

Land East of Wandleys Lane, Fontwell

Transport Assessment

On behalf of Welbeck Strategic Land II LLP



Project Ref: 38848/5501 | Rev: AA | Date: September 2017

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Document Control Sheet

Project Name: Land East of Wandleys Lane, Fontwell

Project Ref: 38848

Report Title: Transport Assessment

Date: September 2017

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Revision	Date	Description	Prepared	Reviewed	Approved

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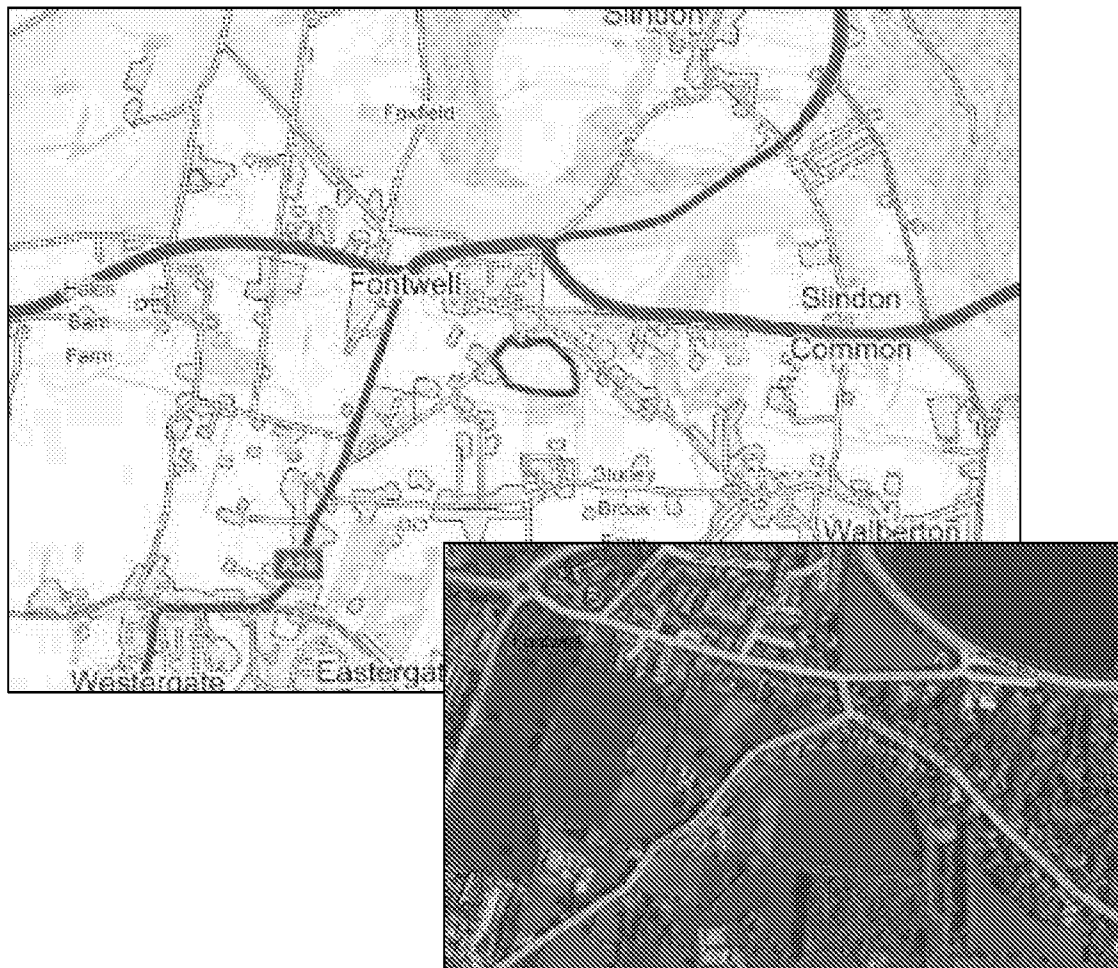
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1 Introduction

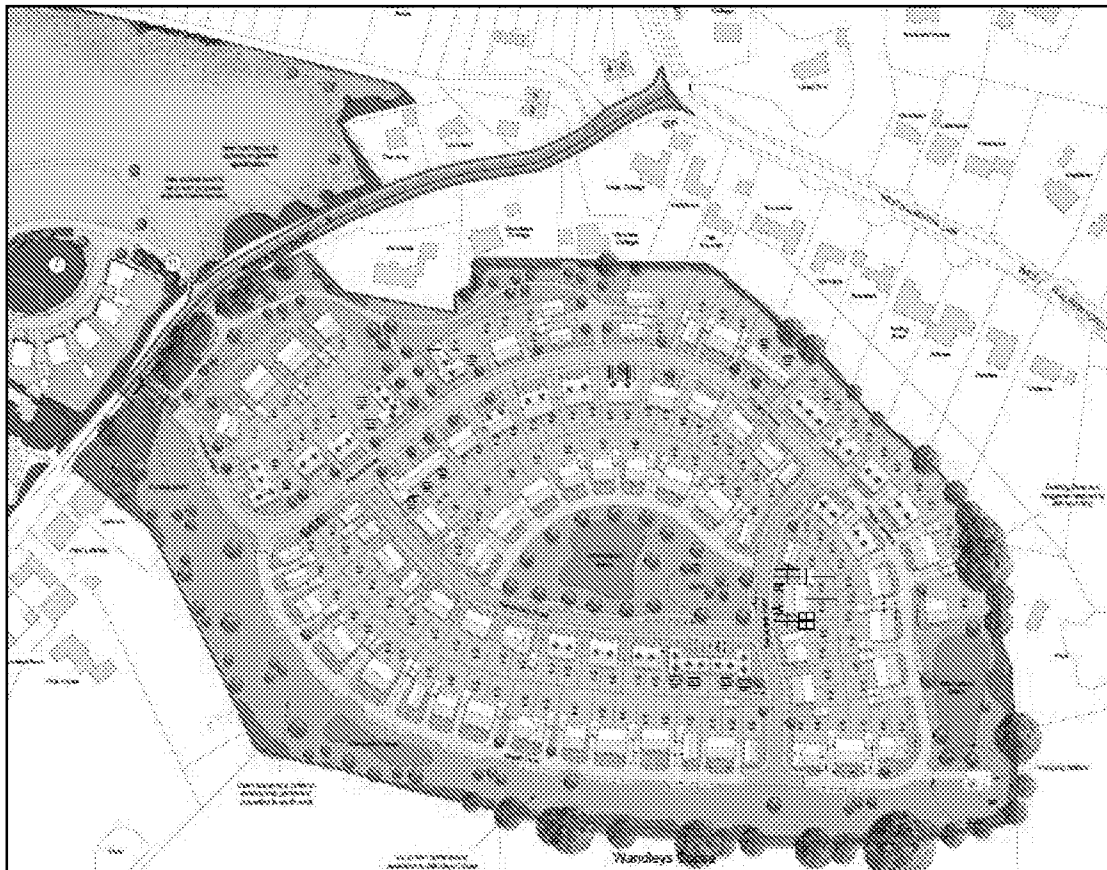
- 1.1.1 Welbeck Strategic Land II LLP have appointed Peter Brett Associates LLP (PBA) to provide transport support in relation to an outline planning application for a proposed residential development on land east of Wandleys Lane, Fontwell, West Sussex.
- 1.1.2 The proposed development site comprises some 6.98 hectares of pasture land, immediately east of Wandleys Lane, Fontwell. There is currently no built uses on site. The site location is illustrated below.



- 1.1.3 The site is bound by existing residential development to the east and north; and to the south is an area of ancient woodland with residential development beyond. Wandleys Lane forms the west frontage of the site and will provide the main means of access.
- 1.1.4 The site is within close proximity to the centre of Fontwell, which is identified as a settlement suitable to accommodate growth over the emerging Local Plan period.

1.2 Proposed development

- 1.2.1 The development proposals seek outline planning permission for a proposed development of up to 157 residential dwellings. Of these, 30% (48 dwellings) are proposed as affordable dwellings in compliance with local planning policy. The development will incorporate landscaping, infrastructure and open space. All matters are to be reserved apart from access, which will be gained from Wandleys Lane.
- 1.2.2 An outline masterplan has been produced for the site and this is illustrated below.



- 1.2.3 Access is proposed from Wandleys Lane which itself will be the subject of an upgrade scheme to the north east of the site access. Further details with respect to the development proposed and Wandleys Lane upgrade scheme are included at section 3.

1.3 This report

- 1.3.1 In preparing this report consideration has been given to the public consultation findings, scoping with officers and current guidance.
- 1.3.2 The key transport issues emerging from the public consultation exercise comprise the additional traffic resulting from the development, the effect of the development on Wandleys Lane and the lack of walking connectivity of the site to local amenities. These have been considered in detail within this report.
- 1.3.3 A detailed scoping exercise was conducted with officers at West Sussex County Council (WSCC), as the Highway Authority for the local highway network, and Highways England (HE), the body that manages the strategic highway network (the A27 locally). The scoping exercise agreed the scope of, and parameters adopted, for the purposes of this Transport Assessment.
- 1.3.4 Pre-application discussions were held between the applicant's planning consultant and Planning Authority officers at Arun District Council (ADC). With respect to transport issues, ADC officers advised that they would like to see it demonstrated that journeys to and from the development would not have to be entirely car borne.
- 1.3.5 This Transport Assessment has considered all of the points above in detail and follows the format outlined below, and as scoped with highway officers:
- Chapter 2 reviews the national and local policy relevant to the proposed development and a description of how the development proposal responds to this.

- Chapter 3 provides a description of the site and discusses the development proposals for the site.
- Chapter 4 reviews the existing and future access to the site by all transport modes including walk, cycle, bus and rail as well as a description of the local highway network.
- Chapter 5 details the existing traffic flows in the vicinity of the site as surveyed.
- Chapter 6 considers the quantum of potential traffic generation to and from the site.
- Chapter 7 derives the forecast traffic movements adopted for assessment purposes.
- Chapter 8 assesses the effects of the proposed development on the local and strategic highway network.
- Chapter 9 provides a Framework Travel Plan for the site.
- Chapter 10 summarises the report.

2 Policy context

- 2.1.1 This section provides a review of national, regional and local policy guidance in relation to the proposed development.

2.2 National Planning Policy Framework

- 2.2.1 The National Planning Policy Framework (NPPF) was adopted in March 2012 and is the current over-arching planning framework for Local Planning Authorities.

- 2.2.2 The NPPF highlights that sustainable development is made up of three elements that are mutually dependent on each other – economic, social and environmental. It further mentions that :

“plans and decisions need to take local circumstances into account, so that they respond to the different opportunities for achieving sustainable development in different areas.”

- 2.2.3 The document is divided into a series of sections, and these are intended to provide guidance in specific circumstances. Section 4 of the document relates to the promotion of sustainable transport. In paragraph 30, planning authorities are encouraged to support a pattern of development which facilitates the use of sustainable modes of transport.

- 2.2.4 The NPPF recognises that different policies should be applied in different communities in order to achieve this balance, and that opportunities to maximise sustainable modes of transport will vary between urban and rural areas.

- 2.2.5 Section 32 lists a number of considerations for planning authorities to apply in their decision making when reviewing Transport reports. These include the need to consider that opportunities for sustainable transport have been taken up, if the access arrangements are safe and suitable and if there are cost effective improvements to the transport network that could be made. Paragraph 32 of the Framework states that:

“Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe”

and that

“Plans and decisions should take account of whether safe and suitable access to the site can be achieved for all people”.

- 2.2.6 Importantly, NPPF advises that development should only be refused on transport grounds if the residual cumulative impacts are likely to be “severe”. The definition of “severe” in this context is unique to the individual site under consideration. However, it may be helpful to consider that within the context of the Environmental Impact Assessment “severe” impacts are often described as those that would have a national or regional significance. In this respect it is clear that NPPF is seeking to strike a positive balance between potential local traffic impacts and local economic or social benefits.

- 2.2.7 The residual effect of the proposed development as described within this Transport Assessment has been assessed and is not considered to be “severe”.

2.3 National Planning Practice Guidance

- 2.3.1 The National Planning Practice Guidance (NPPG) sets out current guidance for different aspects to development. For the purposes of this document, the guidance within the NPPG ‘Travel Plans, Transport Assessments and Statements’ document is considered.

- 2.3.2 The NPPG sets out the following with regards to Transport Assessments:

"Transport Assessments and Transport Statements primarily focus on evaluating the potential transport impacts of a development proposal... The Transport Assessment or Transport Statement may propose mitigation measures where these are necessary to avoid unacceptable or "severe" impacts... Transport Assessments and Statements can be used to establish whether the residual transport impacts of a proposed development are likely to be "severe" ..."

2.3.3 It is noted within the NPPG that Transport Assessments can positively contribute towards:

- *"encouraging sustainable travel;*
- *lessening traffic generation and its detrimental impacts;*
- *reducing carbon emissions and climate impacts;*
- *creating accessible, connected, inclusive communities;*
- *improving health outcomes and quality of life;*
- *improving road safety; and*
- *reducing the need for new development to increase existing road capacity or provide new roads."*

2.3.4 The proposed development will encourage the use of sustainable travel modes by future residents and provide mitigation measures to avoid "severe" impacts as necessary.

2.4 West Sussex Local Transport Plan 2011-2026 (LTP3)

2.4.1 The West Sussex Local Transport Plan 2011-2026 is the County Council's third Local Transport Plan (LTP3), and sets out its vision and objectives relating to transport up until 2026.

2.4.2 The vision and objectives, together with the strategy for their delivery, reflect the Council's desire to promote the following key areas:

- *"Economic performance;*
- *Tackling climate change;*
- *Accessing services, employment and housing; and*
- *Safety, security and health"*

2.4.3 The proposed development will connect with the existing public transport network, walking and cycling networks and provide storage for cycles on site. The development will provide upgrades to footways linking the site to the existing walking network, and link to the footway provided by the consented development at the Land East of Fontwell Avenue.

2.4.4 In this manner it can be demonstrated that the site is accessible by a range of travel modes and, hence, not entirely car borne.

2.5 West Sussex walking and cycling strategy

2.5.1 The West Sussex County Council Walking and Cycling Strategy has been developed to outline West Sussex County Council's aims and objectives for walking and cycling between 2016 and 2026, and provide guidance in prioritising the cycle and walking infrastructure in new developments.

2.5.2 As part of the strategy the Council has identified a number of objectives:

- *"Objective 1 – to ensure that cycling and walking are recognised as important travel model and therefore part of the transport mix.*
- *Objective 2 – to make cycling and walking the natural choice for shorter journeys*

- *Objective 8 – To increase the vitality of communities by improving access by bicycle and on foot*
- *Objective 9 – to help people access rural areas and enjoy walking and cycling*

2.5.3 The development proposals will support the objectives of the Walking and Cycling Strategy through the provision of links between the development and surrounding walking and cycling network. This includes a connection to the permitted development west of Wandleys Lane which will provide local walking and cycling links, amenities and employment opportunities for the wider area.

2.5.4 In addition, the developer will upgrade the pedestrian link along Wandleys Lane in order to promote walking as a transport mode from the site to the village and bus stop locations.

2.6 Emerging Arun District Council Local Plan – October 2014 Publication

2.6.1 Arun District Council are currently consulting on main modifications to the Local Plan (Pre-submission Consultation - Arun Local Plan 2011 – 2031). and therefore its policies are considered to carry some weight.

2.6.2 Strategic Allocation (SD6) in Fontwell for the delivery of 400 dwellings is immediately adjacent to the application site. This strategic allocation demonstrates that the Council consider Fontwell to be a settlement capable of accommodating a significant number of new dwellings over the Plan period. This site has recently been granted planning permission.'

2.6.3 On this basis, it is considered that the application site would be an appropriate residential site, to provide additional housing. The application site is located opposite the permitted strategic site and hence the proposed scheme would represent logical further extension of Fontwell.

2.6.4 With respect to Transport the emerging Local Plan includes the following:

- Policy SD SP1 confirms that the council will take a positive approach to proposals that reflect sustainable development as contained within the NPPF.
- Policy D DM1 10 suggests that developments should utilise existing transport networks or improve access via a system of integrated networks to promote walking and cycling to encourage these sustainable modes.
- Policy T SP1 covers a number of areas relating to the councils vision for Transport including:
 - Encouraging designs that reduce the need to travel by car by improving access to public transport;
 - Protect committed and indicative major road upgrade schemes to facilitate the strategic growth of the district;
 - Incorporate appropriate parking provision in line with guidance from West Sussex County Council's parking policy; and
 - Is supported by an effective and deliverable Transport Assessment that demonstrates how the transport effects of development can be effectively managed and mitigated, including the provision of an effective Travel Plan.

2.6.5 The proposed development is considered to be in accordance with the above emerging Local Plan policies as the development offers opportunities for sustainable travel to visitors, and residents, being located within walking distance to bus stops that provide a connection to local amenities and the railway station. The local walking cycling and public transport opportunities will be enhanced by the development as detailed within this report.

2.7 Arun Local Plan 2003

2.7.1 Arun Local Plan was adopted in 2003 and provides a number of saved policies in relation to Transport as outlined below:

- GEN 7 indicates that proposed developments will be permitted provided they promote sustainable transport measures that will reduce the need to travel by car, and allows for safe movement of pedestrians and vehicles.
- GEN 12 provides the District Council's view that developments should provide adequate parking on-site to reduce the potential environmental harm from parking demand being met elsewhere whilst balancing this with potential highway safety problems and restrictions on the existing highways in the vicinity of the site.
- GEN 14 places further emphasis on providing links to sustainable transport through the provision of measures that allow effective access to the public transport network to create desirable travel patterns.
- GEN 15 states that new developments should, where appropriate, provide safe and attractive walking and cycling facilities both within and in the surrounding area.

2.7.2 The proposed development is considered to be in accordance with the saved Local Plan policies above as the development offers and enhances opportunities for sustainable travel to visitors, and residents, being located within walking distance to bus stops that provide a connection to local amenities and the railway station.

2.8 Local design guide

- 2.8.1 The West Sussex County Council Local Design Guide will be used as a reference for the design of the proposed development.
- 2.8.2 The design guide sets out the preferred geometry for developments with regards to design features such as road and footway widths, visibility splays, and parking provision.

2.9 Planning application WA-22-15-OUT

- 2.9.1 On the 13th July 2017 the Secretary of State gave formal consideration to the Inspector's report for the proposed development of 400 units on the Land East of Fontwell Avenue, Fontwell (application reference WA/22/15/OUT). The recommendation from the Secretary of State and Inspector was that planning permission be granted, subject to conditions.
- 2.9.2 The Secretary of State's response to the Inspector's report makes a number of relevant points, including those described below:
- The Secretary of State has no reason to disagree with the Inspector's analysis that Fontwell is a sustainable location for development;
 - There is no reason to conclude that the racing activities associated with the course would have an adverse effect on prospective residents living conditions;
 - The application would:
 - provide a substantial contribution to housing and affordable housing in the District;
 - provide a valuable contribution to the local economy;
 - boost the sustainability of Fontwell; and
 - give the local community a substantial area of public open space
 - In addition to linkages that would integrate the site with existing residents, the application also delivers:
 - A new bus service to Barnham train station and the local schools;
 - A new cycle path and cycle path upgrades in the local area; and
 - A new footpath around the perimeter of Walberton Playing Field
 - The Inspector and Secretary of State both agreed with the findings of the supporting Transport Assessment and agreed that the application of 400 residential units would not

generate traffic that would result in a severe residual cumulative impact on the highway network.

3 Existing and proposed use

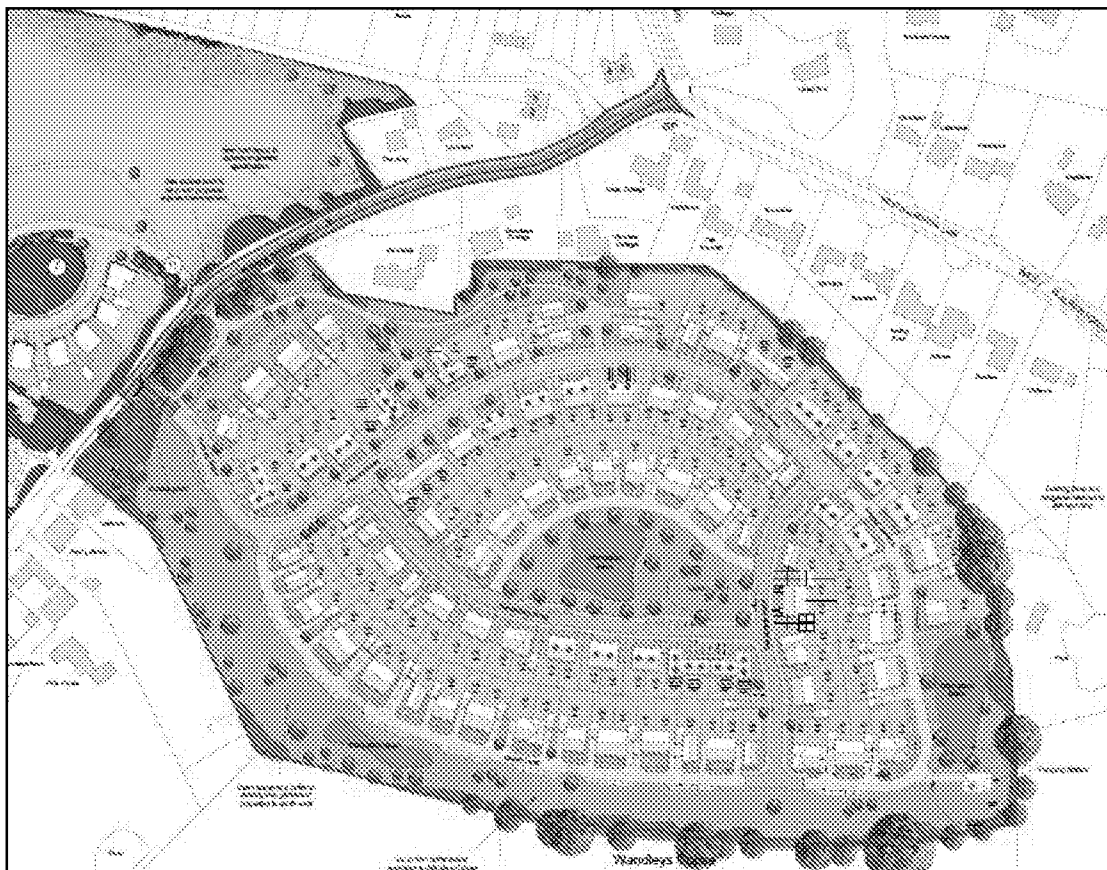
3.1.1 This chapter considers the existing and proposed uses on site.

3.2 Existing use

3.2.1 The proposed development site comprises 6.98 hectares of pasture land, immediately east of Wandleys Lane, Fontwell. There is no built development on site at present and hence no pre-existing traffic generation is assumed.

3.3 Proposed development

3.3.1 The development proposals seek outline planning permission for a development of up to 157 residential dwellings (including 48 (30%) affordable dwellings). Access will be gained from Wandleys Lane as illustrated by the outline masterplan below.

