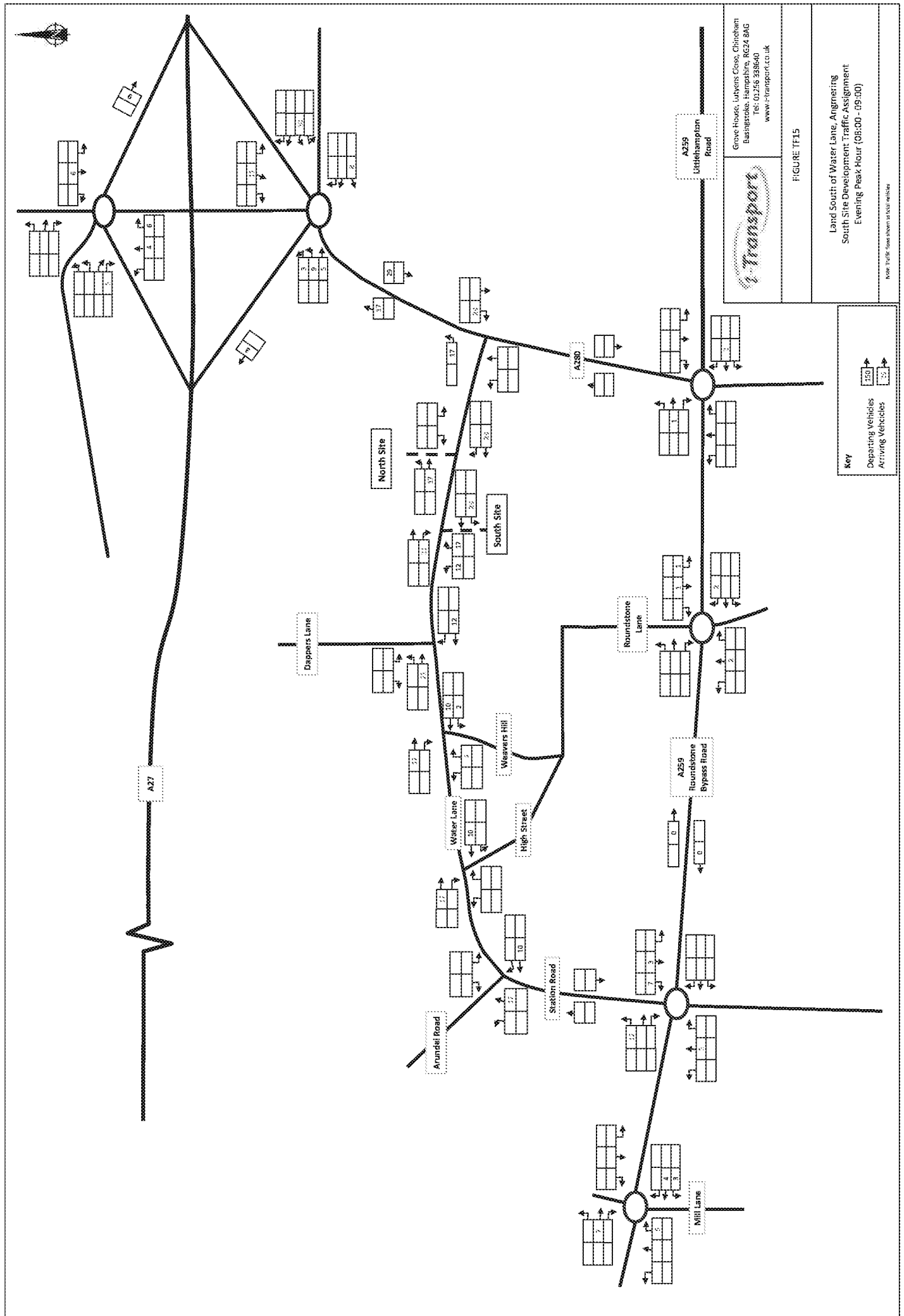
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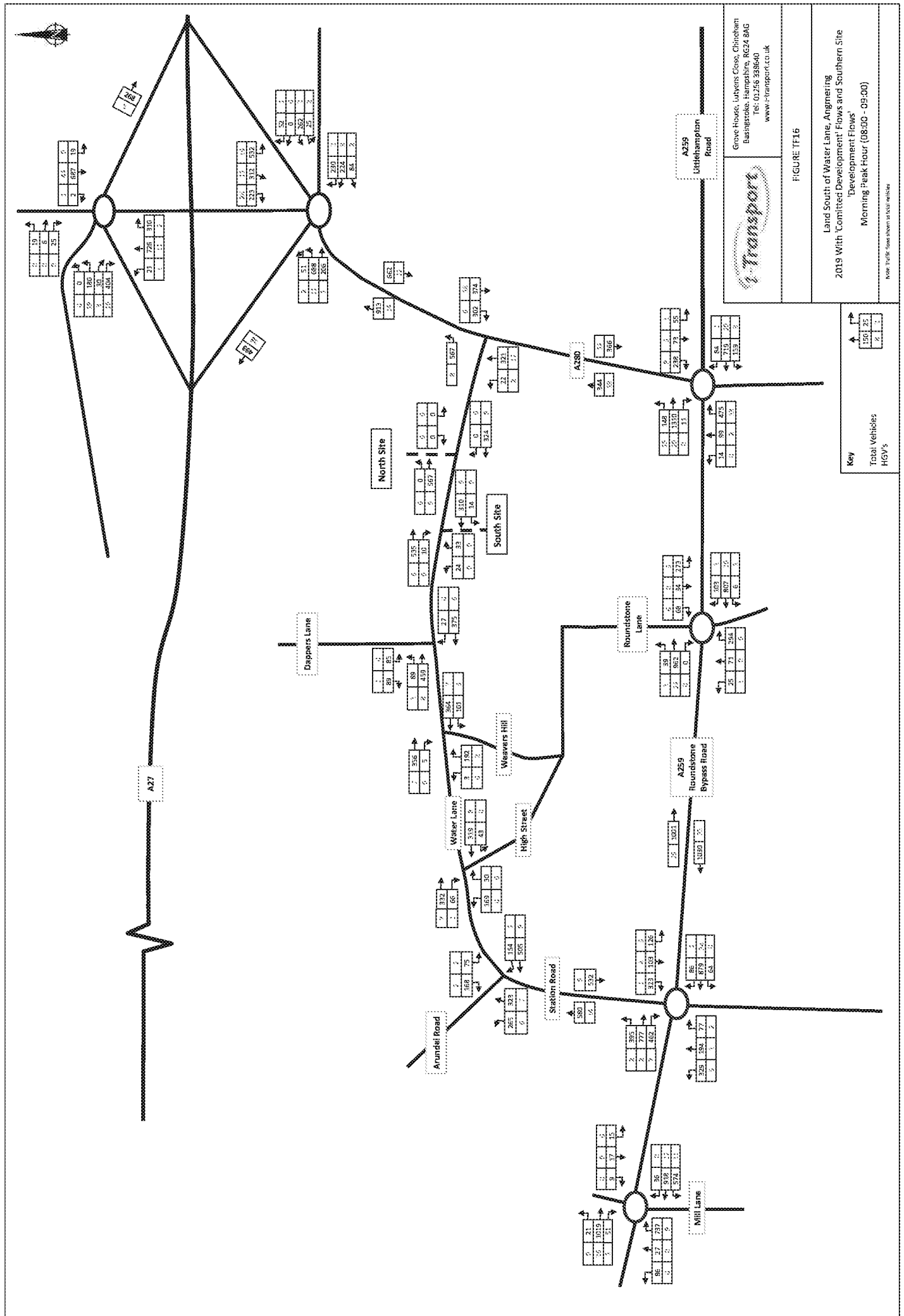