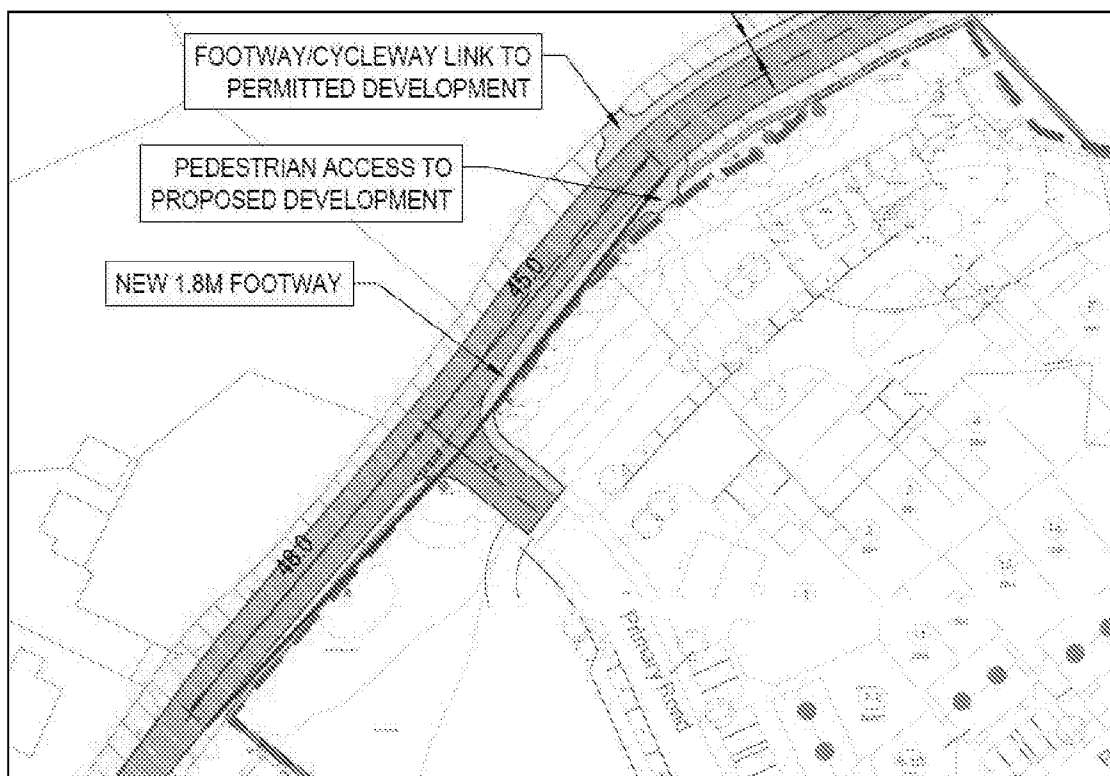


3.3.2 As can be noted from the masterplan above, a vehicular access will be provided on Wandleys Lane with a footway flanking the east side of the access road. A dedicated walking / cycling access will be provided from Wandleys Lane to the east of this. The walking / cycling access will be provided such that it is coincident with the walking / cycling access serving the permitted development on the west side of Wandleys Lane. This will provide direct connectivity between the two sites for walking and cycling journeys.

3.3.3 The walking and cycling connection into the proposed development will also be designed such that it could serve as an emergency access should the access road become blocked. This would incorporate a lockable bollard.

3.4 Access junction

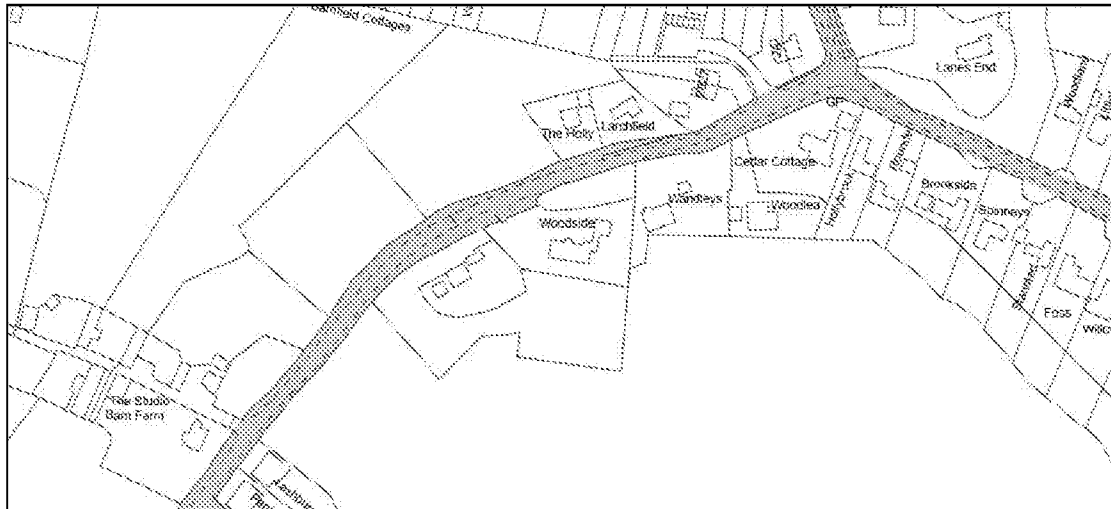
- 3.4.1 Vehicular access is proposed from Wandleys Lane as illustrated below and included at Appendix A.
- 3.4.2 The access junction geometry proposed has been discussed with highway officers and will comprise a 6.0m wide access road with 6.0m kerb radii. A 1.8m wide footway is provided on the east side of the access road carriageway. This footway will continue east on Wandleys Lane to the dedicated walking and cycling access.



- 3.4.3 Visibility splays of 48m to the left and 45m to the right have been shown from a setback of 2.4m in accordance with observed speeds on Wandleys Lane and Manual for Streets standards.
- 3.4.4 The visibility splays can be provided within the highway boundary and land ownership of the applicant. The derivation of the visibility splay distances is discussed in greater detail at section 5.
- 3.4.5 Vehicle tracking has been completed to demonstrate access to the site (and navigation of the site) by a large refuse vehicle. This is included at Appendix B.

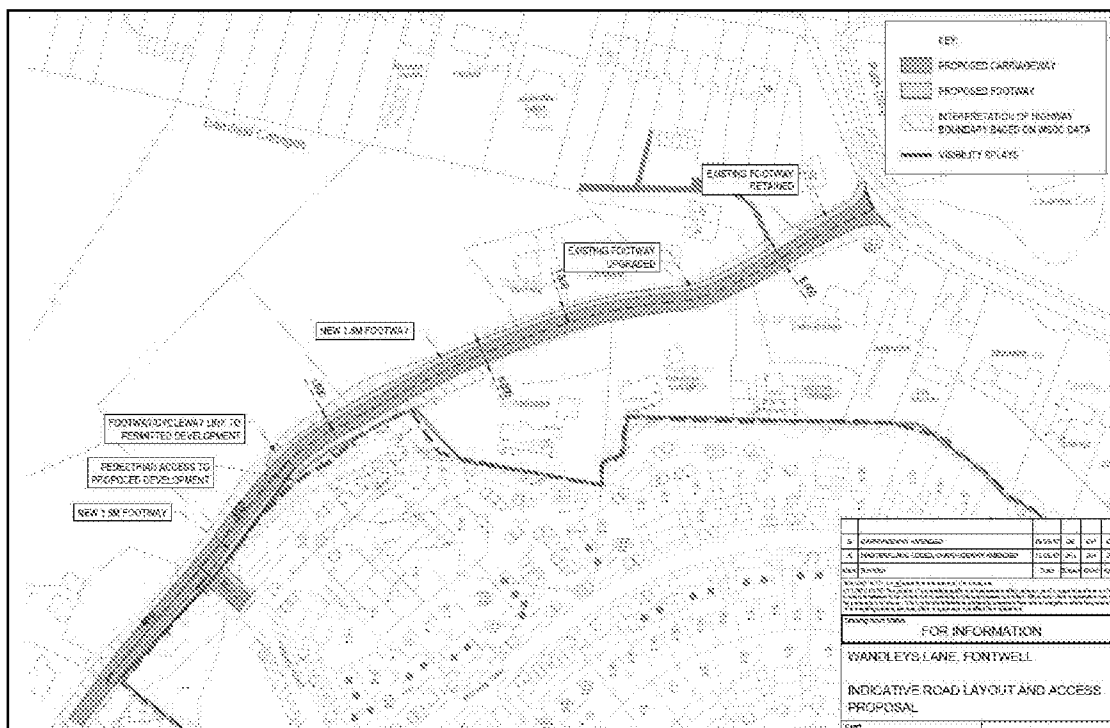
3.5 Wandleys Lane upgrade

- 3.5.1 As part of the development it is proposed to upgrade Wandleys Lane to the north east of the site access junction. The upgrade proposed will particularly address officer comments relating to the need to provide pedestrian access from the site to Fontwell. In deriving an improvement scheme, reference has been made to the highway boundary data provided by WSCC as illustrated below and included as Appendix C.



3.5.2 The proposed upgrade to Wandleys Lane is illustrated below and included at Appendix D. The upgrade proposed incorporates the following features :

- A 6.0m wide carriageway from West Walberton Lane to the site access junction. Whilst the existing width of Wandleys Lane could be retained with an adjacent footway, highway officers at WSCC have expressed a preference to widening the carriageway up to 6.0m.
- An improvement / widening of the existing footway on the north side of Wandleys Lane to 1.8m.
- An extension of the existing footway on the north side of Wandleys Lane to connect with the walking / cycling access to the permitted development west of Wandleys Lane.
- A 1.8m wide footway on the south side of Wandleys Lane between the proposed walking / cycling access to the permitted development west of Wandleys Lane and the main vehicular access.
- Tie in to the existing kerb lines on Wandleys Lane to the west of the site access.
- Lighting could be provided on Wandleys Lane by extending the existing lighting regime on Arundel Road.



- 3.5.3 Pre-application discussions with planning officers have confirmed that they would be supportive of an improvement to Wandleys Lane to provide pedestrian access and also pedestrian connectivity with the permitted site opposite and hence onward access to bus services on the A29 Fontwell Avenue. In addition, planners have reacted positively to the proposal for lighting to be incorporated to the Wandleys Lane improvement scheme.
- 3.5.4 A Stage 1 Safety Audit has been completed for the proposed works and this is included as Appendix E along with a Designers Response.
- 3.5.5 In summary the Stage 1 Road Safety Audit identified 4 potential concerns regarding the proposed scheme. These have been summarised below along with the recommendations:
- Potential pull-out type vehicle collisions, and collisions between pedestrians and vehicles due to vegetation on Wandleys Lane and an insufficient visibility splay from the site access. In addition, poor inter-junction visibility between the site access and the proposed pedestrian crossing may result in collisions between vehicles and pedestrians. The recommendation is to ensure adequate visibility splays are provided from the site access which may include further removal of vegetation.
 - Potential vehicle collisions due to the width of Wandleys Lane and the inclusion of a centre-line which may encourage higher vehicle speeds due to drivers feeling emboldened by the dedicated road space. The recommendation is to omit the centre lining from the road widening scheme.
 - Potential collisions and general hazards to all road users due to the lack of street-lighting on Wandleys Lane and at the proposed access location. The recommendation is to define the number of likely trips in and out of the site and then assess the street-lighting requirement at detailed design.
 - Potential trip hazards for pedestrians at the proposed crossing location due to the full height kerbs currently located on Wandleys Lane. The recommendation is to provide an uncontrolled pedestrian crossing at the crossing point with dropped kerbs and tactile paving on both sides of Wandleys Lane.

3.6 Parking and servicing

- 3.6.1 The Arun District Council Supplementary Planning Guidance for parking standards provides guidance on the number of allocated and unallocated parking spaces for developments based on the residential mix.
- 3.6.2 The table below provides a summary of this information:

Dwelling Type	Specific Requirements	Total Car Parking Provision
Single House & Estate Development (where development does not exceed 15 units) * smaller house sizes *	For each dwelling of 1, 2 or 3 bedrooms and providing that dwelling does not exceed 120 sq.m. gross floor area (excluding integral garage):- 1 GARAGE OR CAR SPACE and 1 SPACE FOR VISITORS to be provided in curtilage where possible and, in any case, be in a convenient position which will encourage use.	2
Single House & Estate Development (where development does not exceed 15 units) * larger house sizes *	For each dwelling with 4 or more bedrooms OR for each dwelling exceeding 120 sq.m. gross floor area:- 2 GARAGES OR CAR SPACES and 1 SPACE FOR VISITORS to be provided in curtilage where possible and, in any case, be in a convenient position which will encourage use.	3
Estate Development with 16 or more units * smaller house sizes *	AN ADDITIONAL 0.2 SPACE/DWELLING REQUIRED FOR VISITORS AND SERVICE VEHICLES as specified above	2.2
* larger house sizes *	as specified above	3.2

3.6.3 The guidance splits the housing provision for the development between residential units that provide 1-3 bedrooms (smaller houses) and those that provide 4+ bedrooms (larger houses). This means that the proposed development mix results in:

- 1.2 spaces per 25x 2 bedroom flat = 30 spaces
- 2.2 spaces per 114x 2 and 3 bedroom flats / houses = 251 spaces
- 3.2 spaces per 18x 4 bedroom houses = 58 spaces
- 0.2 additional spaces per dwelling = 31 spaces

3.6.4 This results in a total of 370 spaces provided across the site.

3.6.5 The outline masterplan provides a total of 391 car parking spaces based upon the allocation outlined below:

- 1 space per 1 bedroom flat = 25 spaces
- 2 spaces per 2, 3 & 4 bedroom dwelling = 264 spaces
- 1 garage per private 3 & 4 bedroom dwellings = 56 spaces
- 46 unallocated visitor spaces throughout the site

3.6.6 The proposed level of parking provision for the site of 391 spaces therefore conforms with the Arun District Council Parking Standards.

3.6.7 A total of 292 cycle spaces would be provided on site in the form of 2 cycle spaces per house and 1 cycle space per flat. Cycle parking will be stored in rear garden stores or garages in accordance with local standards.

3.7 Parking Demand Calculator

3.7.1 The WSCC Parking Demand Calculator has been used to determine the likely total demand for parking within the development. The parking demand calculator for the site can be found at Appendix F.

3.7.2 For the purposes of assessment, it is expected that the development will allocate parking spaces based on the ratio summarised below:

- 1-bedroom units – 1 allocated parking space
- 2 and 3 bedroom units – 2 allocated parking spaces; and
- 4 bedroom units – 3 allocated parking spaces

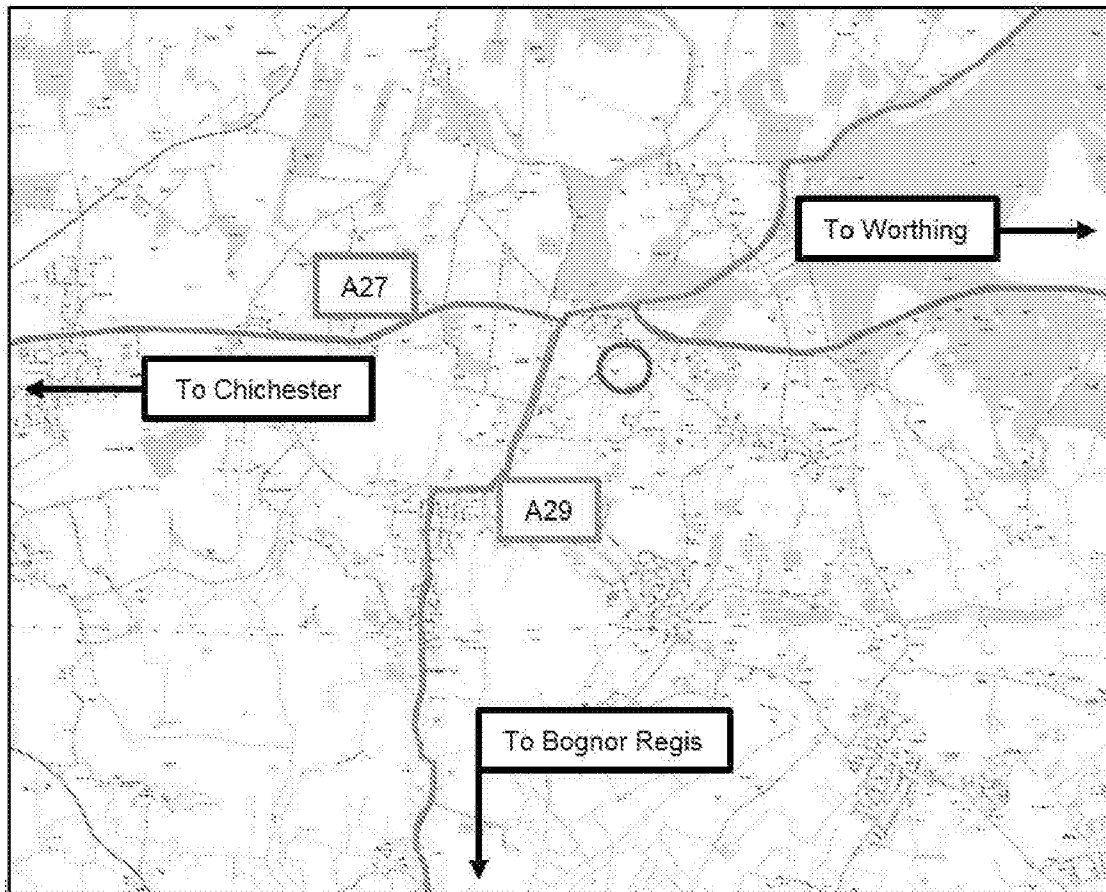
3.7.3 Using the allocation above the parking demand calculator suggests that the development is likely to have a demand of 421 parking spaces. The parking provision on site is broadly in acceptance of the WSCC parking demand calculator.

4 Existing transport network

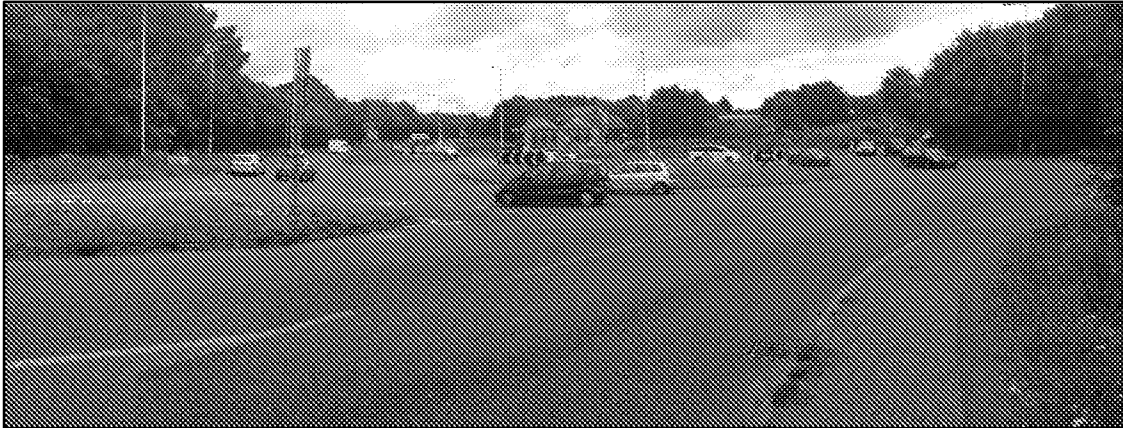
- 4.1.1 The following section provides a summary of the existing transport network that provides access to the site.

4.2 Strategic highway access

- 4.2.1 The illustration below demonstrates the strategic highway links provided by the A27 and A29 with the site location circled in red.



- 4.2.2 The site lies to the south of the A27 corridor which connects the M27 at Portsmouth (to the west) with the A259 at Pevensey (to the east). This corridor passes through Chichester, Worthing and Brighton en route. It is a strategic route and managed by Highways England. Within the vicinity of the site the A27 is a dual carriageway with two lanes in each direction.
- 4.2.3 The A29 corridor passes to the west of the site and connects Bognor Regis to the south with Ockley to the north, passing through Fontwell en route. Within the vicinity of the site it is a single carriageway and intersects with the A27 corridor at the Fontwell Avenue roundabout and the A27 roundabout to the east of this.
- 4.2.4 There are three junctions on the A27 to the north of Fontwell and these have been assessed within this report. The western most junction is a four arm roundabout comprising the A27, A29 and Arundel Road serving Fontwell. The west and north arms are formed by the A27, the south arm by the A29 and the east arm by Arundel Road. The photo below illustrates the roundabout.



View looking east to the A29 roundabout on the A27

- 4.2.5 At this junction the A27 is a dual carriageway with two lanes in each direction as illustrated by the photo below. The national speed limit applies.



View looking west from the A29 roundabout on the A27

- 4.2.6 To the east a further roundabout junction is located at the intersection of the A27 and A29. This is a three arm roundabout with the west and south arms formed by the A27 and the east arm by the A29.
- 4.2.7 Further east, the A27 forms a priority junction with Arundel Road. The Arundel Road arm benefits from a left in left out arrangement. The photograph below illustrates this junction.



Junction of Arundel Road with A27

- 4.2.8 The A27 / A29 Fontwell Avenue roundabout is the subject of a committed improvement scheme being delivered by the permitted development at Land East of Fontwell Avenue. This

scheme comprises the signalisation of the northern and western arms of the roundabout and the corresponding circulatory sections. The proposed development will contribute towards an improvement scheme at this junction as described at section 8.6.

- 4.2.9 The A27 / A29 roundabout to the east will require minor mitigation works as a result of the proposed development. This is described at section 8.7.

4.3 Local highway access

- 4.3.1 Direct vehicular access to the site is gained from Wandleys Lane. This route is a single carriageway subject to a 30mph speed limit. It is generally rural in nature with intermittent residential frontage to the west of the site access, and more regular residential frontage to the east of this. The photographs below illustrate Wandleys Lane.



View looking along Wandleys Lane towards junction with West Walberton Lane

- 4.3.2 The photo below is a view looking west on Wandleys Lane showing the existing footway as it narrows.



View looking west along Wandleys Lane away from West Walberton Lane

- 4.3.3 The photo below shows the continuation of the footway on Wandleys Lane heading west. The footway narrows and becomes less well maintained with no kerbing. This footway continues to

the property called The Holly. Wandleys Lane narrows a little and there are no road markings to denote the centre line.



View looking west along Wandleys Lane

- 4.3.4 Heading further west there is no footway and the carriageway narrows with a varying verge width on either side. The photo below shows Wandleys Lane as it passes in front of the property called Woodside.



View looking west along Wandleys Lane at Woodside

- 4.3.5 The site frontage is currently screened with trees and vegetation. This is illustrated by the photo below. Verges are provided on either side of the road at this location.



View looking west along Wandleys Lane along site frontage

- 4.3.6 At the north end of Wandleys Lane the junction with West Walberton Lane is a three arm priority junction. Wandleys Lane traffic gives way to West Walberton Lane as illustrated by the photo below.



View looking south on West Walberton lane towards junction with Wandleys Lane

- 4.3.7 The proposed development will deliver an upgrade scheme for Wandleys Lane to the east of the site access. This comprises widening of the carriageway and addition of a footway to link the site with West Walberton Lane as described at 3.5.
- 4.3.8 Heading north on West Walberton Lane drivers reach a three arm mini roundabout with Arundel Road. The footway continues from Wandleys Lane along West Walberton Lane and to Arundel Road. The photo below illustrates this connection.



View looking north along West Walberton Lane towards Arundel Road



View looking west along Arundel Road

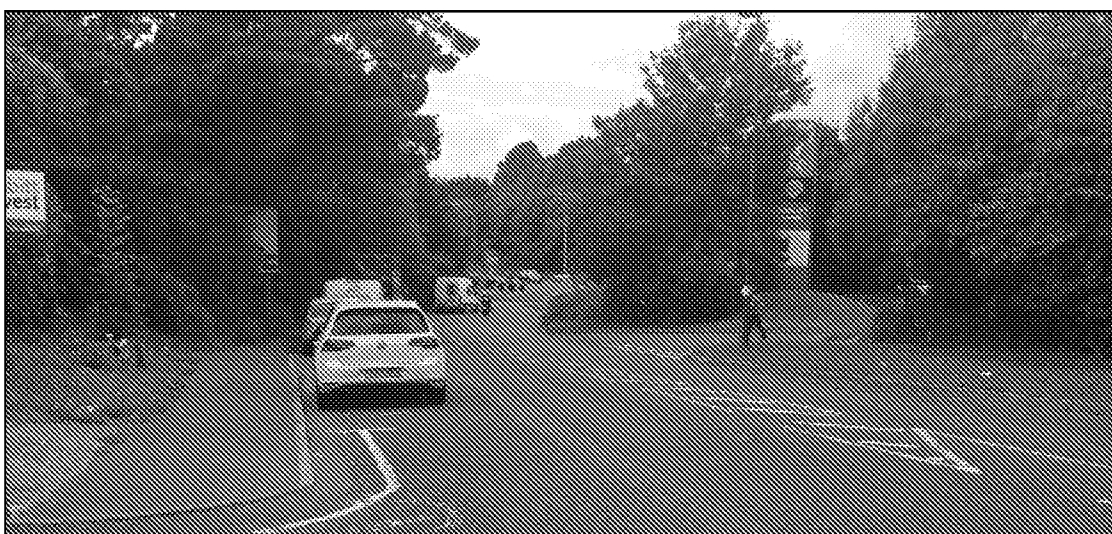
- 4.3.9 Arundel Road passes through the centre of Fontwell. It is a wide single carriageway with verges on both sides and intermittent traffic calming features. Footways are provided on both sides of the road and street lighting is incorporated.
- 4.3.10 Arundel Road is fronted by residential properties and serves individual driveways. There is also access to a group of local shops. A bus stop is provided at either end of Arundel Road.
- 4.3.11 At the west end of Arundel Road access is gained to an existing service area comprising a petrol filling station, hotel and food outlets.
- 4.3.12 The photos below illustrate the features on Arundel Road as described above.