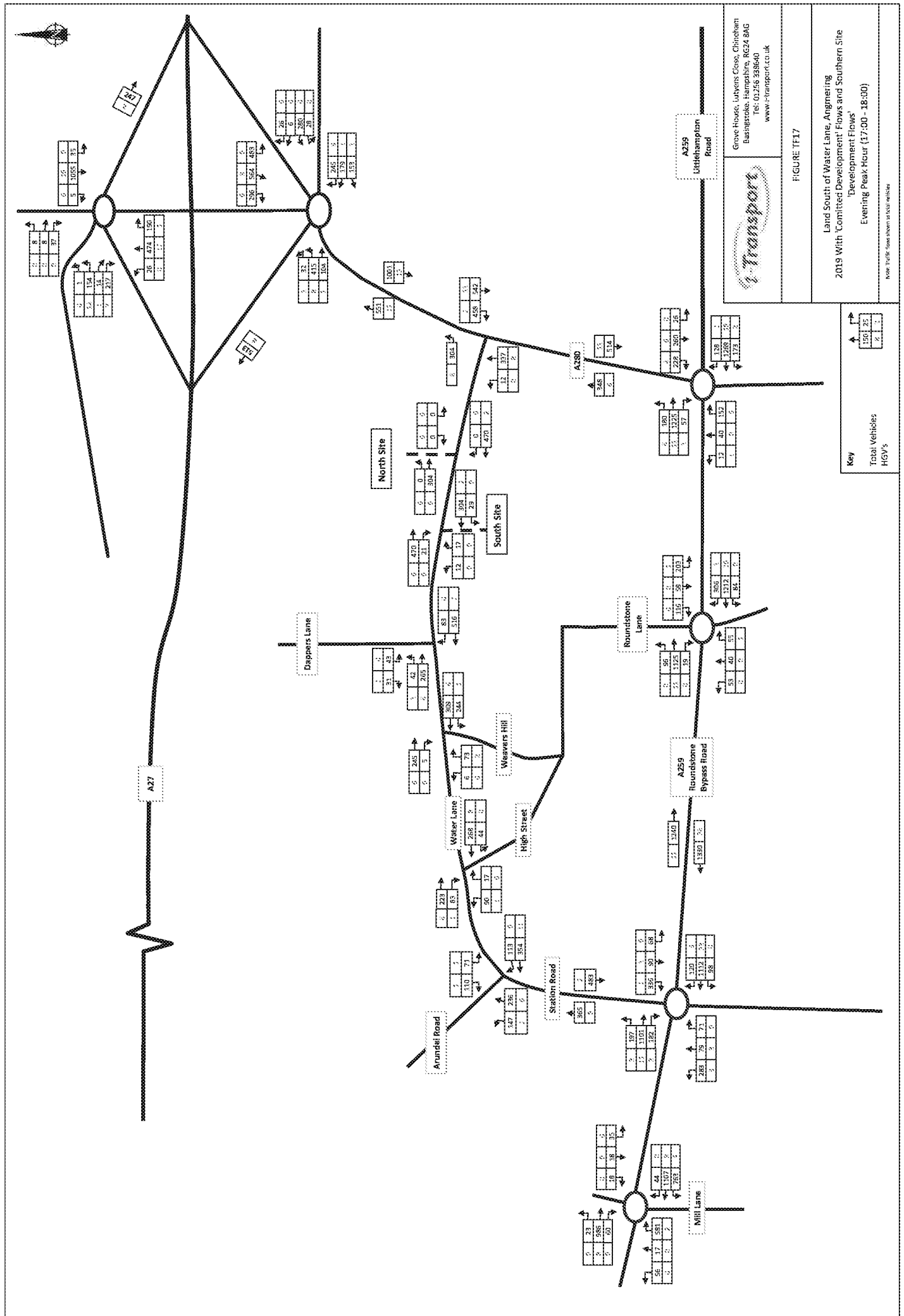
FIGURE TF14

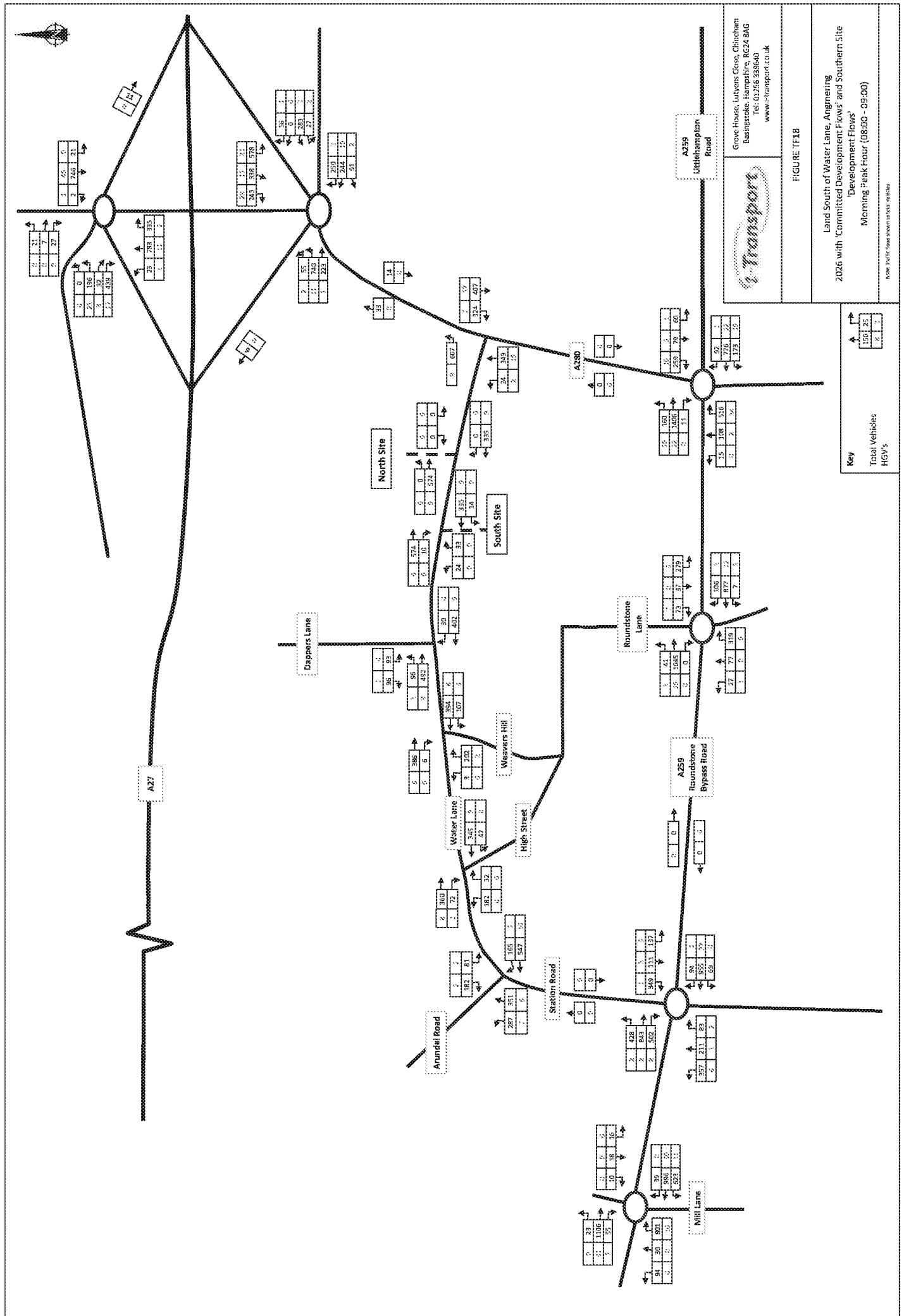
Land South of Water Lane, Angmering
 South Site Development Traffic Assignment
 Morning Peak Hour (08:00 - 09:00)

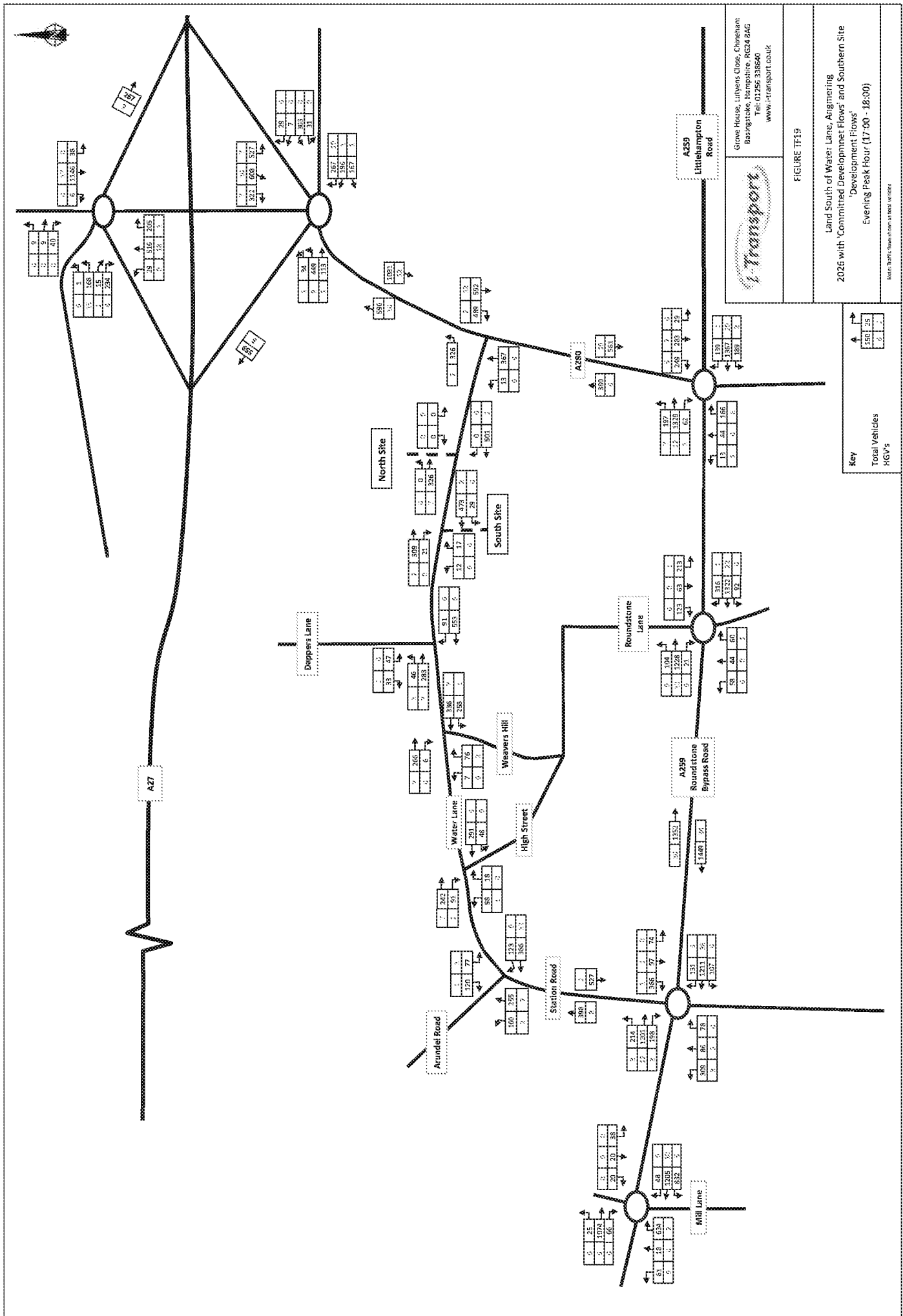
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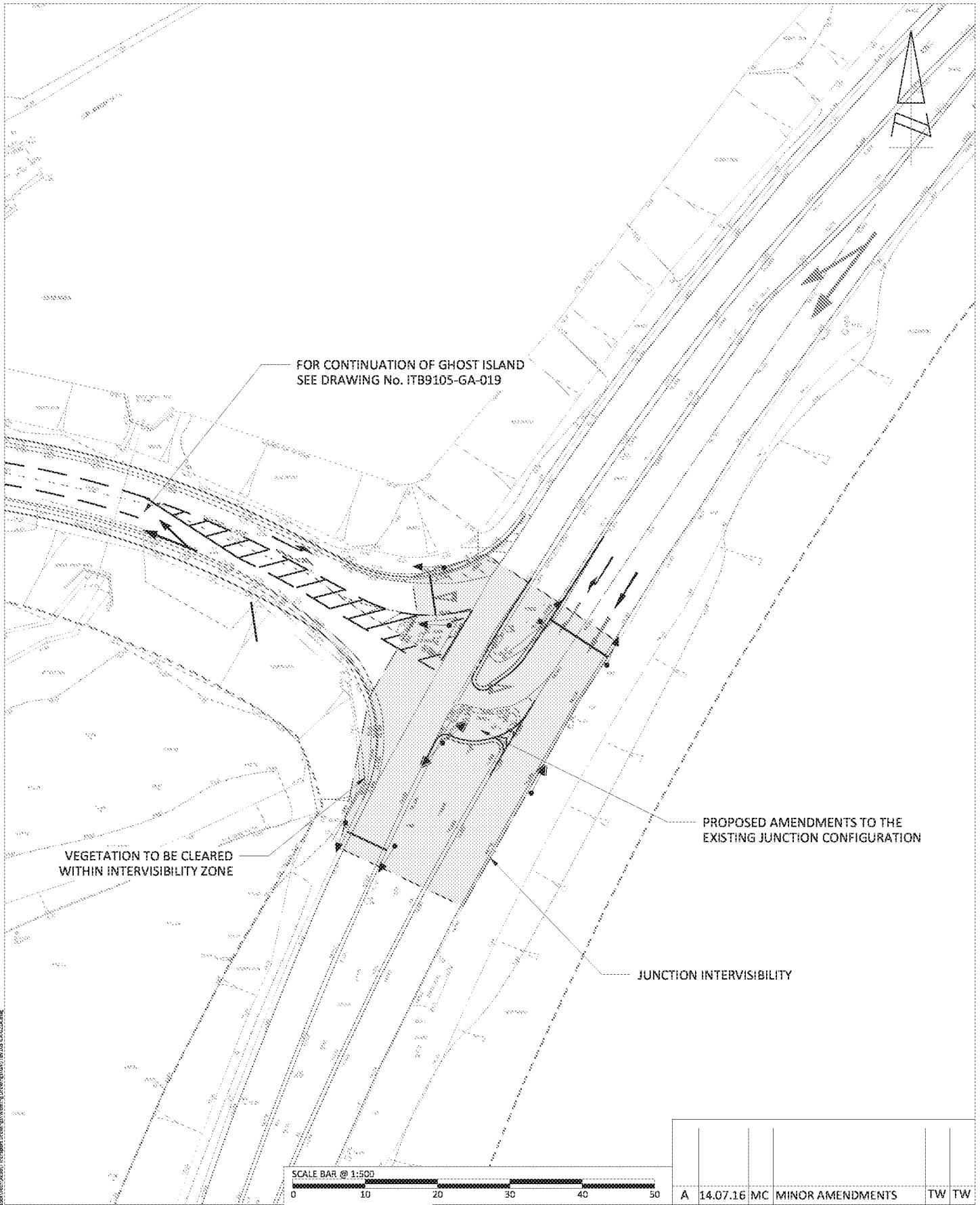