View looking east along Arundel Road towards mini roundabout



View looking west along Arundel Road towards A27 roundabout and illustrating existing bus shelter



View looking west along Arundel Road towards A27 roundabout



View showing existing shops on Arundel Road

- 4.3.13 To the west, the A29 Fontwell Avenue heads south from the A27 roundabout. It is a single carriageway road on a relatively straight alignment as illustrated below. It provides access to the Fontwell Park Racecourse complex.



View looking south on A29 Fontwell Avenue

- 4.3.14 Continuing south on the A29 Fontwell Avenue drivers approach the junction at the south end of Wandleys Lane. This is a three arm priority junction as illustrated by the photo below. The visibility from Wandleys Lane is good as a result of the straight alignment of the A29.



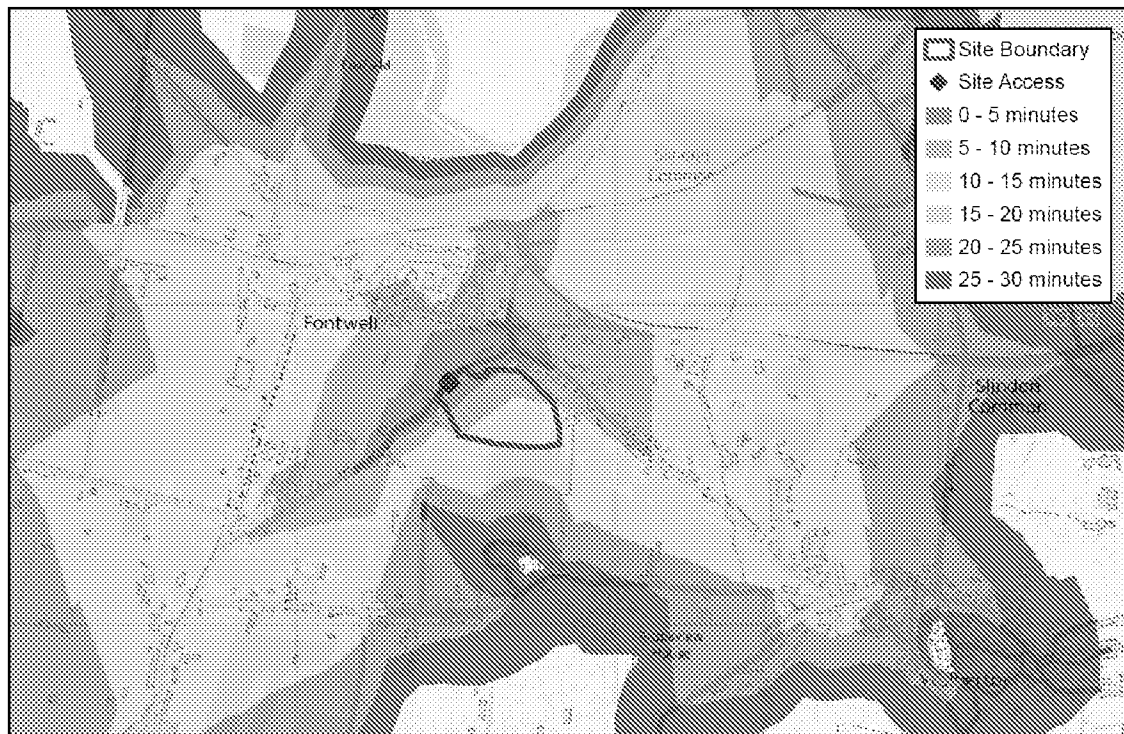
View looking north on A29 Fontwell Avenue across junction with Wandleys Lane

4.4 Walking and cycling

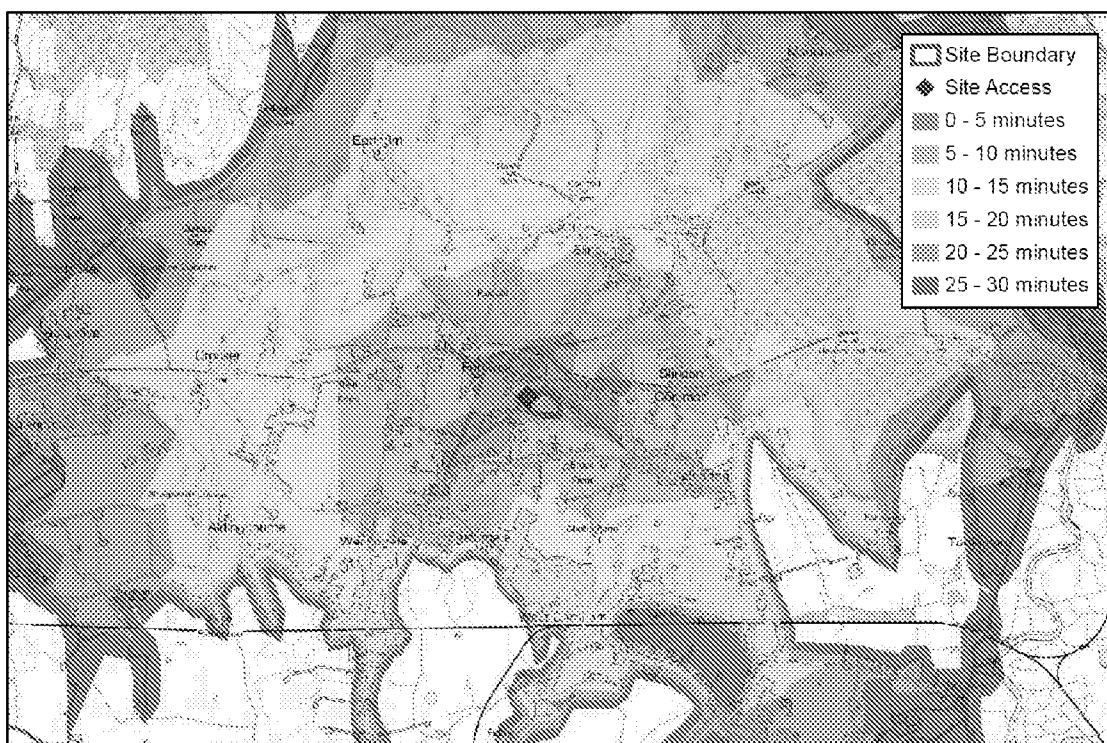
- 4.4.1 The site does not currently benefit from direct pedestrian access. There are a series of footpaths serving the local surrounds, as illustrated on the plan below extracted from the WSCC website. The purple lines indicate footpaths whilst the green lines are bridleways. The approximate site location is indicated by the red circle.



- 4.4.2 All services and facilities provided within the village are within walking distance of the site and hence not reliant upon use of the private car. These include two restaurants (approximately 830m from site), a public house (approximately 860m from site), a garage and shop (approximately 710m from site), and Fontwell Racecourse (approximately 1.05km from site).
- 4.4.3 The provision of a footway on Wandleys Lane and connection through the permitted site opposite will facilitate these connections as well as providing additional opportunities for meeting daily needs locally through walking and cycling.
- 4.4.4 The site is also within walking distance of bus stops along Arundel Road to the north, with the closest of the four bus stops approximately 275m from site and the furthest of the bus stops approximately 650m from site. These bus stops provide services to neighbouring settlements.
- 4.4.5 The permitted development opposite will provide links through the site to the bus stops on the A29 Fontwell Avenue to the west. This route will be around 600m in length, around a 7 to 8 minute walk.
- 4.4.6 The figure below illustrates the walking isochrones from the site. It is noted that the west end of the village can be accessed by an approximately 10 minute walk assuming the existing network. This time would reduce assuming a more direct route through the permitted development west of Wandleys Lane.



- 4.4.7 The proposed development is situated in a location that can promote the use of cycling as a sustainable mode of transport for both short trips and potentially as part of a combined trip for commuters.
- 4.4.8 In addition to the links through the permitted development west of Wandleys Lane, the development is located approximately 15-20 minutes cycle journey from Barnham station.
- 4.4.9 The figure below illustrates the cycling isochrones from the site. It is noted that the west end of the village can be accessed within a 5 minute cycle ride.



- 4.4.10 The proposed development will include the provision of a footway linking the site access to Wandleys Lane and the permitted development of Land East of Fontwell Avenue. The new

footway will follow the radii of the site access junction and continue north for approximately 40m on the eastern side of Wandleys Lane before terminating at a crossing location that will be denoted by dropped kerbs and tactile paving.

- 4.4.11 A footway will continue on the west side of Wandleys Lane at this location which will continue north east to link with the footway at West Walberton Lane. The footway will also provide a link through the permitted Land East of Fontwell Avenue site to encourage the use of walking by residents to meet a proportion of their daily needs by walking.

4.5 Public transport – rail

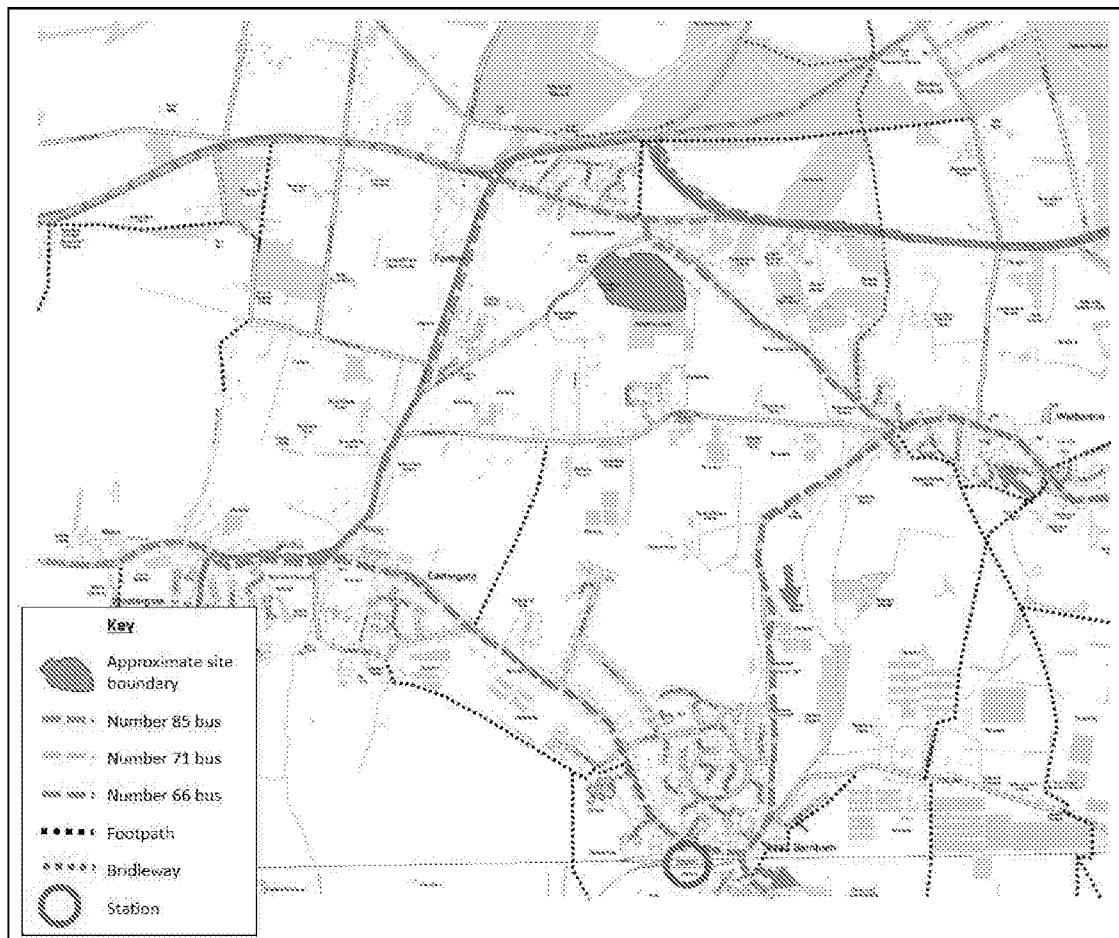
- 4.5.1 The nearest train station to the site is Barnham train station which provides regular, direct links to London, Portsmouth, Brighton and numerous other settlements in the South-East. Barnham train station is located approximately 2.3 km to the south of the site.
- 4.5.2 Barnham train station provides trains to the following stations;
- Portsmouth Harbour (2 in the AM peak, 4 in the PM peak)
 - Bognor Regis (4 in the AM and PM peak)
 - London Victoria (2 in the AM and PM peak)
 - Littlehampton (2 in the AM and PM peak)
 - Southampton Central (1 in the AM peak and 3 in the PM peak)
 - Portsmouth and Southsea (2 in the AM peak and 5 in the PM peak)
 - Brighton (2 in the AM peak and 3 in the PM peak).
- 4.5.3 The facilities at Barnham train station include; Public Wi-Fi, refreshment facilities, toilets, cycle parking and waiting rooms.

4.6 Public transport – bus

- 4.6.1 The nearest bus stop to the site is located on Arundel Road approximately a 275m walk north of the site. This stop provides access to 3 services westbound (85, 85A, 228) and 1 service eastbound (85). These bus routes are summarised in the tabled below.

No.	Route (Bound)	Highest Daily Hourly Frequency (Mon-Fri)	Highest Daily Hourly Frequency (Sat/Sun)
85	Arundel – Fontwell – Chichester (WB)	1	1
85A	Chichester – Barnham – Arundel (WB)	1	1
228	Ormiston Six Villages Academy – Yapton – Arundel – Tangmere (WB)	1	0
85	Chichester – Fontwell – Arundel (EB)	1	1

- 4.6.2 The figure below illustrates the existing local bus routes. It is recognised that the existing bus service has a low frequency and this limits its attractiveness to new and existing residents. The developer proposes to enhance bus provision to / from the site and the details of this are to be discussed and agreed with local bus operators and officers.

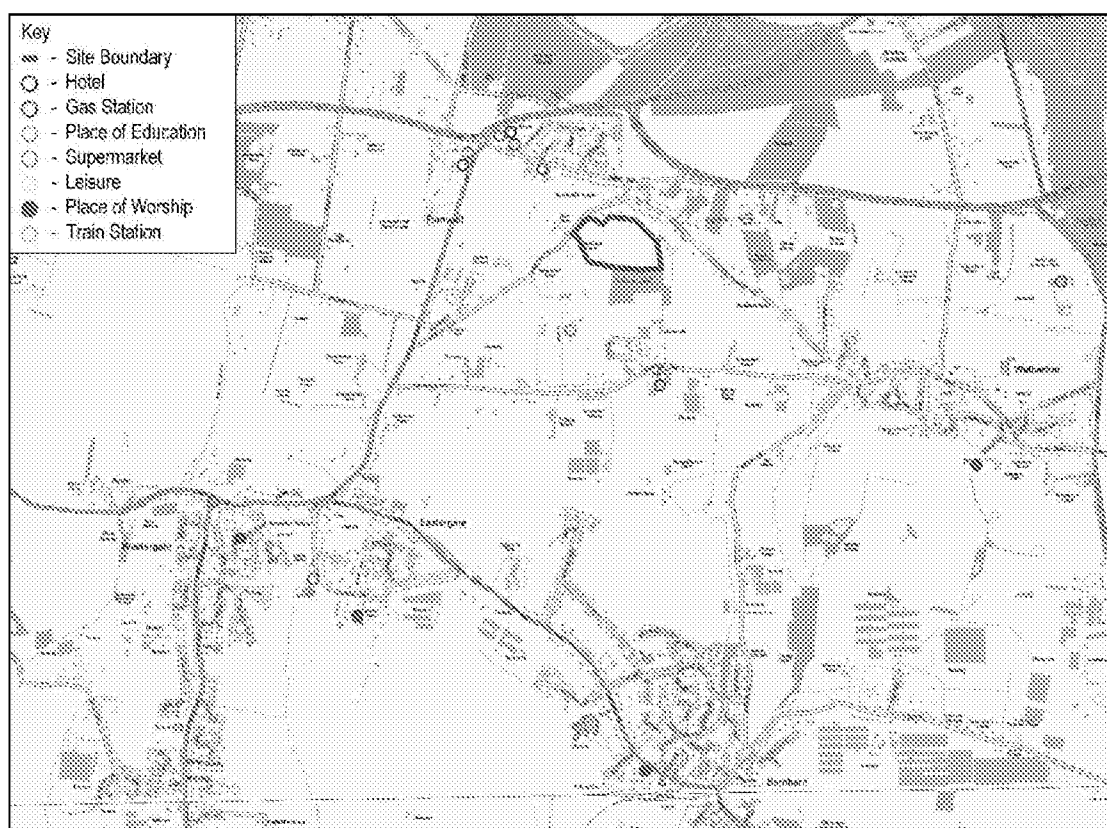


4.6.3 The proposed development will encourage the use of sustainable transport through its support for an enhanced local bus service either as a financial contribution to the local bus operators, or the provision of a separate shuttle service to the station, or coming to an agreement with the developer of the land west of Wandleys Lane.

4.6.4 The bus service enhancement will need to be agreed in a similar manner as that for the permitted site to the west of Wandleys Lane. The s106 for that development requires a bus schedule to be agreed and then completed prior to a trigger number of occupations.

4.7 Local Amenities

4.7.1 The plan below illustrates the existing local amenities. These will be supplemented by the permitted development west of Wandleys Lane that will include employment and retail opportunities.



5 Existing traffic flows

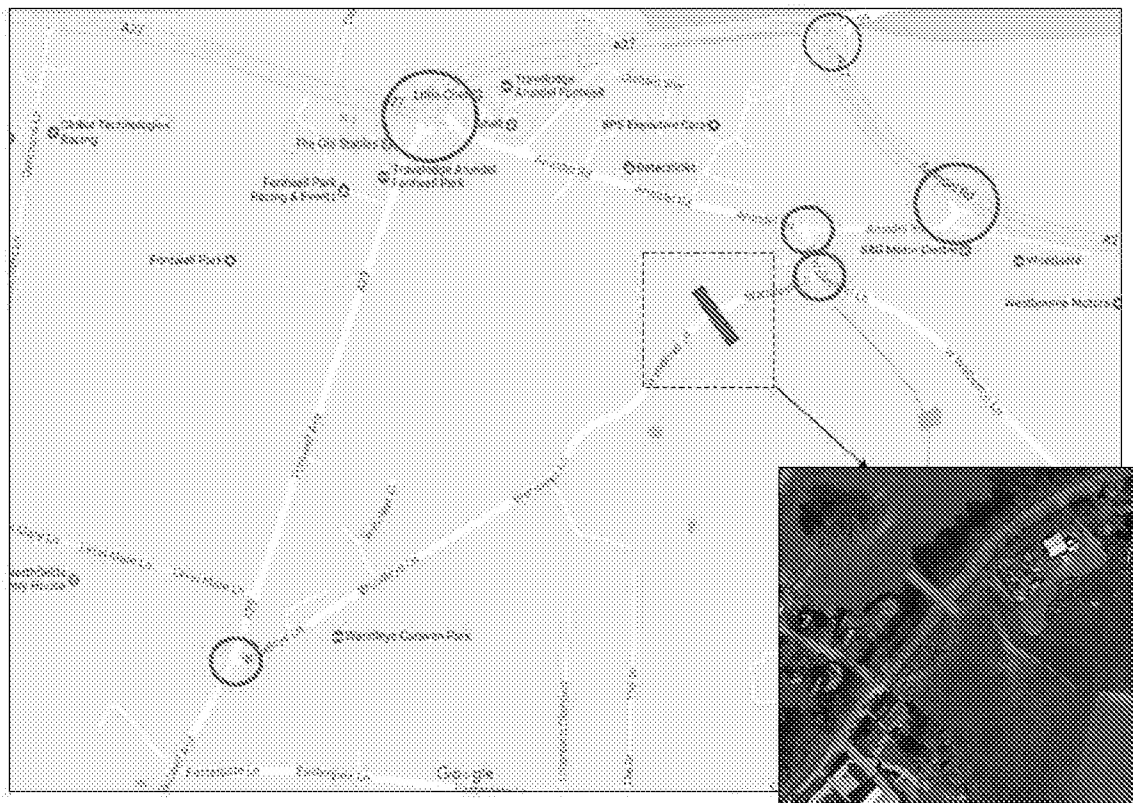
5.1.1 This chapter considers the traffic flows used for the purposes of the base year (2017) modelling assessment.

5.2 Observed traffic flows

5.2.1 To provide an understanding of local traffic conditions at the junctions being assessed, a set of manual classified counts were commissioned. Traffic surveys were completed on Thursday 11th May 2017 and at an additional junction on Tuesday 23rd May 2017 at locations agreed with highway officers and listed below.

- A27 Arundel Road / Arundel Road
- A27 Arundel Road / A29 (north)
- A27 Arundel Road / A29 Fontwell Avenue / Arundel Road
- Wandleys Lane / West Walberton Lane
- West Walberton Lane / Arundel Road
- Wandleys Lane / A29 Fontwell Avenue

5.2.2 The location of these traffic counts are illustrated below.



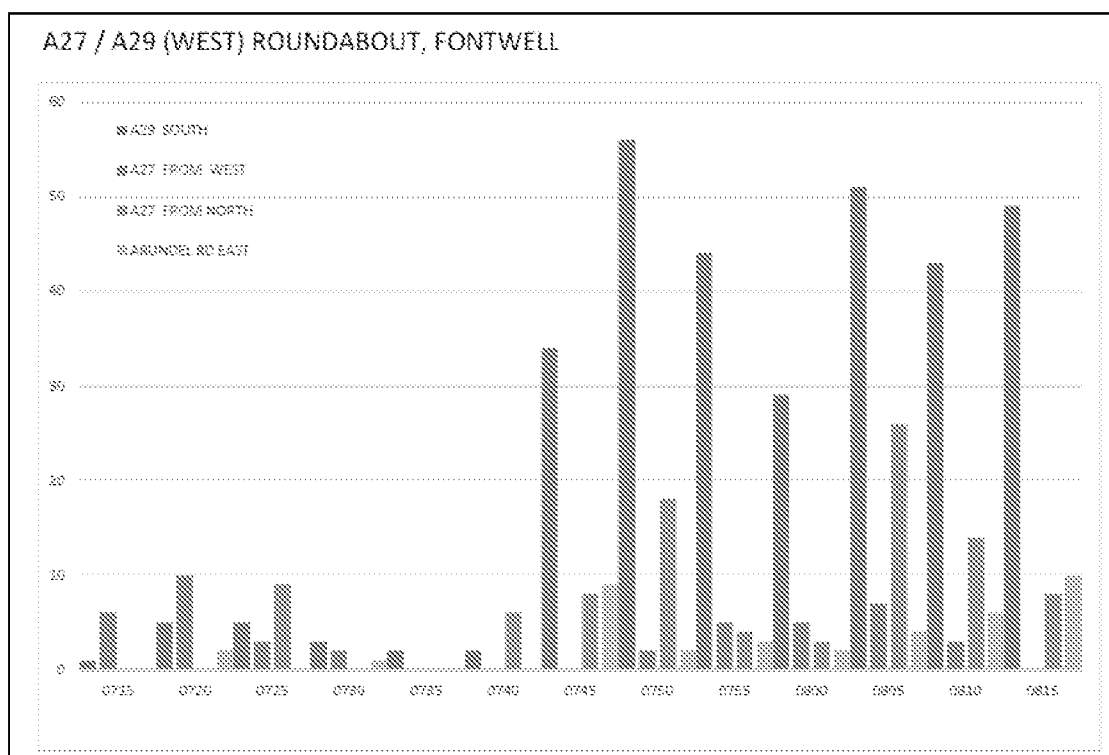
5.2.3 The junction surveys were undertaken during 0700-1000 and 1600-1900. Queue length observations were also made at each junction approach at 5 minute intervals. The observed traffic data is included as Appendix G.

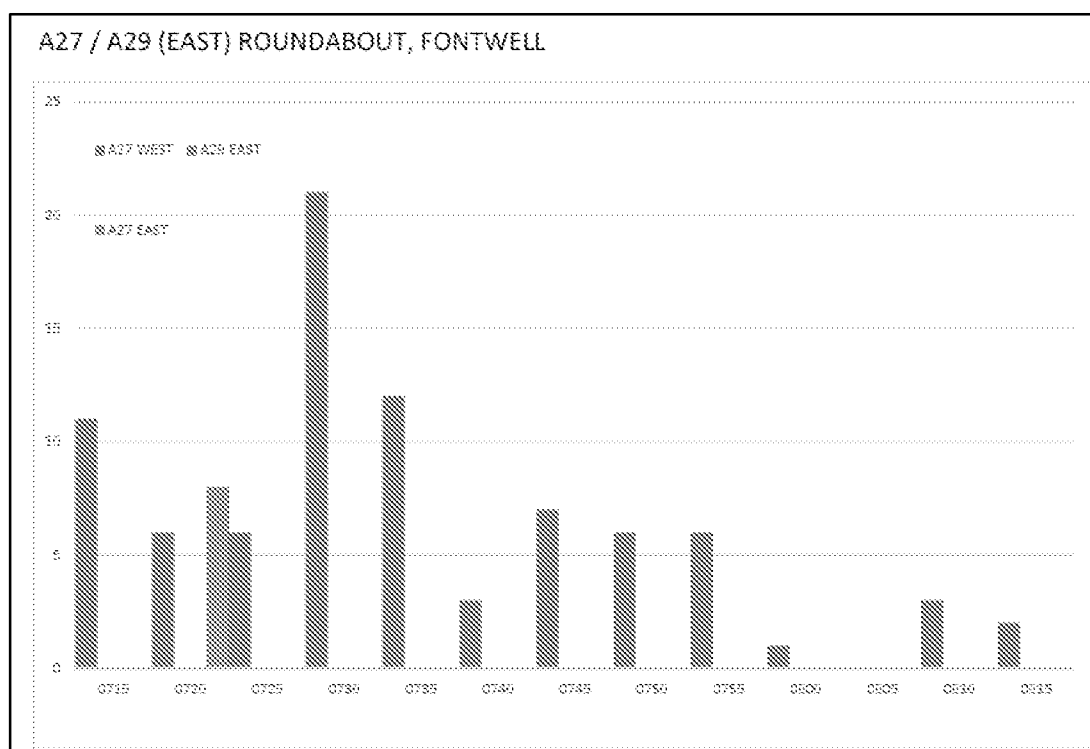
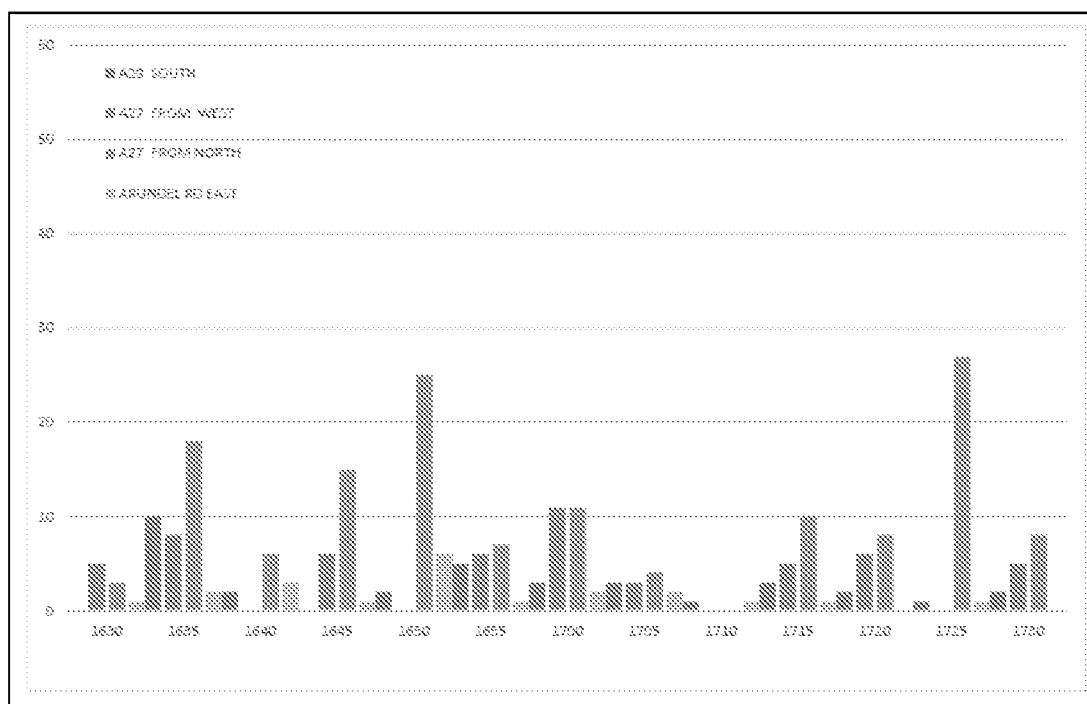
5.2.4 During the survey period it was noted that an accident on the A29 north of the A27 Arundel Road (near to Madehurst) affected the survey data for an approximately 45 minute period during the morning peak period. Adjustments were therefore made to the survey data to allow for this by comparing against flows when the accident had been cleared.

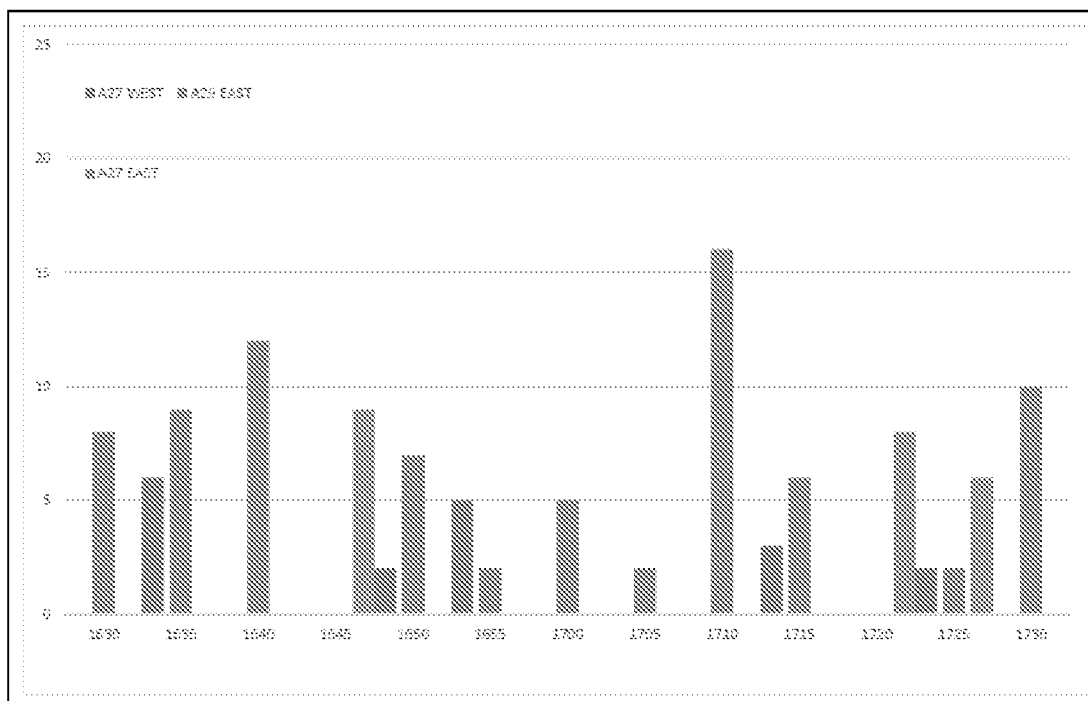
- 5.2.5 Through analysis of the data obtained from the traffic counts the network peak hours can be determined based upon network throughput. The AM peak was identified as 0715-0815 and the PM peak as 1630-1730.
- 5.2.6 These peak hours have been adopted for assessment purposes and Figures 5.1 and 5.2 illustrate the network turning movements observed for these hours.
- 5.2.7 The following characteristics were noted during the surveys.
- In the AM period there are 46 U-turns made at the A27 Arundel Road / A29 roundabout, these are likely due to the left-in / left-out nature of the junction between Arundel Road / A27 Arundel Road;
 - The AM flow along Wandleys Lane appears to predominantly northbound with 45 vehicles travelling in this direction compared to the 24 vehicles travelling southbound in the same period;
 - The A27 is tidal in nature, with 1664 vehicles being the dominant movement travelling westbound towards the (A27 / A29 / Arundel Road) roundabout in the AM period, whilst in the PM period there were 1017 vehicles travelling in this direction and 1256 vehicles travelling eastbound;

5.3 Observed queues

- 5.3.1 Queue observations were made at every 5 minute interval. Queues were only evident at two junctions during the peak periods, those being the A27 Arundel Road / A29 Fontwell Road roundabout and the A27 Arundel Road / A29 roundabout to the east. The observed queues for these junctions are illustrated below.





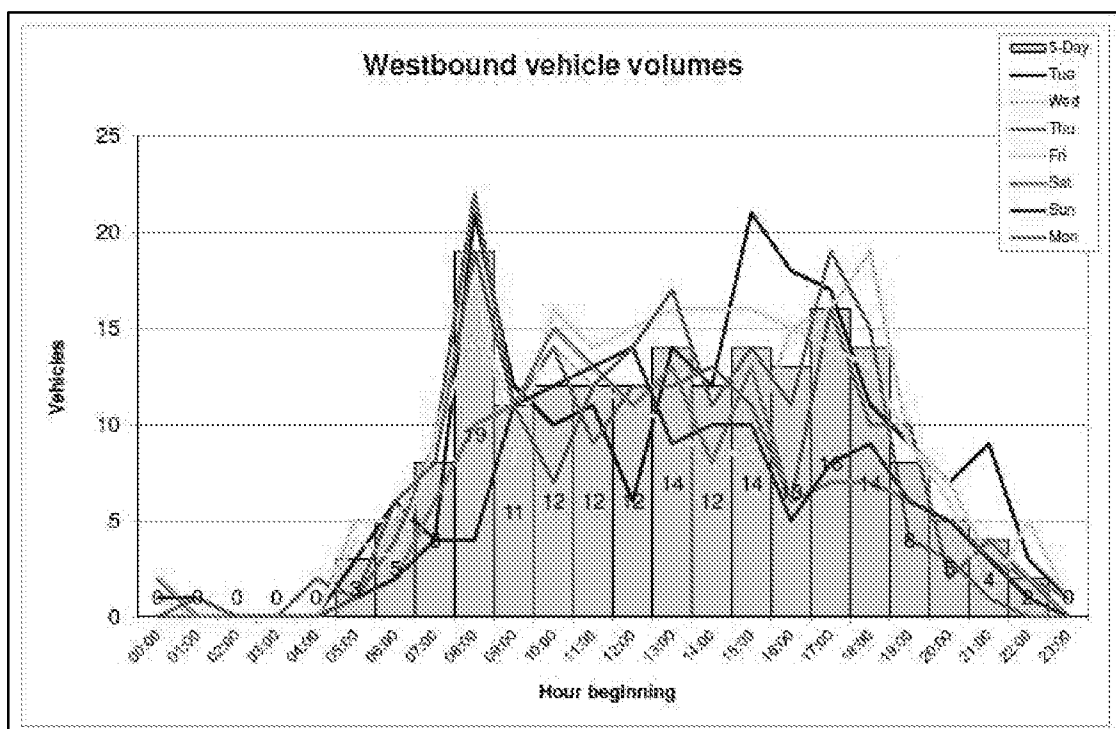
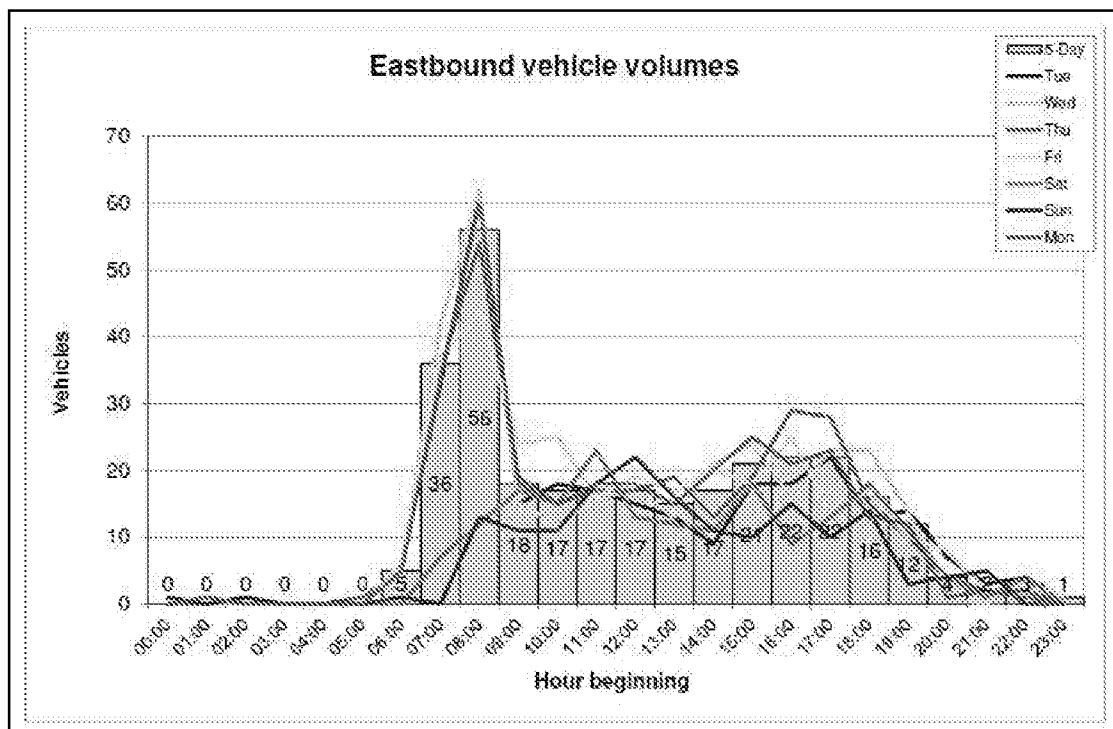


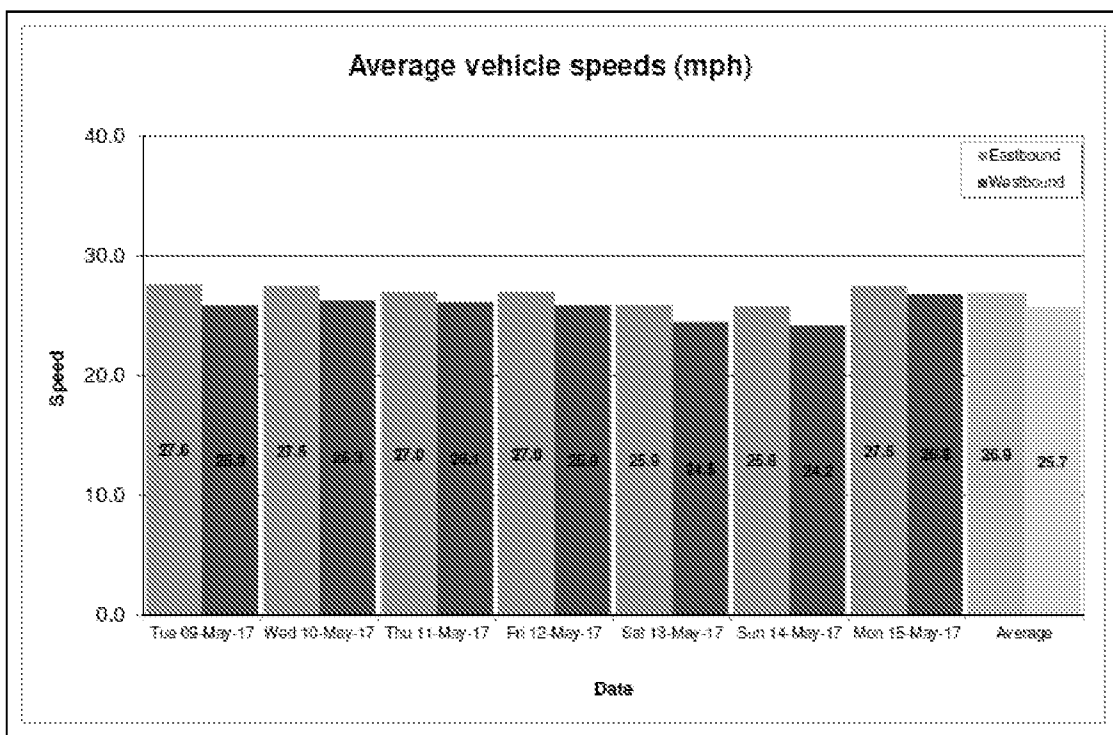
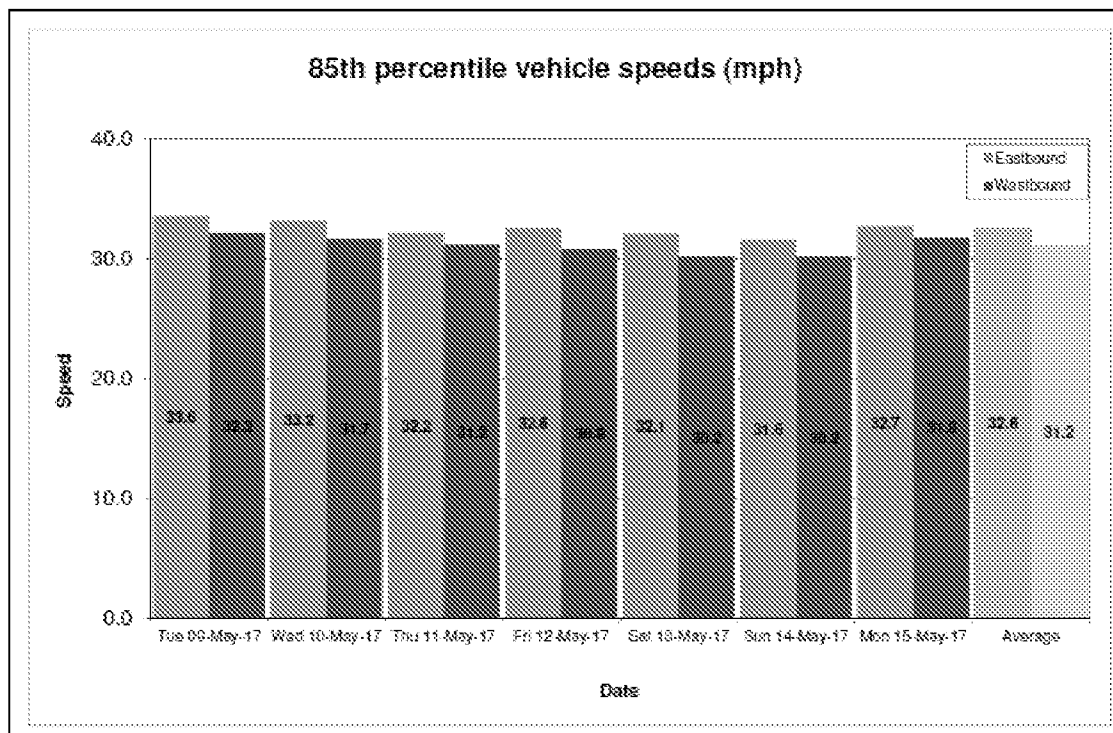
5.3.2 It is noted from the above graph data that:

- The A27 / A29 (West) roundabout has queues in excess of 50 vehicles on the southern arm during the AM peak which suggests that the roundabout is not currently operating within capacity during the morning;
- The queue profile for the A29 / A27 (East) roundabout highlights the tidal nature of the A27 with the majority of queues being experienced on the A27 western arm in the AM period, and on the A27 eastern arm in the PM period.

5.4 ATC data – Wandleys Lane

5.4.1 An ATC speed survey tube was placed in the vicinity of the proposed access on Wandleys Lane for a one week period beginning on Tuesday 9th May 2017 to Monday 15th May 2017. The graphs below summarise the volume and speed of vehicles on Wandleys Lane for this one week period.



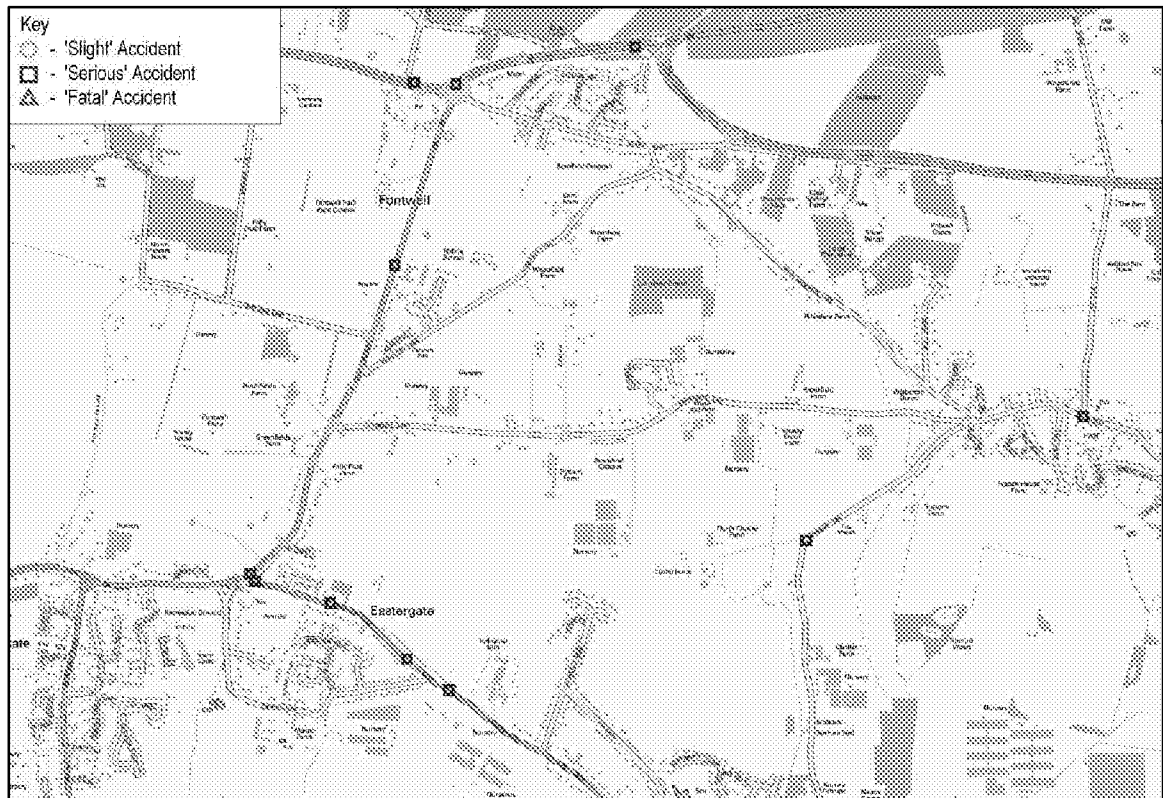


5.4.2 It is noted from the above graph data that:

- The 85th percentile speed recorded on Wandleys Lane was 32.6mph eastbound and 31.2mph westbound;
- Wandleys lane is generally a lightly trafficked road with 75 vehicle movements (two way) using the route in the AM period, and 38 vehicle movements (two way) in the PM period.

5.5 Crash Data

5.5.1 The plan below demonstrates the crash data for the last 5 years (between 1st June 2012 to 31st May 2017):



5.5.2 The data statistics in the plan demonstrate that the local highway network had the following number of crashes recorded in the 5-year period:

- One "slight" crash at the southern end of Wandleys Lane at the junction with the A29;
- No crashes on West Walberton Lane;
- Two "slight" crashes and one "serious" crash through Fontwell;
- Nine "slight" crashes and 2 "serious" crashes at the A27 west roundabout;
- Three "slight" crashes at the A27 east roundabout; and
- One "slight" crash at the left-in / left-out junction

6 Proposed development traffic flows

6.1.1 The following section summarises the predicted traffic generation from the proposed development and the distribution of this to the highway network. This section then details the derivation of the development traffic flows used within the with development assessment modelling.

6.2 Trip generation rates

6.2.1 Vehicular trip generation rates for the proposed development have been obtained from the TRICS database and were the subject of a scoping exercise with highway officers.

6.2.2 During the scoping exercise highway officers suggested filtering the results further to remove smaller sites as this may increase the trip generation rates. However, on applying a filter in this manner it was evident that this would reduce the trip generation rates. Therefore the scoping trip generation rates have been retained and agreed with officers.

6.2.3 In addition, whilst the development is proposed to comprise a proportion of affordable housing units, private housing trip rates have been adopted for the purposes of a robust assessment. Residential sites have been selected within TRICS based on the following criteria:

- Private Housing
- Within England, Scotland or Wales (excluding London)
- Exclude town centre and edge of town centre sites
- Removal of 20,000+ population categories within 1 mile
- Removal of 100,000+ population categories within 5 miles
- Remove sites with a Travel Plan
- Surveyed on a weekday

6.2.4 The TRICS output can be found in Appendix H and is summarised below.

	AM weekday (0800-0900)			PM weekday (1700-1800)		
	In	Out	Two Way	In	Out	Two Way
Private houses	0.108	0.361	0.469	0.320	0.165	0.485

6.3 Trip generation

6.3.1 Based upon the trip rates stated in the table above the following table summarises the traffic generation from 157 residential units.