Notes: Traffic flows shown as total vehicles

DRAWINGS



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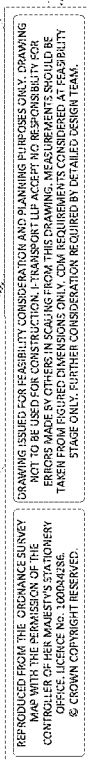
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FOR PLANNING					
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FILE REF: ITB9105		DRAWN: SH		DATE: 23.03.16	
DRAWING No:					
ITB9105-GA-021					
PROJECT No: ITB9105				REV: A	



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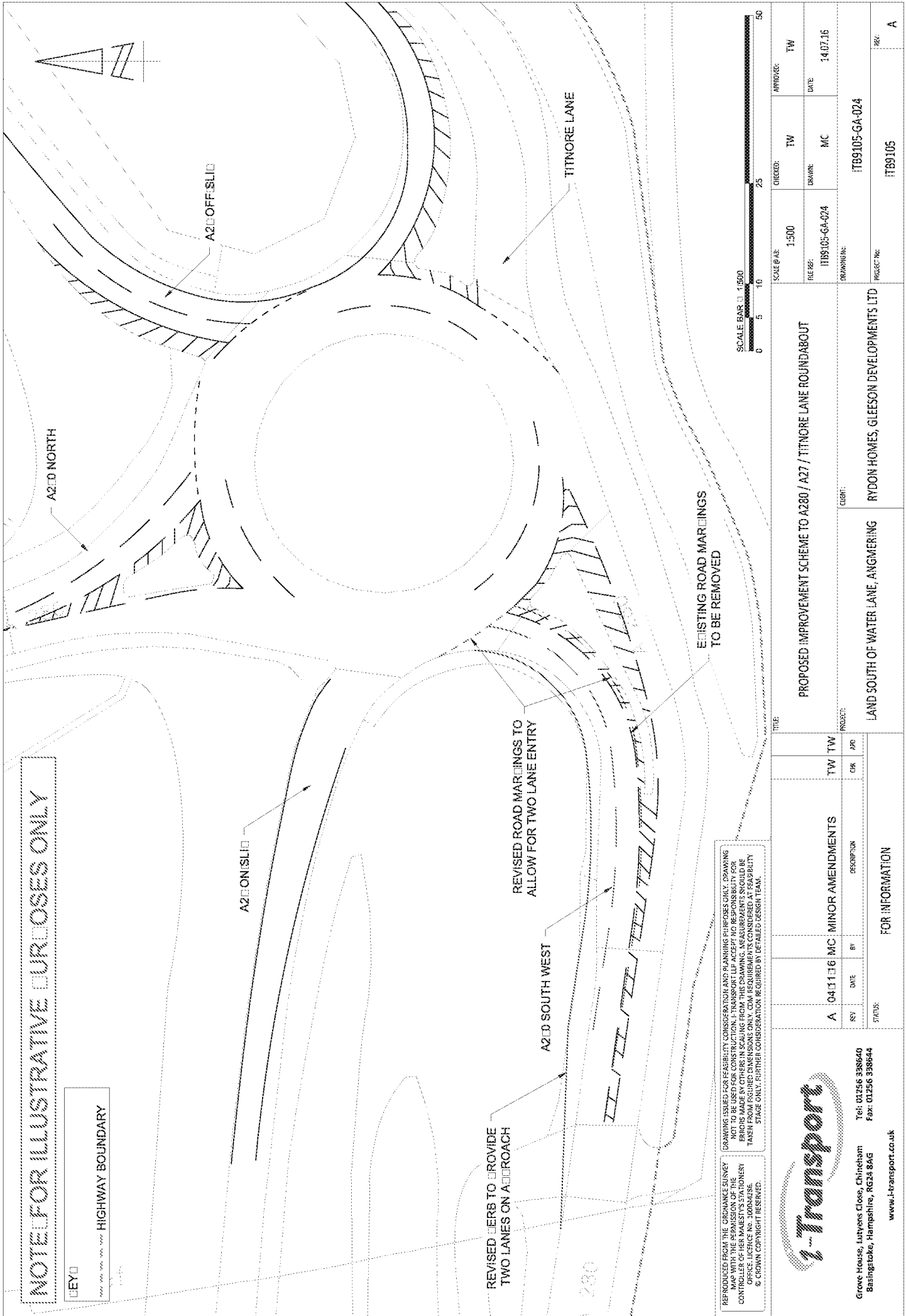
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PROJECT: LAND SOUTH OF WATER LANE, ANGMERING