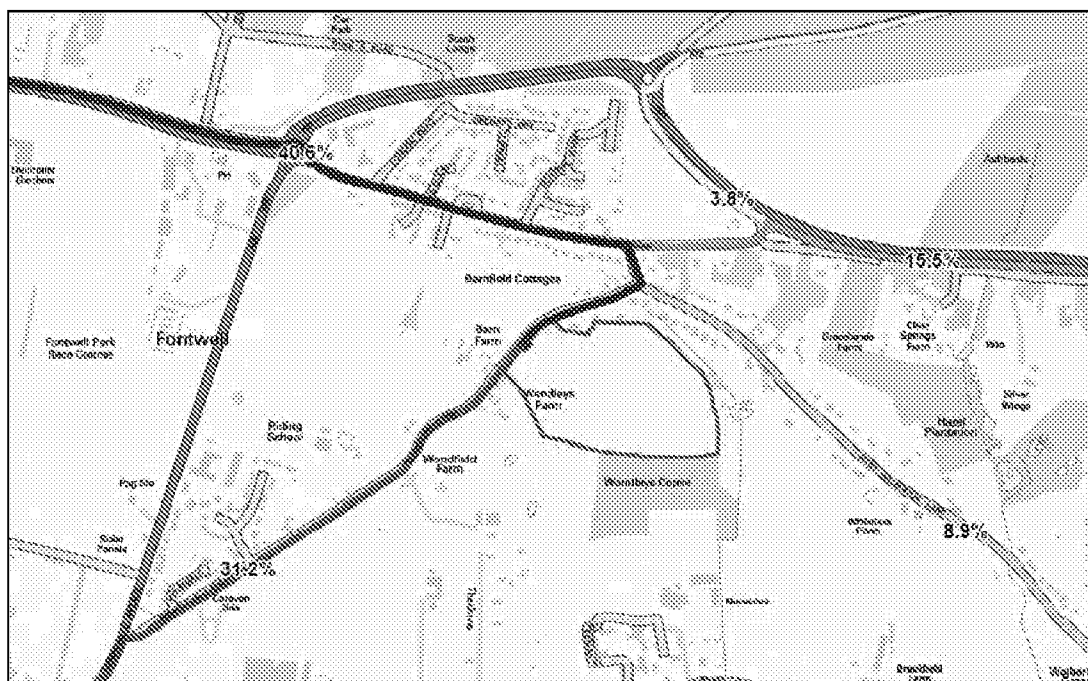
	AM weekday (0800-0900)			PM weekday (1700-1800)		
	In	Out	Two Way	In	Out	Two Way
Private houses	17	57	74	50	26	76

6.3.2 It is noted that the traffic generation is predicted to be 74 vehicles (two way) during the morning peak hour and 76 vehicles (two way) during the evening peak hour. This translates approximately to 1 vehicle movement every 50 seconds. This volume of traffic generation is unlikely to be perceptible on the highway network in practise.

6.4 Traffic distribution

- 6.4.1 The distribution of development traffic has been calculated based upon the "Travel to work" data (area residence to area of work) by MSOA from the 2011 Census. Data has been selected for all trips from area residence MSOA E02006544. This is the MSOA that contains the development site.
- 6.4.2 The co-ordinates of each MSOA was used to create origin and destination points, where the origin is the Fontwell MSOA and the destinations are commuting destinations.
- 6.4.3 Using the Network Analyst extension in ESRI ArcGIS, the routes have been calculated from the origin (Fontwell) to each destination. Network Analyst uses an Integrated Transport Network which is purchased from Here Mapping and contains speed limits and additional traffic and journey time information.
- 6.4.4 On the basis of the above the distribution adopted for assessment purposes is summarised in the table below and illustrated below.

	Split
A27 west	40.6%
A29 north	3.8%
A27 east	15.5%
West Walberton Lane	8.9%
Wandleys Lane (s)	31.2%
TOTAL	100.0%



- 6.4.5 The application of the above distribution to the traffic generation derives the development trips as summarised within the table below.

	AM peak hour		PM peak hour	
	Inbound	Outbound	Inbound	Outbound
A27 west	7	23	20	11
A29 north	1	2	2	1
A27 east	3	9	8	4
West Walberton Lane	2	5	4	2
Wandleys Lane (s)	5	18	16	8
TOTAL	17	57	50	26

- 6.4.6 Figures 6.1 and 6.2 illustrate the distribution of the development traffic on the highway network assessed.

7 Forecast traffic flows

7.1.1 The following section summarises the predicted traffic flow forecasts adopted within the assessment.

7.2 2022 background traffic flows

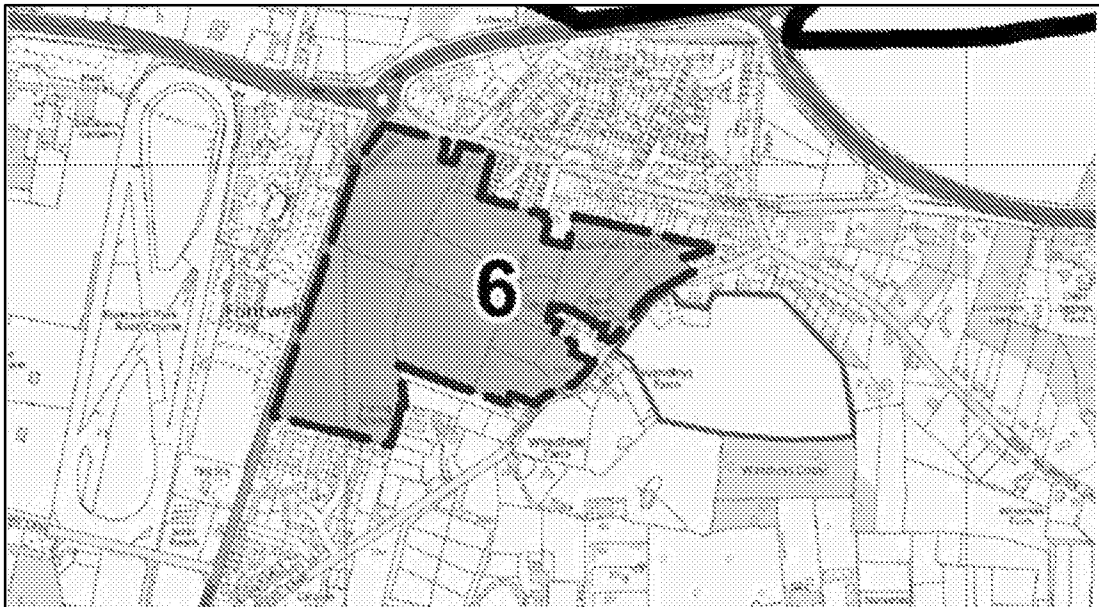
7.2.1 It has been agreed with officers at WSCC that a forecast horizon of 2022, derived through the use of Tempro growth factors, is appropriate for the assessment of the local highway network.

7.2.2 Tempro growth factors are applied to the 2017 survey data to obtain 2022 background traffic flows. Based upon Arun rural principal roads, growth factors of 1.0819 and 1.0817 have been adopted for AM and PM peaks respectively.

7.2.3 On this basis the 2017 observed traffic flows have been factored to 2022 and are illustrated at Figures 7.1 and 7.2.

7.3 Committed development traffic

7.3.1 During the scoping exercise officers identified a single committed development site, that being the existing application WA/22/15/OUT for a proposed allocated site. This planning application relates to 400 residential units and employment floor area on land to the west of Wandleys Lane. On delivery of the mixed use allocated site, the proposed development site would immediately adjoin the built up area as illustrated by the figure below.



7.3.2 The traffic flows for this planning application have been extracted from the supporting Transport Assessment and are illustrated at Figures 7.3 and 7.4.

7.3.3 Officers have subsequently requested that Nyton Lane development (reference AL/61/13/OUT) is included within the baseline assessment. Flows for this site have been extracted from the Transport Assessment and are illustrated at Figures 7.5 and 7.6.

7.4 2022 baseline traffic flows

7.4.1 The 2022 baseline traffic flows have been derived by adding the 2022 background traffic flows and the committed development traffic flows. The 2022 baseline traffic flows are illustrated at Figures 7.7 and 7.8.

7.5 2031 baseline traffic flows

- 7.5.1 During the scoping exercise officers at Highways England requested that a forecast horizon of 2031 be assessed for the A27 junctions. This is the end of the (draft) Local Plan period and as such would include sites currently identified within the emerging Local Plan.
- 7.5.2 Baseline traffic flows for 2031 have been obtained from West Sussex County Council as extracted from their strategic model. The 2031 baseline traffic flows for the A27 junctions are illustrated at Figure 7.9.

7.6 With development traffic flows

- 7.6.1 The 2022 and 2031 with development traffic flows have been derived by adding the baseline traffic flows and the proposed development traffic flows. The with development traffic flows are illustrated at Figures 7.10 to 7.12.

8 Junction assessment

8.1.1 The following section considers the operation of the junctions assessed using the Junctions9 and Linsig software.

8.2 Site access junction

8.2.1 The site access proposed is a three arm priority junction whereby the traffic to and from the site gives way to traffic on Wandleys Lane.

8.2.2 The junction has been modelled using the Junctions9 software and the 2022 with development traffic flows. The geometry for the junction has been measured from OS mapping data as illustrated at Appendix I.

8.2.3 The table below provides a summary of the 2022 with development model results whilst the full output is included as Appendix I.

	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Site access (RT / LT)	0.11	0	7	0.05	0	6
Wandleys Lane (RT)	0.01	0	6	0.03	0	6

8.2.4 On the basis of the modelling approach described above it is demonstrated that the junction is predicted by Junctions9 to operate well within capacity parameters. The Ratio of Flow to Capacity (RFC) is significantly less than the desirable maximum of 0.85 in both peak hours.

8.3 A29 Fontwell Avenue / Wandleys Lane

8.3.1 The A29 Fontwell Avenue / Wandleys Lane junction is a 3 arm priority junction whereby Wandleys Lane gives way to the A29 Fontwell Avenue.

8.3.2 The junction has been modelled using the Junctions9 software for the 2017, 2022 baseline and 2022 with development scenarios. The geometry for the junction has been measured from OS mapping data as illustrated at Appendix J.

8.3.3 The tables below provide a summary of the modelling results whilst the full output is included as Appendix J.

2017 Observed	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Wandleys Lane (RT / LT)	0.06	0	8	0.03	0	8
A29 Fontwell Avenue (RT)	0.13	0	4	0.08	0	5

2022 Baseline	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Wandleys Lane (RT / LT)	0.07	0	9	0.04	0	9
A29 Fontwell Avenue (RT)	0.17	1	4	0.10	0	5

2022 with Development	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Wandleys Lane (RT / LT)	0.10	0	8	0.06	0	9
A29 Fontwell Avenue (RT)	0.19	1	4	0.16	0	5

8.3.4 On the basis of the modelling described above the following points are demonstrated:

- The junction is predicted by Junctions9 to operate well within capacity parameters at 2017 with little or no queues. This reflects survey observations.
- At 2022 baseline the model demonstrates that the junction is capable of operating within capacity in both scenarios.
- At 2022 with development the model shows that the junction operates within capacity in both scenarios.

8.3.5 It is therefore concluded that the effect of the proposed development is not significant at this junction and that no mitigation works are required at this location.

8.4 Wandleys Lane / West Walberton Lane

8.4.1 The Wandleys Lane / West Walberton Lane junction is a 3 arm priority junction whereby Wandleys Lane gives way to West Walberton Lane.

8.4.2 The junction has been modelled using the Junctions9 software for the 2017, 2022 baseline and 2022 with development scenarios. The geometry for the junction has been measured from OS mapping data as illustrated at Appendix K.

8.4.3 The tables below provide a summary of the modelling results whilst the full output is included as Appendix K.

2017 Observed	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Wandleys Lane (RT / LT)	0.07	0	5	0.05	0	6
West Walberton Lane (RT)	0.01	0	6	0.01	0	6

2022 Baseline	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Wandleys Lane (RT / LT)	0.08	0	5	0.06	0	6
West Walberton Lane (RT)	0.01	0	6	0.02	0	6

2022 with Development	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Wandleys Lane (RT / LT)	0.13	0	6	0.08	0	6
West Walberton Lane (RT)	0.03	0	6	0.08	0	6

8.4.4 On the basis of the modelling described above the following points are demonstrated:

- The junction is predicted by Junctions9 to operate well within capacity parameters at 2017 with little or no queues. This reflects survey observations.
- At 2022 baseline the model demonstrates that the junction is capable of operating within capacity in both scenarios.
- At 2022 with development the model shows that the junction operates within capacity in both scenarios.

8.4.5 It is therefore concluded that the effect of the proposed development is not significant at this junction and that no mitigation works are required at this location.

8.5 Arundel Road / West Walberton Lane

8.5.1 The Arundel Road / West Walberton Lane junction is a 3 arm mini roundabout junction. The junction has been modelled using the Junctions9 software for the 2017, 2022 baseline and 2022 with development scenarios. The geometry for the junction has been measured from OS mapping data as illustrated at Appendix L.

8.5.2 The tables below provide a summary of the modelling results whilst the full output is included as Appendix L.

2017 Observed	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Arundel Road (E)	0.02	0	5	0.03	0	4
West Walberton Lane	0.23	0	6	0.10	0	5
Arundel Road (W)	0.07	0	4	0.12	0	4

2022 Baseline	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Arundel Road (E)	0.04	0	4	0.04	0	4
West Walberton Lane	0.25	0	6	0.16	0	5
Arundel Road (W)	0.11	0	4	0.13	0	4

2022 with Development	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Arundel Road (E)	0.05	0	4	0.05	0	4
West Walberton Lane	0.30	0	6	0.19	0	6
Arundel Road (W)	0.12	0	5	0.13	0	4

8.5.3 On the basis of the modelling described above the following points are demonstrated:

- The junction is predicted by Junctions9 to operate well within capacity parameters at 2017 with little or no queues. This reflects survey observations.
- At 2022 baseline the model demonstrates that the junction is capable of operating within capacity in both scenarios.
- At 2022 with development the model shows that the junction operates within capacity in both scenarios.

8.5.4 It is therefore concluded that the effect of the proposed development is not significant at this junction and that no mitigation works are required at this location.

8.6 A27 Arundel Road / Arundel Road / A29 Fontwell Avenue

8.6.1 The A27 Arundel Road / Arundel Road / A29 Fontwell Avenue junction is a 4 arm roundabout on the strategic highway network.

8.6.2 The junction has been identified for a committed upgrade scheme to signal-control the northern and western (A27) arms of the roundabout.

8.6.3 This upgrade scheme will be provided by the permitted development on the west side of Wandleys Lane and is illustrated at Appendix M. West Sussex County Council have provided PBA with their agreed model for this junction and the 2031 Local Plan turning flows. These have been adopted as the 2031 baseline parameters and a model run accordingly. The proposed development traffic has then been added to this to create the 2031 with development scenarios.

8.6.4 The tables below provide a summary of the modelling results whilst the full output is included as Appendix M.

2031 Baseline	AM Peak			PM Peak		
	Max DoS	Queue (veh)	Delay (s)	Max DoS	Queue (veh)	Delay (s)
A27 (N)	80.0%	10	18	120.6%	90	345
Arundel Road (E)	85.5%	5	32	82.4%	4	40
A29 Fontwell Avenue	91.2%	10	48	40.6%	2	9
A27 Arundel Road (W)	58.0%	5	8	110.6%	80	201

2031 with Development	AM Peak			PM Peak		
	Max DoS	Queue (veh)	Delay (s)	Max DoS	Queue (veh)	Delay (s)
A27 (N)	80.1%	10	18	120.8%	90	346
Arundel Road (E)	90.3%	7	41	81.8%	4	38
A29 Fontwell Avenue	91.0%	10	47	40.8%	2	9
A27 Arundel Road (W)	58.0%	5	8	112.4%	90	226

8.6.5 The modelling completed retains the 40s cycle time contained within the West Sussex County Council model. This is primarily to control the queue lengths on the internal arms of the roundabout and prevent these arms from blocking back around the circulatory of the roundabout.

8.6.6 On the basis of the modelling described above the following points are demonstrated:

- At 2031 the baseline demonstrates that the signal-controlled roundabout does not operate within desirable maximum capacity parameters of 90% in either scenario. Nevertheless, the scheme being promoted provides an improvement to a “do nothing” scenario.
- The AM 2031 Baseline model demonstrates that the maximum DoS for the junction is 91.2% which is on the A29 Fontwell Avenue arm.
- The PM 2031 Baseline model demonstrates that the maximum DoS for the junction is 120.6% on the A27 north arm.
- The 2031 With Development scenario demonstrates that, as would be anticipated, the addition of development traffic increases the delays and queues.
- The 2031 AM with development scenario demonstrates a maximum DoS of 91.0% on the A29 Fontwell Avenue arm.
- The 2031 PM with development scenario demonstrates a maximum DoS of 120.8% on the A27 north arm.

8.6.7 It is evident from the analysis above that the addition of the proposed development increases the queues and delays forecast at this junction.

8.6.8 It is therefore concluded that the proposed development will need to contribute towards a scheme that addresses the additional effect that it has on the junction as part of the proposed strategic improvement.

- 8.6.9 For the purposes of this assessment an amendment to the proposed strategic improvement scheme has been considered that addresses the additional effect of the proposed development. This comprises additional flaring of the A27 Arundel Road (N) approach to incorporate 3 lanes at the entry to the roundabout with a width of 4m per lane, as illustrated at Appendix N. Further modelling has been conducted to assess the mitigation scheme and this is summarised below whilst the full output is included as Appendix N.

2031 with Development and Mitigation	AM Peak			PM Peak		
	Max DoS	Queue (veh)	Delay (s)	Max DoS	Queue (veh)	Delay (s)
A27 (N)	73.4%	8	13	83.7%	9	27
Arundel Road (E)	45.3%	2	9	18.9%	1	4
A29 Fontwell Avenue	87.3%	7	34	45.5%	2	7
A27 Arundel Road (W)	58.0%	5	8	107.7%	66	158

- 8.6.10 On the basis of the modelling described above the following points are demonstrated:

- The junction operates within capacity in the AM period, whereas the PM scenario is demonstrated to exceed the capacity of the junction. However, the additional flaring works of adding a third lane and increasing the total width of the entry by 2m in the model shows a betterment compared to the 2031 baseline for both time periods.
- The maximum DoS in the PM scenario of 107.7% is an improvement on the 2031 baseline model, and shows a reduction in queue length and delay.

- 8.6.11 The modelling assessment of the A27 / A29 roundabout demonstrates that the additional measure proposed would show a betterment when compared to the 2031 baseline and hence mitigation of the development traffic effects.

8.7 A27 Arundel Road / Arundel Road / A29 Fontwell Avenue – Sensitivity

- 8.7.1 During the scoping exercise with WSCC highway officers requested two sensitivity tests for the 2031 with Development scenarios. These tests are as follows:

- Alternative Routing – A scenario in which traffic generated by the site and arriving at the A27 Arundel Road / Arundel Road / A29 Fontwell Avenue junction arrives from the A29 Fontwell Avenue arm instead of Arundel Road.
- With Tye Lane Site – A scenario with the Tye Lane site (reference WA/44/17/OUT) permitted in the modelling.

Alternative Routing

- 8.7.2 The alternative routing scenario has been completed using the traffic generated by the site distributed as demonstrated at Figures 8.1 and 8.2. This redistribution has been added to the 2031 baseline traffic to derive the turning flows at Figure 8.3.
- 8.7.3 The table below summarises the results of the 2031 Baseline + Alternative Routing modelling, assuming the mitigation scheme, whilst the results are contained at Appendix N.

2031 with Alternative Routing and Mitigation	AM Peak			PM Peak		
	Max DoS	Queue (veh)	Delay (s)	Max DoS	Queue (veh)	Delay (s)
A27 (N)	73.4%	8	13	91.9%	13	39
Arundel Road (E)	43.1%	2	9	19.3%	1	4
A29 Fontwell Avenue	88.1%	7	33	58.3%	3	10
A27 Arundel Road (W)	58.0%	5	8	106.0%	57	134

8.7.4 On the basis of the modelling described above the following points are demonstrated:

- The junction is expected to operate within capacity in the AM scenario as demonstrated by the maximum DoS value of 88.1%.
- The maximum DoS in the PM scenario of 106.0% suggests that the junction is over capacity in this scenario. However, this DoS value still demonstrates a betterment over the 2031 baseline scenario.

Tye Lane Site

8.7.5 A further sensitivity test was requested by WSCC highways using the original development distribution and including the proposed development traffic for the Tye Lane site. The flows for the Tye Lane site are included as Figures 8.4 and 8.5. These have been added to the 2031 baseline plus development flows to derive the flows at Figure 8.6.

8.7.6 The summarised results, assuming the mitigation scheme) from this modelling exercise are below and included at Appendix N.

2031 with Development and Tye Lane – with Mitigation	AM Peak			PM Peak		
	Max DoS	Queue (veh)	Delay (s)	Max DoS	Queue (veh)	Delay (s)
A27 (N)	89.2%	11	30	83.8%	9	27
Arundel Road (E)	37.2%	2	7	20.3%	1	4
A29 Fontwell Avenue	96.2%	11	65	58.6%	3	10
A27 Arundel Road (W)	87.9%	10	32	107.7%	66	158

8.7.7 On the basis of the modelling described above the following points are demonstrated:

- The junction is not expected to operate within capacity in the AM scenario as demonstrated by the maximum DoS value of 96.2%, but nevertheless provides a betterment when compared to the 2031 baseline scenario.
- The maximum DoS in the PM scenario of 107.7% suggests that the junction is over capacity in this scenario. However, this DoS value still demonstrates a betterment over the 2031 baseline scenario.

8.8 A27 Arundel Road / A29

8.8.1 The A27 Arundel Road / A29 junction is a 3 arm roundabout on the strategic highway network. The junction has been modelled using the Junctions9 software for the 2017, 2031 baseline and 2031 with development scenarios. The geometry for the junction has been measured from OS mapping data as illustrated at Appendix O.

8.8.2 The tables below provide a summary of the modelling results whilst the full output is included as Appendix O.

2017 Observed	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
A29	0.56	1	7	0.56	1	6
A27 Arundel Road (S)	0.80	4	8	0.59	1	4
A27 Arundel Road (W)	0.90	9	13	0.70	2	4

2031 Baseline	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
A29	0.58	1	6	0.67	2	7
A27 Arundel Road (S)	0.91	9	18	0.56	1	4
A27 Arundel Road (W)	0.78	4	8	0.72	3	4

2031 with Development	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
A29	0.59	1	6	0.67	2	8
A27 Arundel Road (S)	0.91	9	19	0.57	1	4
A27 Arundel Road (W)	0.79	4	8	0.72	3	4

8.8.3 On the basis of the modelling described above the following points are demonstrated:

- The junction is predicted by Junctions9 to operate above the desirable maximum RFC value of 0.85 for the 2017 AM scenario as demonstrated by the RFC value of 0.90.
- At 2031 baseline the junction is predicted by Junctions9 to operate above the desirable maximum RFC value of 0.85 for the 2017 AM scenario as demonstrated by the RFC value of 0.91.
- At 2031 with development demonstrates that the development traffic effect on the roundabout is not significant.

- 8.8.4 On the basis of the outputs above it is considered that the proposed development does not compromise the operation of the junction compared to baseline to an extent that could be considered severe and would hence not warrant mitigation.

8.9 A27 Arundel Road / Arundel Road

- 8.9.1 The A27 Arundel Road / Arundel Road junction is a 3 arm priority junction on the strategic highway network. The Arundel Road arm permits left in / left out movements on the westbound A27 Arundel Road carriageway.
- 8.9.2 The junction has been modelled using the Junctions9 software for the 2017, 2031 baseline and 2031 with development scenarios. The geometry for the junction has been measured from OS mapping data as illustrated at Appendix P.
- 8.9.3 The tables below provide a summary of the modelling results whilst the full output is included as Appendix P.

2017 Observed	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Arundel Road	0.17	0	7	0.04	0	6

2031 Baseline	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Arundel Road	0.17	0	8	0.04	0	6

2031 with Development	AM Peak			PM Peak		
	Max RFC	Queue (veh)	Delay (s)	Max RFC	Queue (veh)	Delay (s)
Arundel Road	0.19	0	8	0.05	0	6

- 8.9.4 On the basis of the modelling described above the following points are demonstrated:
- The junction is predicted by Junctions9 to operate within desirable capacity parameters in both AM and PM periods in the 2017 observed scenario.
 - The 2031 baseline scenario demonstrates that both AM and PM periods are expected to operate within capacity.
 - The 2031 baseline plus development scenario demonstrates that both AM and PM periods are expected to operate within capacity.

8.10 Summary

- 8.10.1 On the basis of the assessment completed above it is concluded that the proposed development would need to contribute towards a mitigation scheme on the highway network at the A27 / A29 Fontwell Avenue roundabout.

- 8.10.2 An amendment to the proposed strategic scheme (being provided by the permitted development west of A29 Fontwell Avenue) is proposed to mitigate the development proposed. A monetary contribution would be provided by the developer to implement the amendment proposed.

9 Framework Travel Plan

9.1.1 The following section considers a Framework Travel Plan for the development.

9.2 Background

9.2.1 This Framework Travel Plan (FTP) has been prepared on behalf of Welbeck Land by Peter Brett Associates LLP in relation to the outline planning application for the Land East of Wandleys Lane, Fontwell. The outline development proposals for the site are for 157 residential units comprised of the following development mix:

- 10x 1-bed open market flats;
- 43x 2-bed open market houses;
- 42x 3-bed open market houses;
- 14x 4-bed open market houses;
- 15x 1-bed affordable provision flats;
- 4x 2-bed affordable provision flats;
- 15x 2-bed affordable provision houses;
- 10x 3-bed affordable provision houses; and
- 4x 4-bed affordable provision houses

9.3 Objectives

9.3.1 The purpose of the Framework Travel Plan is to manage the journeys generated by the proposed development and aim to reduce the environmental impact by promoting sustainable travel modes and choices that reduce the reliance of residents on car trips.

9.3.2 The benefits of a successfully implemented Travel Plan can be realised by local residents in the following ways:

- Reduce the number of car trips to, from and within the site by promoting a range of sustainable alternatives and encouraging the use of these.
- Reduce the need to travel.
- Maintain vehicle movements to and from the site within the limits set out in the Transport Assessment and seek to reduce these levels over the 5 years of the Travel Plan.
- Reduce the impact of the development on the local highway network over time by setting challenging, yet realistic targets.
- Monitor and review Framework Travel Plan targets and initiatives on a year by year basis.
- Increase the awareness of residents and employees in respect of travel choices and the individual and community benefits of sustainable travel choices.
- Provide site users with information to make an informed choice of their travel options.
- Influence the travel perceptions and travel behaviour of all site users.
- These objectives have been used to inform the derivation of a suite of actions which will contribute to achieving the overall aim of the Framework Travel Plan.

9.4 Targets

- 9.4.1 The WSCC Development Travel Plan Policy document provides that a Travel Plan should aim to reduce vehicle trips by 10% over a 12h period within the initial five-year lifespan from implementation.
- 9.4.2 Using this guidance the targets set out within this section are challenging, yet realistic targets that seek to reduce the number of vehicular trips and promote the more sustainable modes of travel .
- 9.4.3 Annual targets have been provided covering a five-year period. The targets have been based on the SMART principles, as described below;
- **Specific** - A specific overall reduction in car based trips has been defined which will be achieved through the development of realistic Travel Plan measures.
 - **Measureable** - The number of private vehicle based trips will be monitored against the targets on a regular basis. Further initiatives and measures will be investigated and pursued should the development fail to meet these targets.
 - **Achievable** - Travel Plan measures will be implemented and their effectiveness monitored in order to ensure they are achievable.
 - **Realistic** – Realistic targets have been based upon a reduction of the proportion of car based trips.
 - **Time-bound** - The targets will be reviewed annually in order to clarify whether they are being achieved.
- 9.4.4 The maximum total two-way traffic generation for the development on the site has been set in accordance with the levels identified in the Transport Assessment that accompanies the planning application for the development.

9.5 Target trip generation rates – Year 1

- 9.5.1 Vehicular trip generation rates for the proposed development have been extracted from the Transport Assessment and are summarised below. These represent the Year 1 targets.

	AM weekday (0800-0900)			PM weekday (1700-1800)		
	In	Out	Two Way	In	Out	Two Way
Trip rate per unit	0.108	0.361	0.469	0.320	0.165	0.485

 Table 9.5 - Trip generation rate targets – Year 5

9.6 Target trip generation rates – Year 5

- 9.6.1 It is proposed that the site will seek to reduce traffic generation from the site by 10% over a 5 year period when compared to the Transport Assessment. Vehicular trip generation rate targets for the proposed development at Year 5 will hence be as summarised below.



	AM weekday (0800-0900)			PM weekday (1700-1800)		
	In	Out	Two Way	In	Out	Two Way
Trip rate per unit	0.097	0.325	0.422	0.288	0.149	0.437

Table 9.6 – Trip generation rate targets – Year 5

- 9.6.2 Targets for the intervening years can be calculated through interpolation between year 1 and year 5 targets.

9.7 Travel Plan Coordinator

- 9.7.1 It is recognised that in order to ensure the Framework Travel Plan is effective, it requires the implementation of a Travel Plan Coordinator (TPC) with the necessary expertise to develop, implement and monitor the Framework Travel Plan.
- 9.7.2 It is anticipated that the appointment of a TPC will be undertaken by the eventual developer of the site and / or the end users of the site. The developer will therefore appoint a TPC to manage the Framework Travel Plan and to actively pursue initiatives and ensure the plan is regularly monitored and reviewed during the lifetime of the plan.
- 9.7.3 The TPC post will be appointed prior to the first occupation on site and will be supported by the developer for a period of five years.
- 9.7.4 The role of the TPC could belong to an employee of the developer, or an external consultant, and will form an important element of that person's role. Although it is not envisaged that the position would be a full-time post, nevertheless the TPC must be available to all site users to answer queries and offer support on the basis of a reasonable response time.
- 9.7.5 The TPC should be empowered to a degree in order to be able to enforce decisions, but should also have regular access to senior member of the developer in order to ensure decisions can be made at the appropriate level.
- 9.7.6 The TPC will act as a focal point for liaison on Framework Travel Plan issues between the developer, site users, local transport operators as appropriate and the Local Planning Authority. The TPC will have an over-arching responsibility to:
- To be the initial point of contact for site users / residents, stakeholders and the Local Authority, with regard to travel issues.
 - Liaise with relevant public transport providers in order to seek discounts and keep up to date with offers and changes to services.
 - Facilitating the implementation of Framework Travel Plan initiatives.
 - Be the first point of contact for residents and other site users wishing to find out more about Framework Travel Plan initiatives.
 - Operate or hold responsibility for initiatives. For instance, ensuring that public transport information is kept updated.
 - Organise new initiatives. For example, promote national initiatives such as 'Walk to Work Week'.
 - Motivate others to adopt sustainable travel habits.
 - 'Champion the cause'.
 - Be available to provide advice on sustainable travel planning on a personal level in order to promote the Framework Travel Plan and to aid those who need help or information on sustainable travel.

- Keep abreast of policy and technology that could promote or facilitate the Framework Travel Plan.
- Attend periodic forums the Local Authority might organise to discuss Best Practice and make decisions about the Framework Travel Plan.
- Undertake or oversee the monitoring and review of the Framework Travel Plan including the provision of the Annual Travel Reports and implementation of sanctions, should these be required.

9.7.7 It is not envisaged that the TPC may fulfil directly all of the responsibilities of the role. For example, they may choose to engage specialist consultancy advice as part of the monitoring and review process (to undertake traffic survey data collection for example).

9.7.8 The developer will inform the Local Planning Authority once a TPC has been employed and will provide them with the relevant contact information.

9.8 Action Plan for the FTP

9.8.1 This Framework Travel Plan sets out a package of measures that may be included and implemented by the developer.

Travel Awareness Campaigns

9.8.2 It is important to ensure that relevant travel information is available to those considering sustainable travel to enable them to make an informed decision as to their mode of transport. This could be through raising awareness of national and local travel awareness campaigns such as:

- National Green Travel Days (e.g. Walk to Work Week);
- Local walking and cycling events and initiatives; and
- Health or environmental related initiatives that link to travel.



Potential Action 1: The TPC will regularly advertise national and local Travel Awareness Campaigns to residents.

Green Travel Notice Boards

9.8.3 Sustainable Travel Information should be easily accessible to residents and employees and should be updated regularly in order to present factual information and new ideas.

9.8.4 Green Travel Notice Boards (GTNB) displaying relevant travel information can be a particularly persuasive tool for tipping the balance in favour of more sustainable travel, providing it is kept up to date and is in a prominent location.

9.8.5 Other mediums through which information could be shared are posters / leaflets, on social networking sites, and / or through community newsletters. Information on sustainable travel should also be given to prospective residents as part of the marketing process in order to encourage sustainable travel from the outset. Examples of material that could be provided at the GTNB are as follows:

- Travel awareness days e.g. Walk to Work Week and National Liftshare Week;
- Local walking and cycling routes;
- Information on locations of and distances to key local facilities such as the train station, banks, post office and local shops in a bid to increase walking and cycling for shorter journeys and to reduce the amount of time spent on the local highway network;

- Local bus stops and public transport routes;
- Timetables and costs for local public transport services;
- Promotion of (and links to) a car share website; and
- Information on the health benefits of walking and cycling.

Potential Action 2: The TPC will introduce a GTNB to the site which will contain relevant and up to date information and will be located within a prominent location. It will be provided at the first occupation of the site to ensure it is available immediately.

Travel Information Pack

- 9.8.6 Research has shown that the best time to influence peoples travel behaviour is from the outset, before unsustainable travel patterns have had a chance to develop. Therefore it is important that new residents are well informed of the travel choices available to them.
- 9.8.7 A Travel Information Pack (TIP) is a package of sustainable travel information that informs residents of all the travel options available to them in order for them to make an informed choice over their travel patterns. TIPs aim to encourage people to try out, or at least consider the different modes of transport available to them. A TIP should contain the following information:
- Information about the Travel Plan itself and the reasons for its development;
 - Local walking and cycling routes;
 - Maps highlighting local facilities and the distance and travelling time by mode to each facility;
 - Public transport maps and timetables;
 - Information on and links to a Car Share website;
 - Health benefits related to sustainable travel;
 - Links to home shopping supermarket websites; and
 - Details for Personal Travel Planning sessions.
 - Details of car share websites and how car sharing works.

Potential Action 3: The TPC will develop a TIP which will be distributed to each residential unit upon occupation.

Personalised Travel Planning Sessions

- 9.8.8 Personal Travel Planning sessions (PTP) involve specifically targeting individuals and providing them with personalised travel information which identifies the transport options available to them in order for them to make an informed modal choice.
- 9.8.9 It is widely recognised that PTP can play a significant part in encouraging a modal shift away from the private car, onto more sustainable modes of transport.

"Within the UK, PTP has been reported to reduce car driver trips typically by 11% (amongst the targeted population) and reduce the distance travelled by car by 12%" (DfT, 2008)."

Potential Action 4: The TPC will offer Personal Travel Planning sessions to the occupants of each new residential unit upon occupation.

Walking and Cycling



- 9.8.10 Walking and cycling are the most sustainable and beneficial modes of transport in terms of health and cost, yet the benefits of these modes can often be overlooked when faced with the time benefits of the private car.
- 9.8.11 Data for the National Travel Survey (ref table NTS0101) concluded that of all the trips made in 2012, 20% were less than one mile in length. Based on this statistic and the sites proximity to local services, it is clear that there is room to achieve a reasonable modal shift towards walking and cycling.
- 9.8.12 Maps highlighting the distances (and time taken) to walk or cycle to local facilities can be a good way to make people aware that they are more accessible than perhaps perceived to be. By making people aware of the short distances, there is more chance of people opting to walk or cycle rather than automatically travelling by private car. This information should be made available from the outset before residents start the habit of traveling to these facilities by car.
- 9.8.13 Data for 2012 taken from DfT's National Travel Survey suggested that 14% of car journeys are less than five miles long, a distance which is equal to a 30-minute bike ride, and which is thought to be an acceptable cycling distance.
- 9.8.14 A community Bicycle User Group (BUG) will be established at the site to allow residents to meet with other cyclists, to discuss cycle issues, plan events (such as local bike rides, Dr Bike sessions) and to try to improve facilities for cyclists (where required) through monthly meetings with the Travel Plan Co-ordinator. Overall, the BUG should encourage other people to use this mode.

Potential Action 5: The developer will ensure connectivity for walking and cycling trips to and from and within the site.

Potential Action 6: The TPC will promote the benefits of walking and cycling in terms of health and cost. This may be through leaflet drops or the GTNB.

Potential Action 7: The TPC will provide residents with walking and cycling maps for the local area to encourage the use of these modes as part of the TIP. The maps will highlight the distance (and time taken) to walk and cycle to local services and transport hubs. This will be included in the TIP and posted on the GTNB.

Potential Action 8: The TPC will establish and promote a cycle forum in which group rides can be organised for residents and information and tips can be shared. It may be useful to contact local forums and cycle hire facilities to discuss promotions. In

addition, free apps could be promoted which allow cyclists to upload their times for particular routes using GPS on mobile phones.

Potential Action 9: Provide each residential unit and premises with cycle parking spaces to standard.

Potential Action 10: The TPC will establish, promote and run a community BUG.

Public Transport

9.8.15 It is important that residents are made aware of the Public Transport services available to them and are regularly informed of any changes or updates to each service. The latter is particularly important because if people are not informed of changes it could result in negative attitudes towards public transport services. The use of bus will be encouraged by providing information on:

- service frequency;
- service operating times; and
- details of where to catch the services and interchange if needed.

9.8.16 The TPC should be familiar with the existing services to assist residents in their use. The TPC should regularly check public transport services and inform residents if any changes have been made. Details should be made available at the Travel Information Point and through a travel alert service whereby the TPC emails any significant travel news to residents and employees who sign up to this service.

Potential Action 11: The TPC will provide residents with up to date and relevant public transport information such as bus routes and timetables and bus stop locations.

Potential Action 12: The TPC will liaise with relevant public transport providers in order to seek discounts and keep up to date with offers and changes to services.

Potential Action 13: Promote the use of public transport at the Travel Information Point and in the Travel Information Packs.

Car Share

- 9.8.17 Car sharing can often be an appealing option to those who do not have access to their own vehicle, to those that are willing to share their vehicle with others or where public transport facilities are limited or not available.
- 9.8.18 Car sharing is the process by which two or more people share a car to any destination such as to work, a shopping trip or to an event etc. Many people already informally car share with relatives or friends. However, a formal car share system can maximise the benefits of car sharing and can significantly reduce the number of vehicles on the local highway network.
- 9.8.19 The benefits of car sharing to individuals can be significant and include cost savings and reduced commuter stress levels (by both not having to drive during rush hour traffic and the reduced levels of congestion overall). Car sharing can be particularly beneficial to those who require a car but cannot afford to keep up with the cost that running one entails.
- 9.8.20 In 2012, the National Car share website stated that
- 9.8.21 *"If everyone who drives on their own to work every day were to catch a lift with someone just once a week, the commuting car journeys would reduce by 20%".* It is therefore important to ensure that the option is available to those who may consider this as an alternative to the private car.

Potential Action 14: The TIP will promote a suitable existing car share website at the Travel Information Point and via the Travel Information Packs.

Potential Action 15: – the TIP will provide information on how car sharing works, who can take part, a list of how obstacles (such as the need to drop children off at school or safety concerns) can be overcome and advertise the benefits that can be gained through car sharing.

Car Club

- 9.8.22 Car clubs are becoming increasingly popular around the UK. They provide the benefit and convenience that a private car can provide but without the hassle of having to pay the associated costs or of finding a parking space.
- 9.8.23 Car club schemes allow for cars to be booked for as little as 30 minutes at a time. Cars can be reserved on-line or by phone and vehicles can be collected and returned at any time using a smart card and PIN number. Hire charges are based on the duration of hire and mileage and bills are usually issued on a monthly basis.
- 9.8.24 In February 2011, Streetcar, one of the UK's leading car club companies, stated that "every streetcar replaces on average 26 private vehicles". Therefore, whilst people are still using vehicles to travel, they are more likely to use other modes such as walking or cycling for shorter journeys (for example a trip to a local shop), which wouldn't really warrant using the car club. In addition, reducing the amount of private vehicles within an area would reduce on street parking.



Potential Action 16: – The TPC will seek to introduce and promote a car club at the development.

Private Car

- 9.8.25 It is important to accept that the private car remains a significant mode of travel, especially in a rural area such as Fontwell which has previously been recognised by the Inspectors Report for the adjacent site. At the same time there is a need to recognise the problems associated with this mode and therefore, initiatives should be used to mitigate against the impact the private car will have on the local highway network.
- 9.8.26 If residents are not informed of the personal and social negative impacts that result from private car use, then they are more likely to opt to use the private car instead of trying out other more sustainable modes. It is therefore proposed that each new resident is made aware of these issues so that those who can travel by another mode can make the decision based on informed facts.

Potential Action 17: Provide parking on-site consistent with the local authority parking standards guidance.

Potential Action 18: The TPC will inform residents of the negative impacts of car based travel (in terms of health, cost and the environment) and will promote alongside this the benefits of sustainable travel.

Potential Action 19: The TPC will strive to persuade drivers to make an occasional change to other more sustainable modes by promoting the benefits of walking, cycling and public transport.

Potential Action 20: The TPC will promote green initiative schemes such as “walk to work” days

Reducing the Need to Travel

Flexible and home working

- 9.8.27 Working from home (when appropriate) or working flexible hours can provide significant benefits to all parties involved. A number of these benefits can be seen in the table below.

Employers	Employees
Reduction in commuter-related stress in staff which can lead to sickness	Helpful for parents who have young children and may need to stay at home

	with them
Increased staff productivity levels	Reduction in travel costs
Improves retention of employees	Reduction in time spent travelling
Widens the pool of applicants which can be recruited	Reduced stress associated with commuting
Saves office space	Can reduce local congestion

9.8.28 The local community can also benefit from an increase in home working or flexi working as it could reduce local congestion at the peak times, reduce the total number of cars on the road and reduce localised pollution resulting from a congested road network.

9.8.29 Therefore, encouraging residents who may be able to work from home-to do so, can act as a significant step in reducing the number of vehicles on the highway network, particularly at peak times. It is anticipated that there would also be an opportunity for residents to work from the community facilities on site.

Potential Action 21: The TPC will promote home working by providing residents with information highlighting the benefits of home working to all. This will be facilitated by the IT connection proposed to each house.

Home Shopping

9.8.30 Home shopping is becoming increasingly popular due to the time saved in travelling, the convenience of shopping out of standard working hours, being able to compare prices of multiple retailers and the possible reduction in stress levels compared to shopping in a busy supermarket.

9.8.31 Encouraging the use of home shopping can reduce the number of vehicles on the highway network, particularly during the peak times. There is also the possibility of individuals collecting their packages from a localised collection point for those people that are not in at the time of delivery, rather than travelling to the local post office.

Potential Action 23: The TPC will promote the use of home shopping, highlight local collection points for online retailers

9.9 Monitor and Review

9.9.1 This Framework Travel Plan will be monitored in order to assess the effectiveness of the measures in achieving the targets. It will also be used as an indicator to determine which sustainable modes have increased / decreased, and in doing so which measures should be developed further.

9.9.2 The first monitoring period (or 'baseline') should take place within three months of first occupation of the site, with monitoring taking place annually for the following five years.

9.9.3 The monitoring of trip generation for the site can be achieved through the following means:

- online or paper questionnaires recording such things as 'main mode of travel', 'reason for choice of travel mode', 'place of work', and 'attitudinal information about measures which are likely to encourage a switch to sustainable alternatives', and

- on-site vehicle counts at the sites access points. The costs of undertaking these surveys would be met by the developer.

9.9.4 Once the surveys have been completed, the TPC would then assess the results against the Framework Travel Plan targets and establish whether they have been achieved or not. The Framework Travel Plan would then be updated accordingly.

9.9.5 The TPC will submit an annual monitoring report to the Council in order to inform them of the Framework Travel Plan's progress and whether or not the targets are being met.

9.9.6 The review process is likely to be part of the annual monitoring report, prepared by the TPC evaluating whether the targets have been achieved or not and if not, the reasons why.

9.10 Intervention

9.10.1 In the event that vehicular based targets have not been met, the TPC will, on the first occasion, liaise with Arun District Council, who may in turn liaise with WSCC, in order to understand whether any circumstances out of the developers control, may have affected the results. Arun District Council can then advise either:

- That the targets should remain unchanged;
- The targets should be altered in some way;
- On that occasion the surveys do not constitute a breach of traffic targets.

9.10.2 If the Local Authority confirms that there were no circumstances outside of the developer's control that may have led to excessive traffic being identified by the surveys, the TPC will increase the awareness of the Travel Plan measures, will offer additional personal travel planning sessions to residents and will also consider implementing any new measures that have been identified within the monitoring surveys completed by residents.

9.11 Summary of the Framework Travel Plan

9.11.1 The aim of this Framework Travel Plan is to reduce the number of car trips to, from and within the site by providing a range of sustainable alternatives, encouraging the use of these modes and reducing the need to travel.

9.11.2 A review of the existing and proposed site accessibility has been undertaken and concluded that there is a network of walking / cycling routes and public transport services within the area, but that due to the nature of this location as a rural area the car is likely to remain a popular model of transport.

9.11.3 Challenging mode share targets have been presented which aim to reduce car based travel by 10% over a five-year period following first occupation of the site.

9.11.4 An action plan has been presented which aims to reduce car based travel to and from the site.

10 Summary

- 10.1.1 Welbeck Strategic Land II LLP have appointed Peter Brett Associates LLP (PBA) to provide transport support in relation to an outline planning application for a proposed residential development on land east of Wandleys Lane, Fontwell, West Sussex.
- 10.1.2 The development proposals seek outline planning permission for a proposed development of up to 157 residential dwellings. Of these, 30% (48 dwellings) are proposed as affordable dwellings in compliance with local planning policy.
- 10.1.3 Vehicular access is proposed from Wandleys Lane, which will also be improved to provide a footway on the north side and linking with West Walberton Lane. A link to the permitted development west of Wandleys Lane will also be made available.
- 10.1.4 The proposed development is demonstrated to be in accordance with the local and regional policies.
- 10.1.5 To provide an understanding of local traffic conditions at the junctions being assessed, a set of manual classified counts were commissioned at locations agreed with highway officers.
- 10.1.6 Junction assessments using LINSIG and Junctions9 have been carried to assess the impact of the development on the local highway network for the forecast years of 2022 and 2031.
- 10.1.7 Tempro growth factors have been applied to the 2017 survey data to obtain 2022 background traffic flows.
- 10.1.8 Baseline traffic flows for 2031 have been obtained from West Sussex County Council as extracted from their strategic model.
- 10.1.9 On the basis of the assessments completed it is concluded that the proposed development would be required to contribute towards a mitigation scheme on the highway network at the A27 / A29 Fontwell Avenue roundabout. It is proposed that a monetary contribution is made towards amending the strategic improvement already being promoted at this junction and to be delivered by the permitted development west of Wandleys Lane.
- 10.1.10 A Framework Travel Plan has been produced with the aim of reducing the number of car trips to, from and within the site by promoting a range of sustainable alternative modes of travel, encouraging the use of these modes and reducing the need to travel.