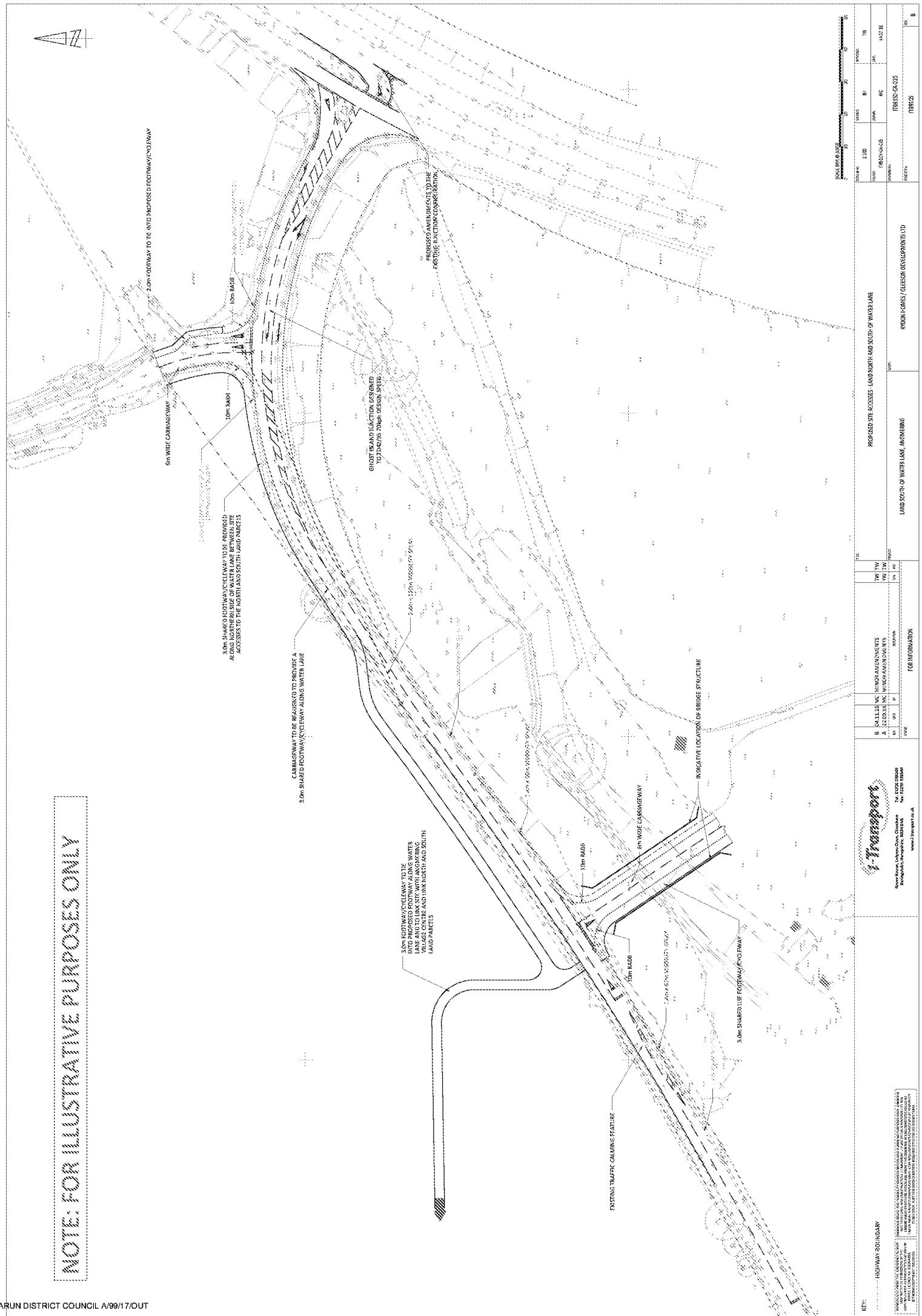
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E. PROPOSED IMPROVEMENT SCHEME TO A280 / A27 / TITMORE LANE ROUNDABOUT		SCALE @ A2: 1:500		CHECKED: TW		APPROVED: TW	
		FILE REF: ITB9105-GA-023		DRAWN: MC		DATE: 30.06.16	
CLIENT: LAND SOUTH OF WATER LANE, ANGMERING		CLIENT: RYDON HOMES, GLEESON DEVELOPMENTS LTD		ORIGINATOR: ITB9105-GA-023		REF: ITB9105-GA-023	