Figures

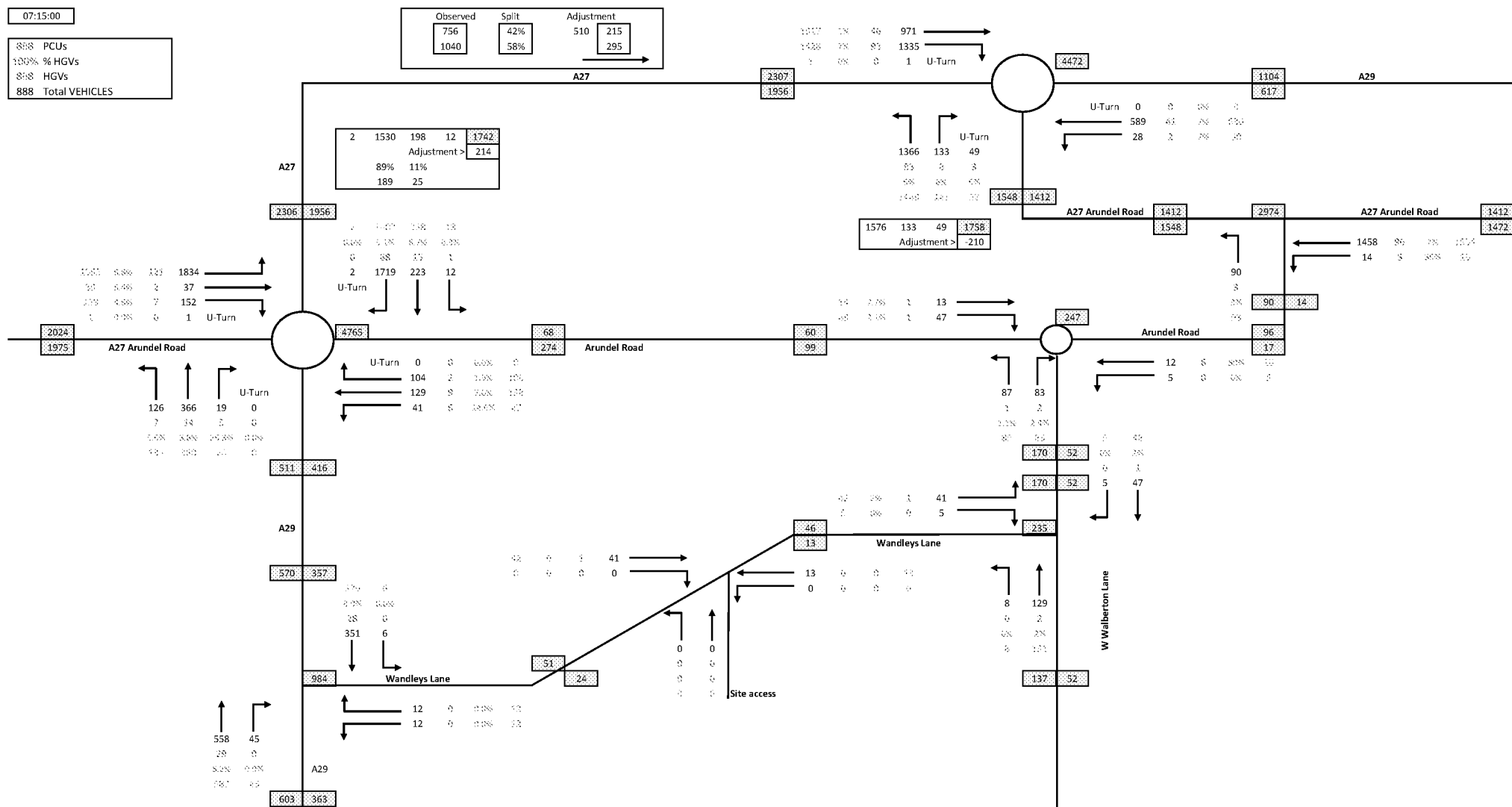


Figure 5.1

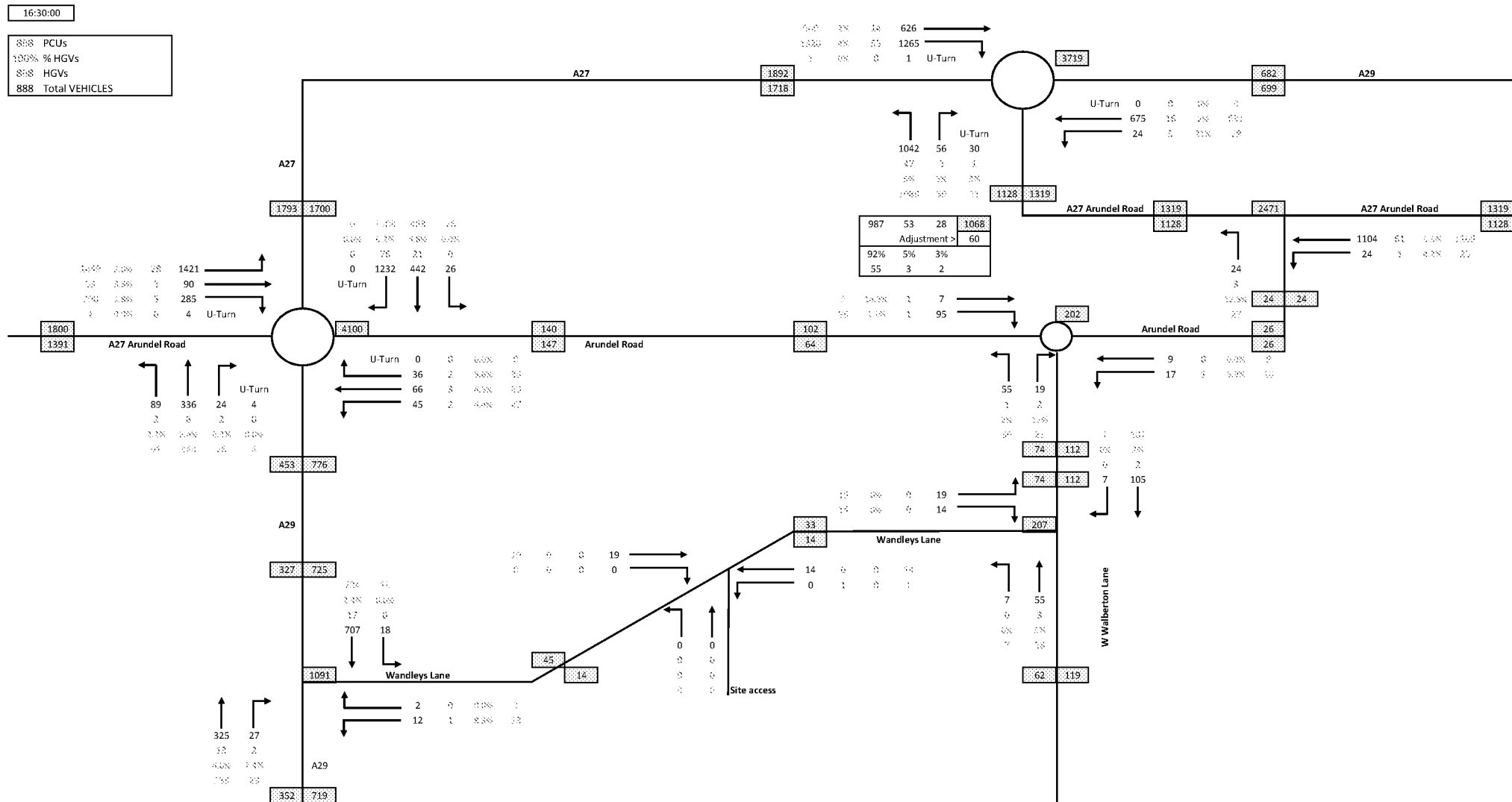
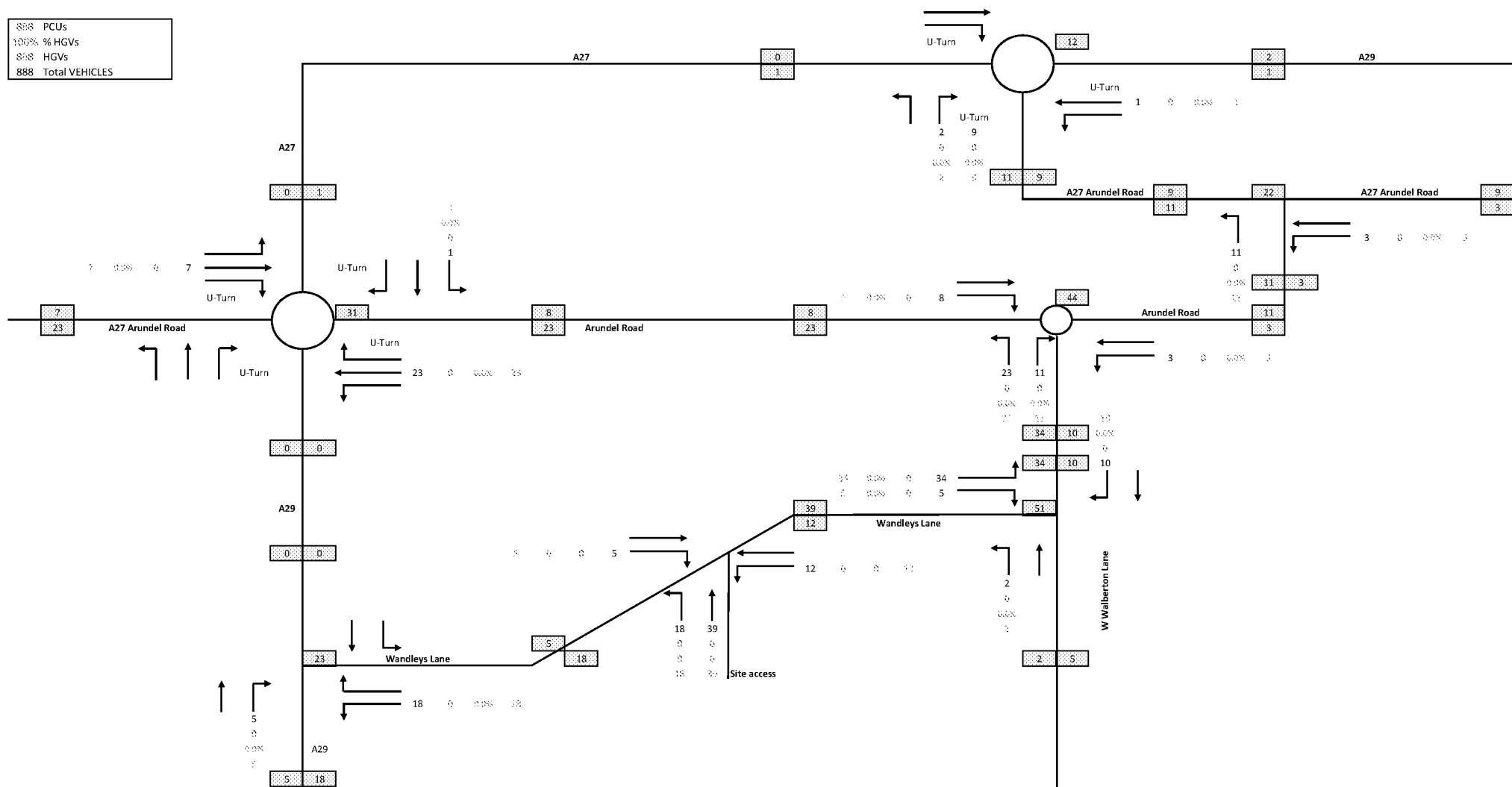
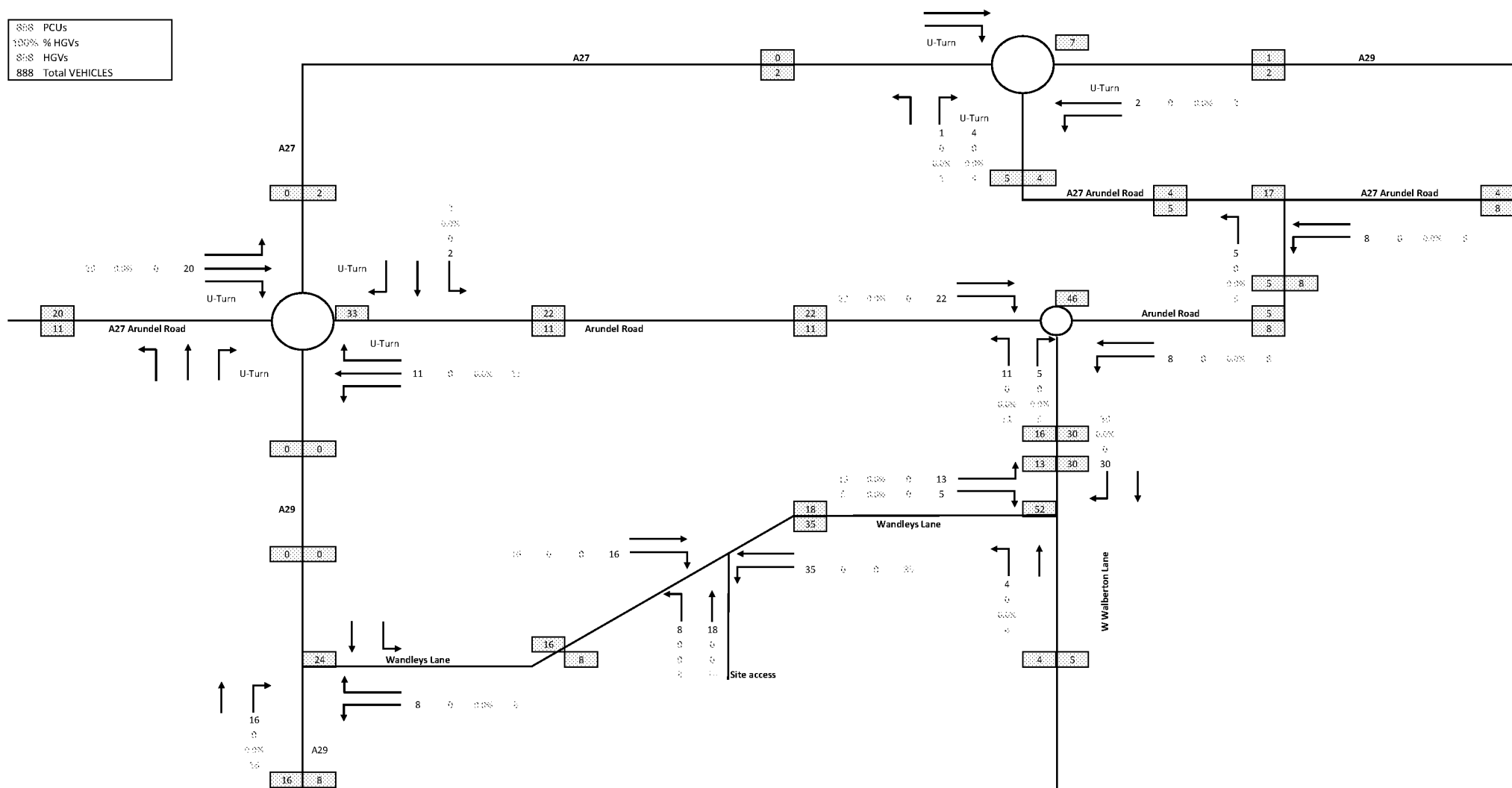


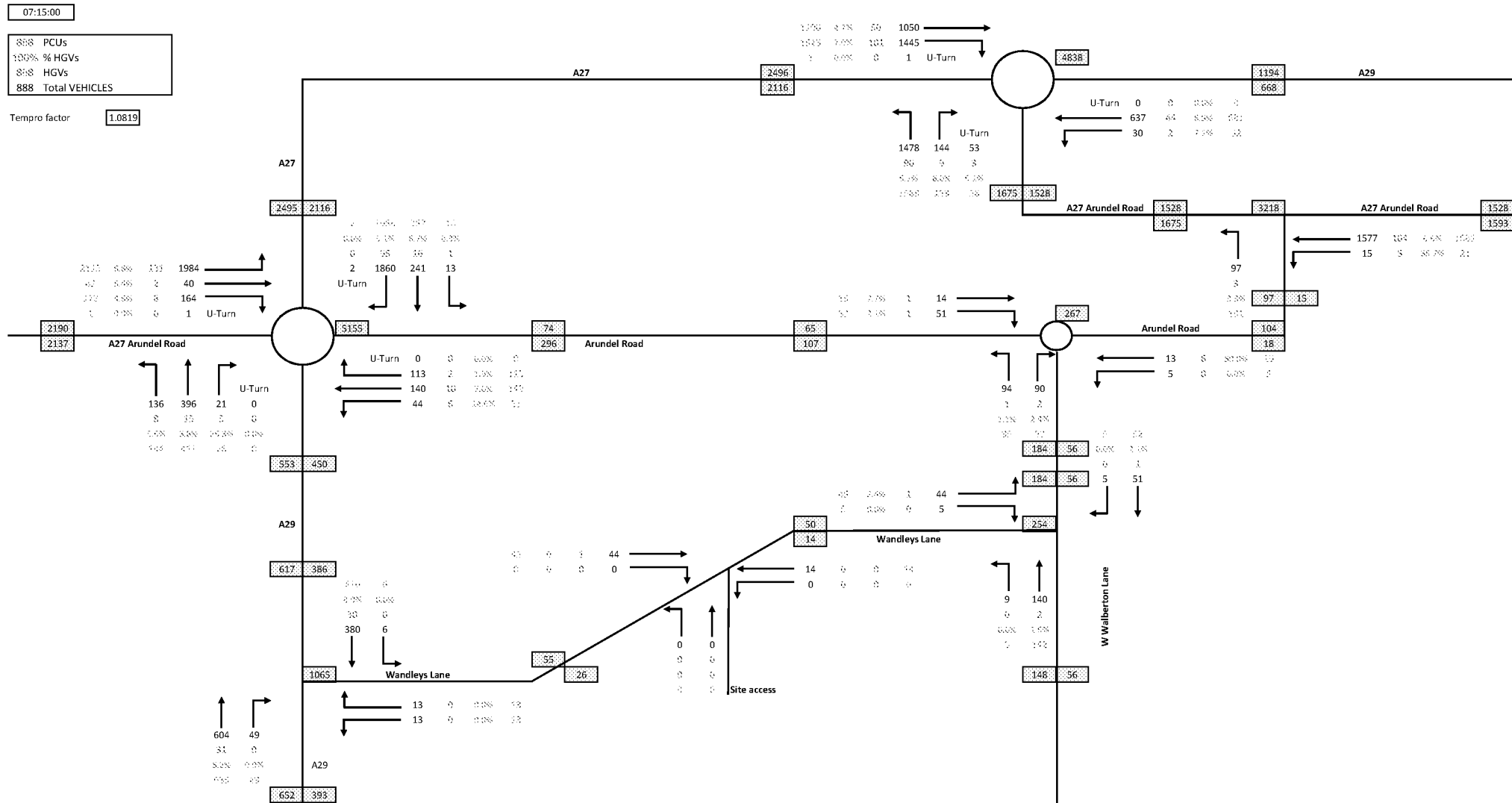
Figure 5.2

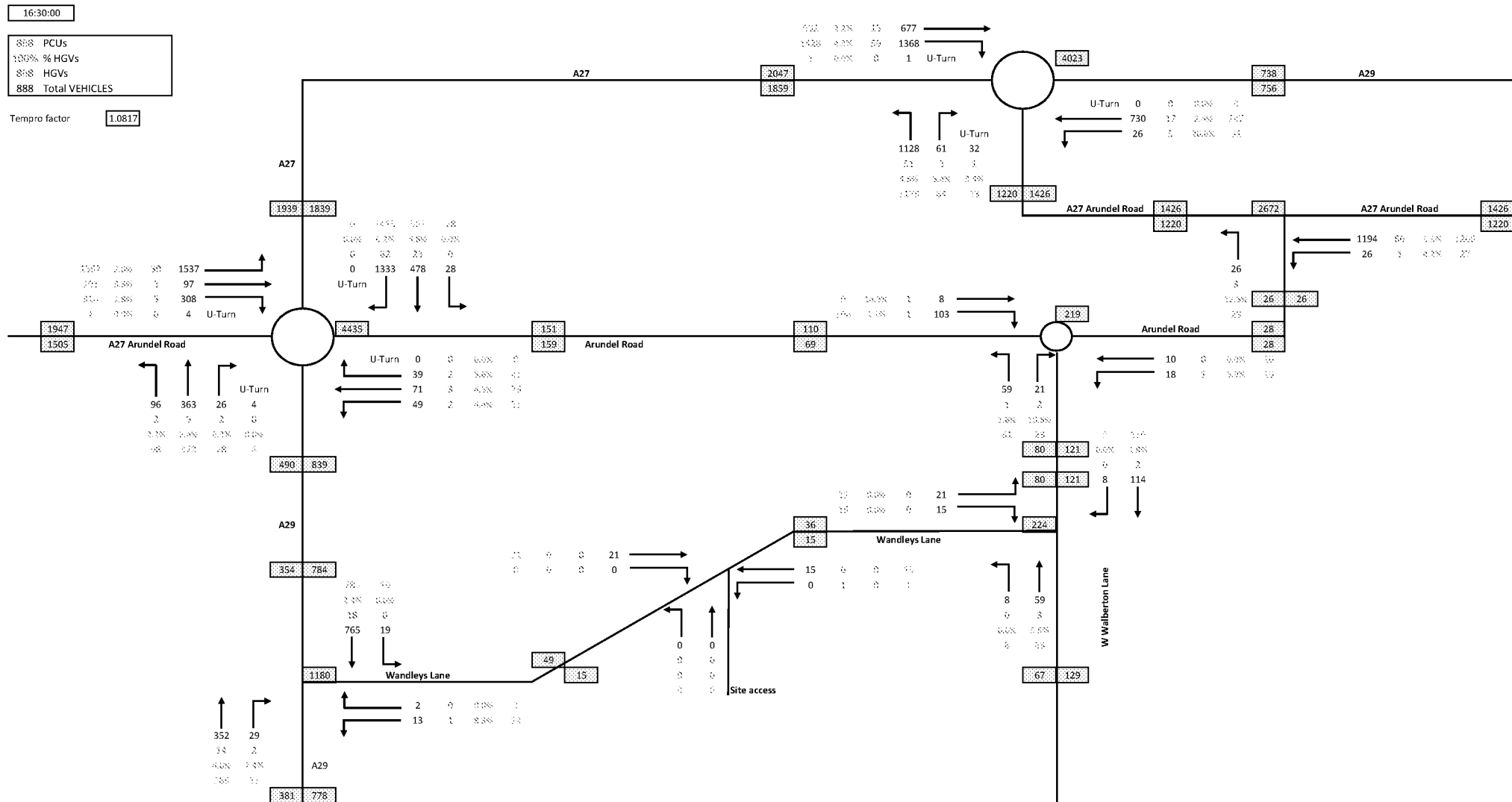
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 100% % HGVs
 888 HGVs
 888 Total VEHICLES