NOTE: FOR ILLUSTRATIVE PURPOSES ONLY



HIGHWAY BOUNDARY

AND TEAMWORK FOR COLLECTIVE ACTION. IT SUPPORTS A RANGE OF LEADERSHIP SKILLS AND
EMERGES AMONG BOTH THE INDIVIDUALS WHOSE GROUPS THEY MANAGE AND THE INDIVIDUALS
THEMSELVES. IN THE LONG TERM, THESE SKILLS CAN BE USED IN A RANGE OF CONTEXTS AND
SITUATIONS. THE GROUPS ARE NOT JUST A MEANS TO AN END, BUT A WAY OF LIFE.

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Rover House, Lufkin Oaks, Clackam
Springdale, Hampshire, RIN28546
Tel: 01226 395508
Fax: 01226 395544
www.rover.co.uk

REFERENCES

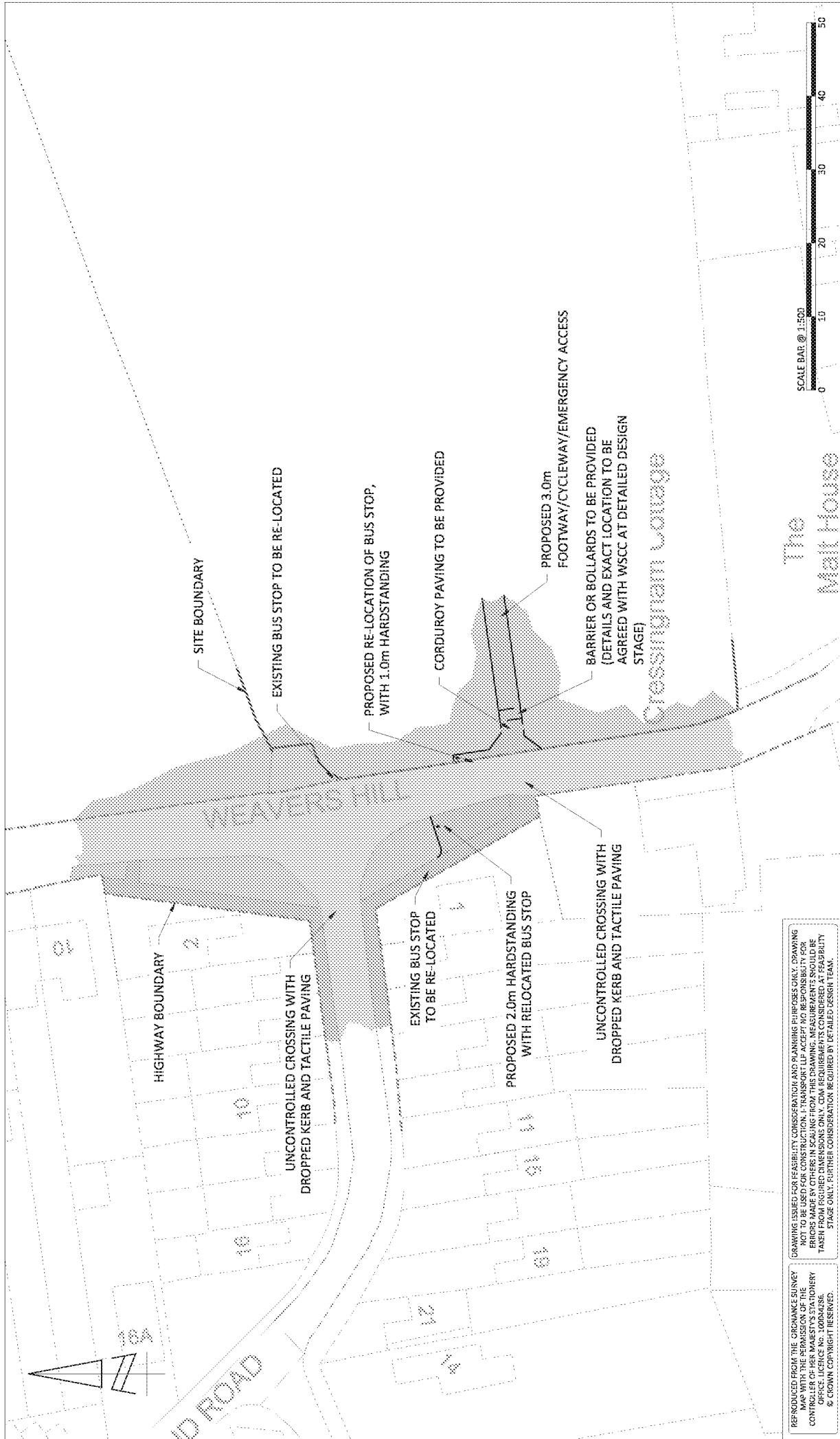
B	Q2-11-16	MC	MINOR AMENDMENTS	TW TW
A	Q2-09-16	MC	WITH CORAMENDMENTS	TW TW
	NY	USE	REASON	CA MC
FOR REFORMATION				
NAME				

PROPOSED SITE ACCESS - LOW NORTH AND SOUTH OF WATER LANE

DAVID SOUTH OF WATER LANE, ANGELO ERING

4-2-00	2000K	4K	14.07.16	17
FILE NO	1100315-04-025			
CANNERS				
1158150-04-025				
PICKLE			0789705	8

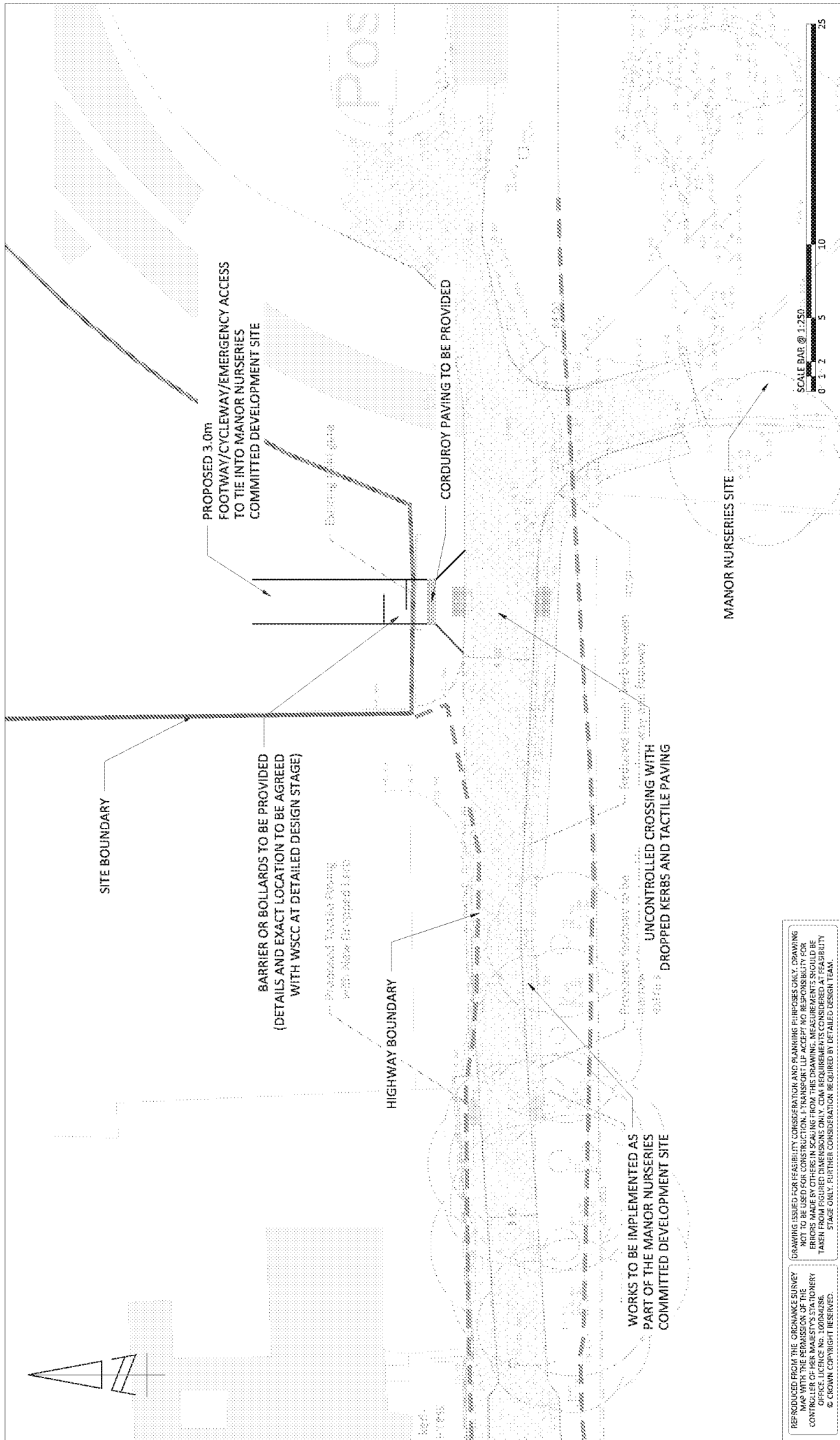
1374



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FOR PLANNING		STATUS:		PROJECT:		TITLE:		PROPOSED FOOTWAY/CYCLE ACCESS ONTO HIGH STREET		SCALE @ A3:		APPROVED:	
A		26.10.16		MC		UPDATES AS PER STAGE 1		RSA		TW		TW	
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												PROJECT NO:	
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												A	



Grove House, Lutvans Close, Chichester
Basingstoke, Hampshire, RG24 8AG
Tel: 01256 338640
Fax: 01256 338644
www.i2-transport.co.uk

APPENDIX A ILLUSTRATIVE MASTERPLAN

[illegible]

ERROR: syntaxerror
OFFENDING COMMAND: %ztokenexec_continue

STACK:

-filestream-