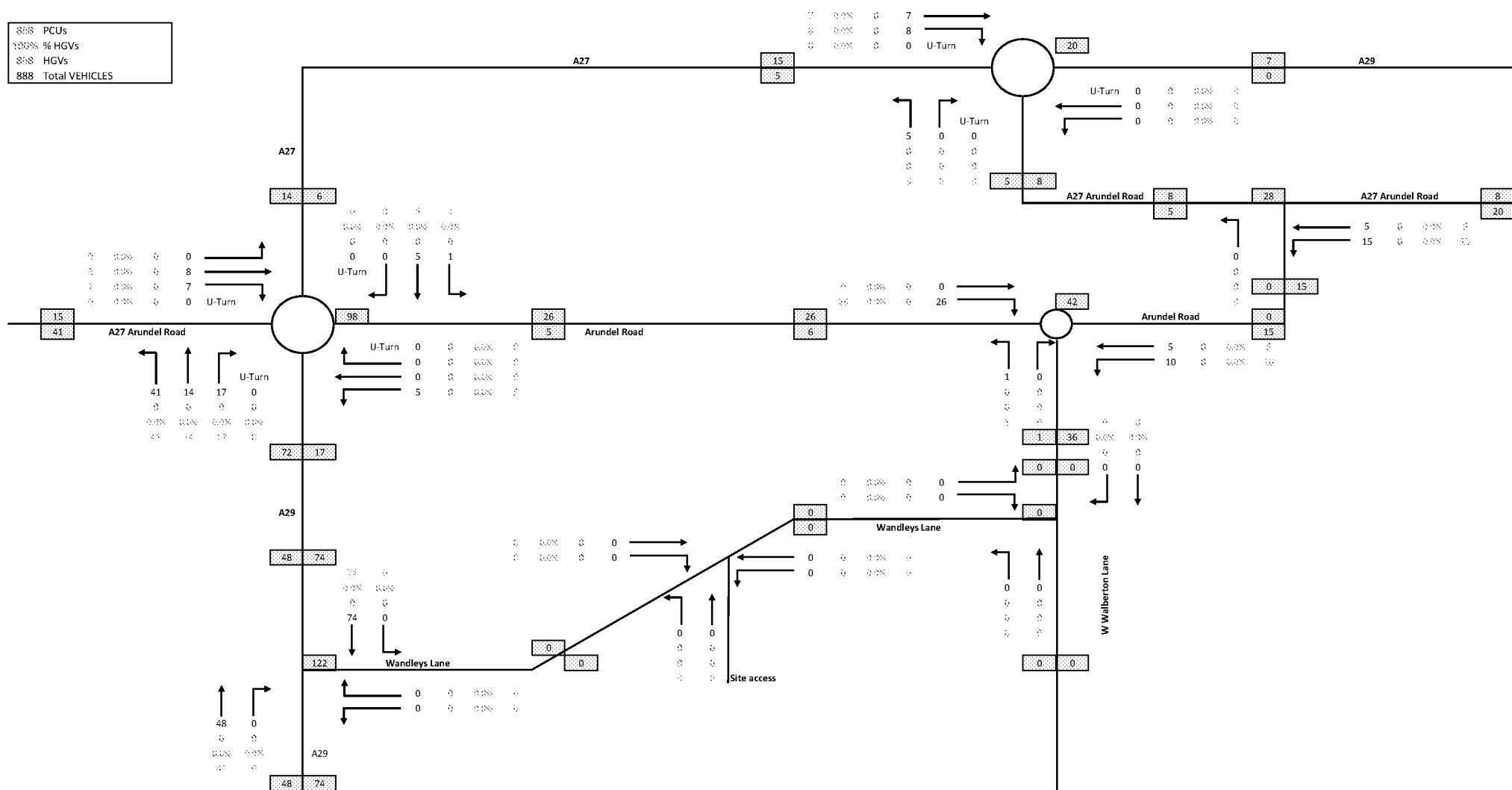
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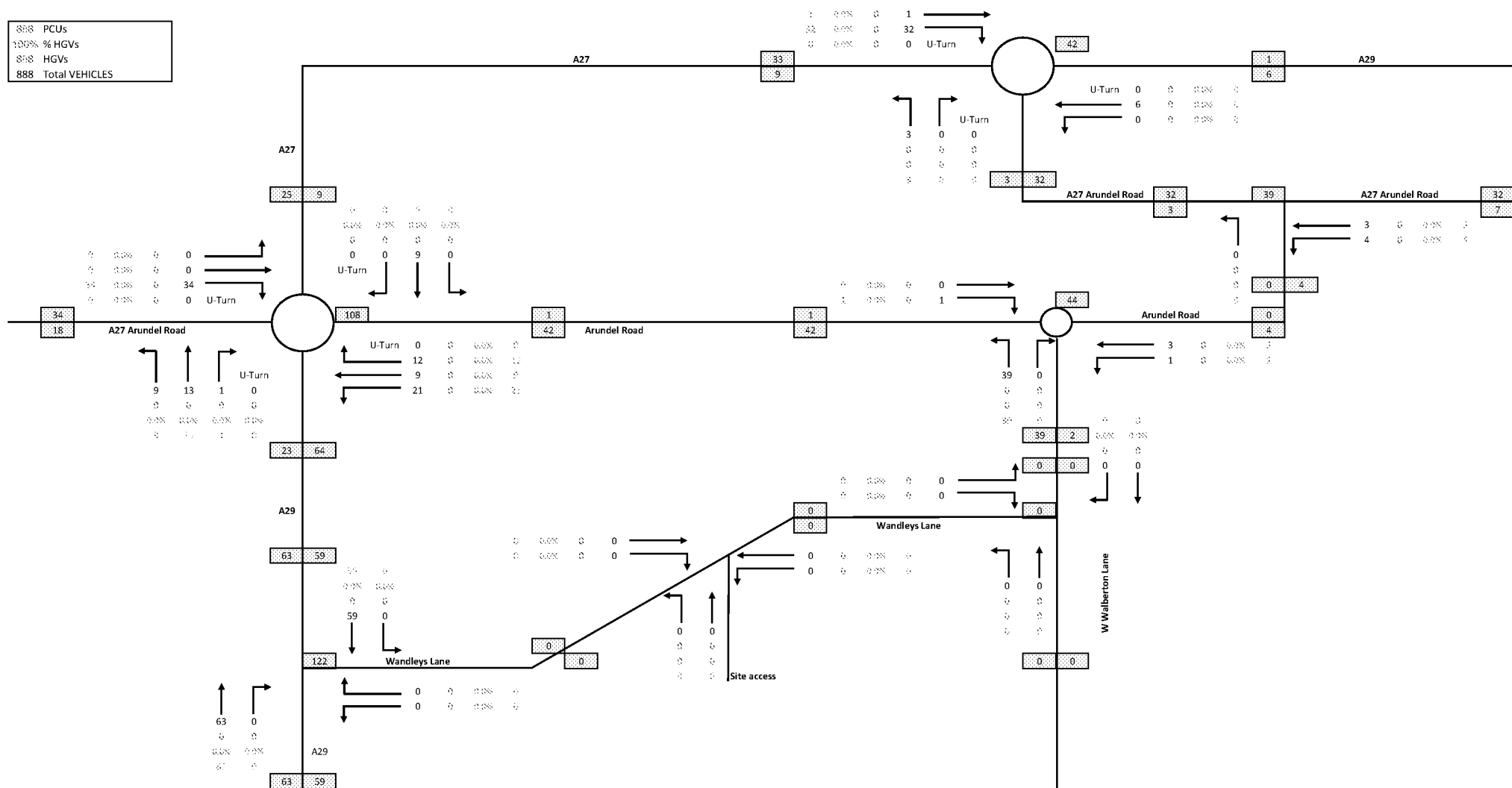




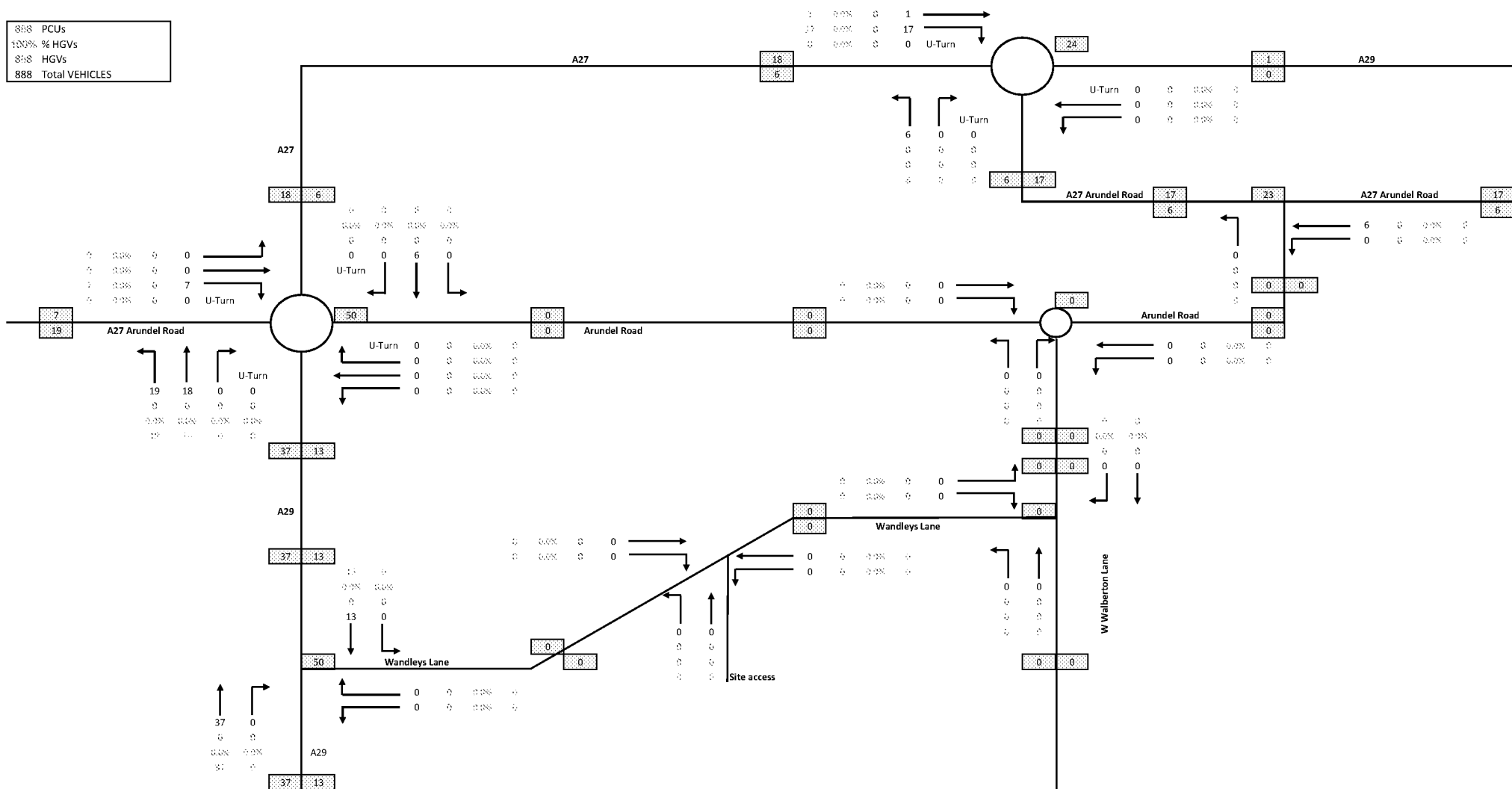
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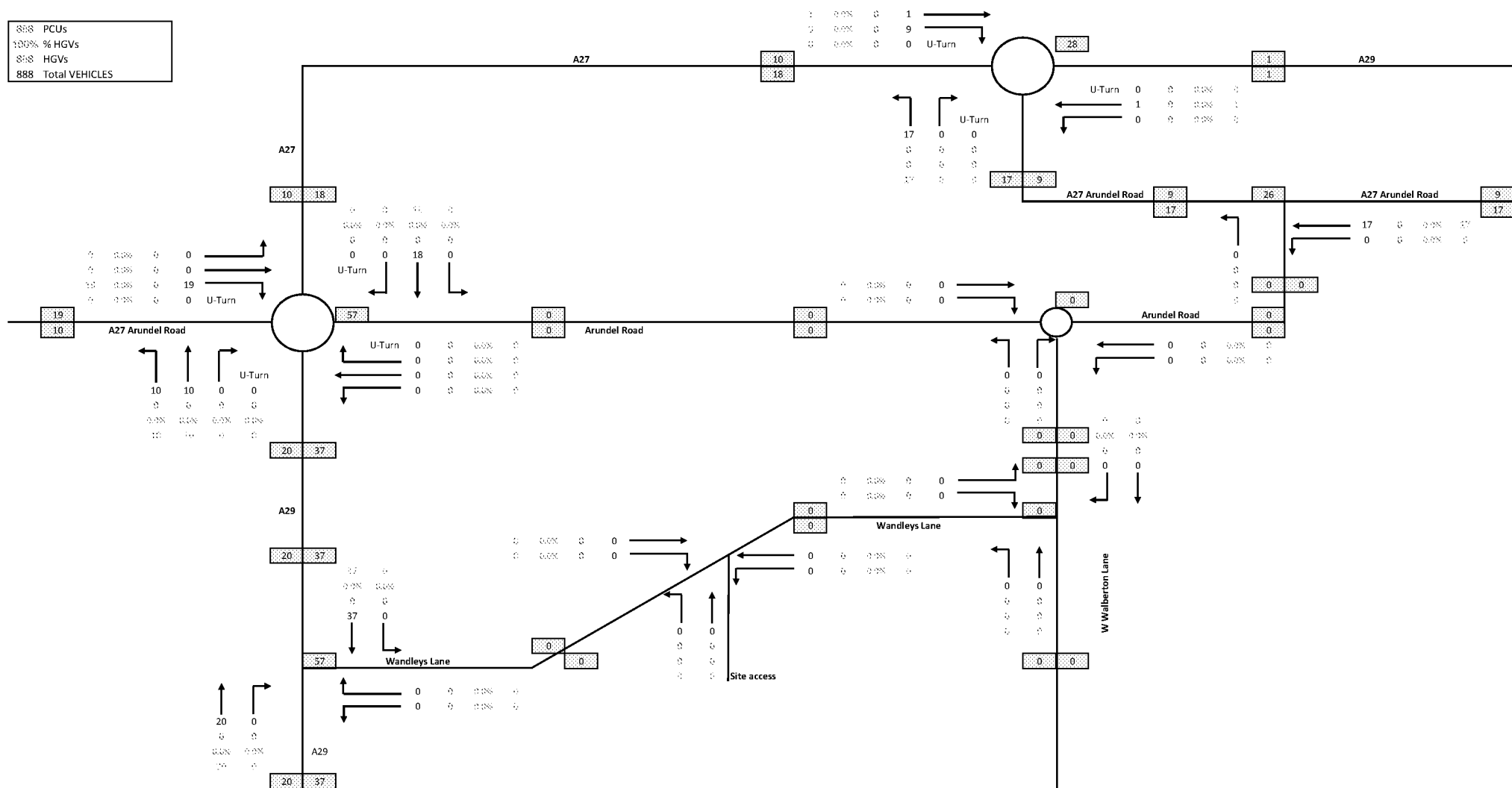
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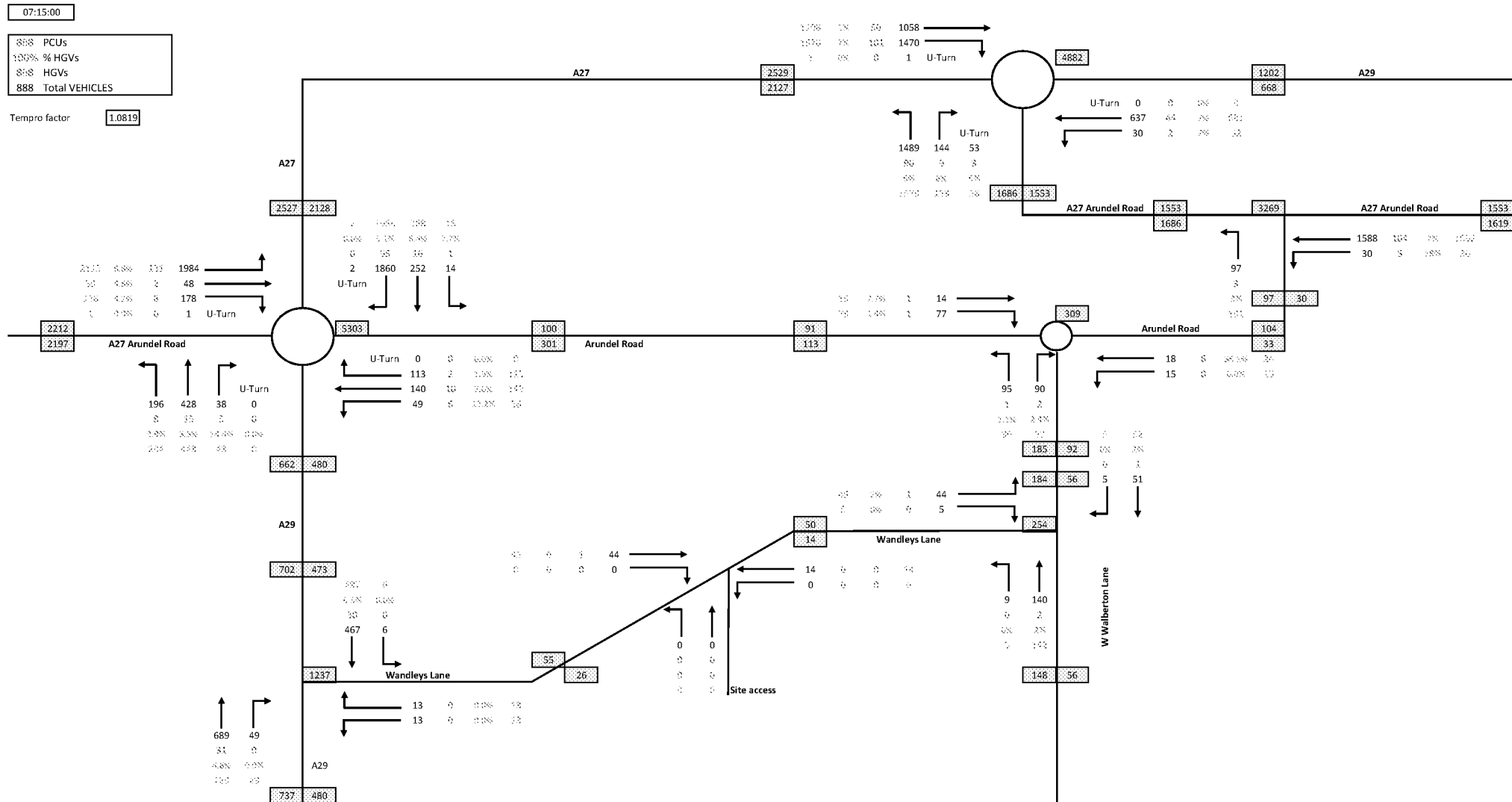


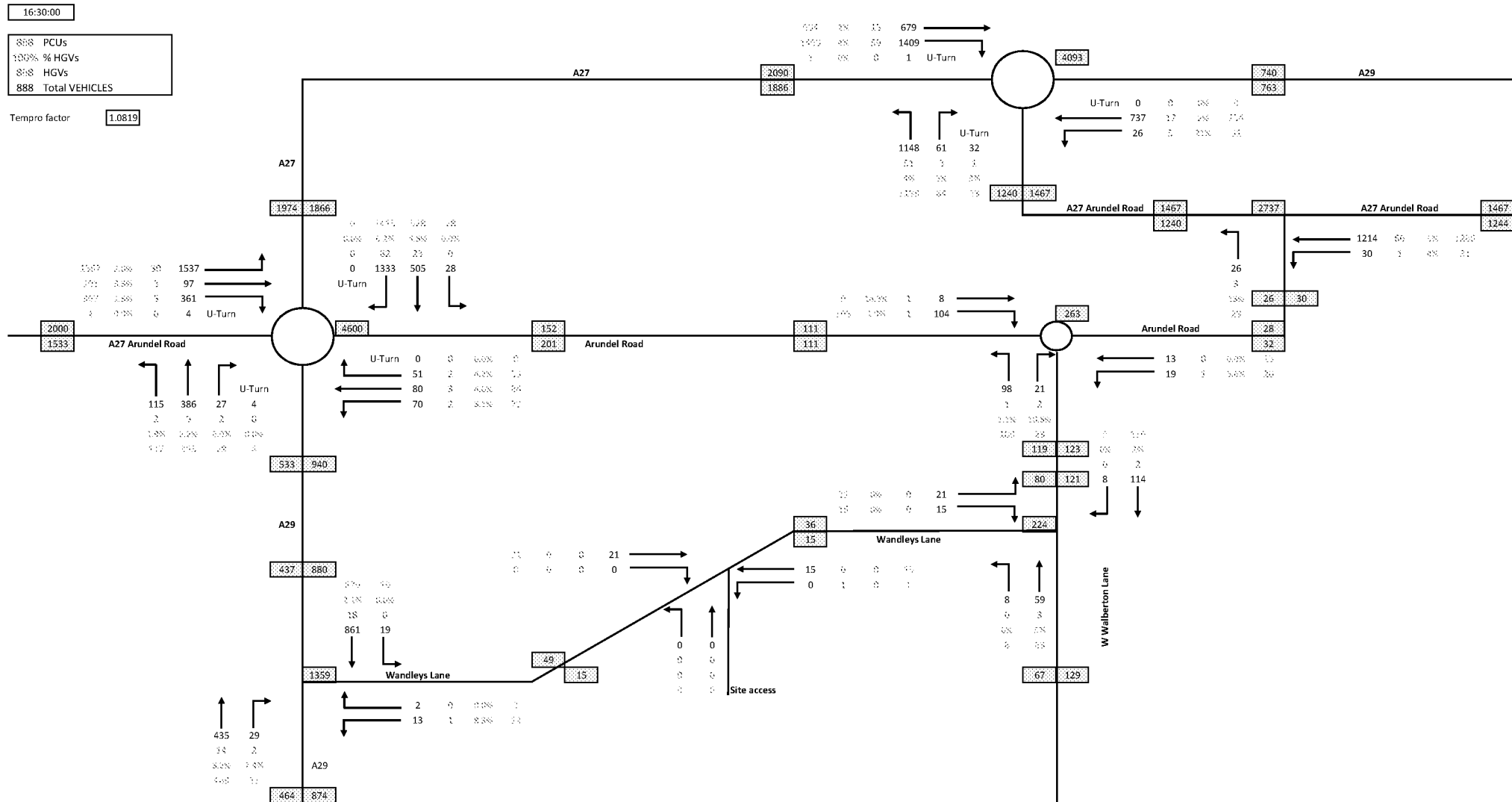
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 888 Total VEHICLES



888 PCUs
 100% % HGVs
 888 HGVs
 888 Total VEHICLES







A27 / A29 / Arundel Road Fontwell West Junction

Forecast Turning Movements

2031

Arun Local Plan Final Scenario with mitigation

AM peak

From/to	A27 Arundel Rd W	A27 Fontwell Bypass	Arundel Rd E	A29 Fontwell Ave
A27 Arundel Rd W	159	1198	144	292
A27 Fontwell	1437	0	0	214
Arundel Rd	453	0	0	2
A29 Fontwell Ave	38	428	0	0

PM peak

From/to	A27 Arundel Rd W	A27 Fontwell Bypass	Arundel Rd E
A27 Arundel Rd W	95	1542	362
A27 Fontwell Bypass	1078	0	0
Arundel Rd	292	0	0
A29 Fontwell Ave	59	376	0

A29
Fontwell
Ave

787

634
7

0

A27/A29 Fontwell East Junction

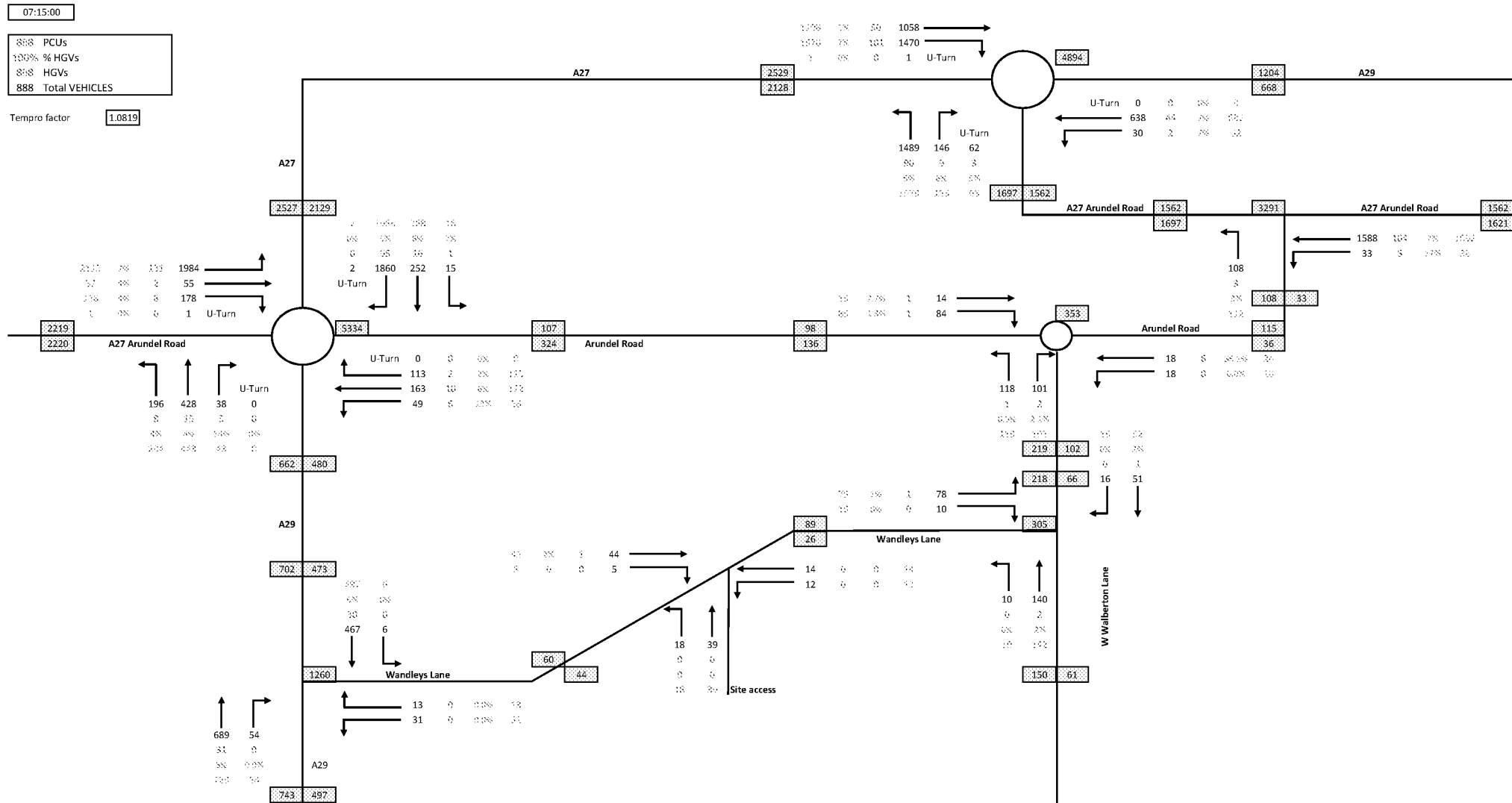
Arun Local Plan Final Scenario with mitigation

AM peak

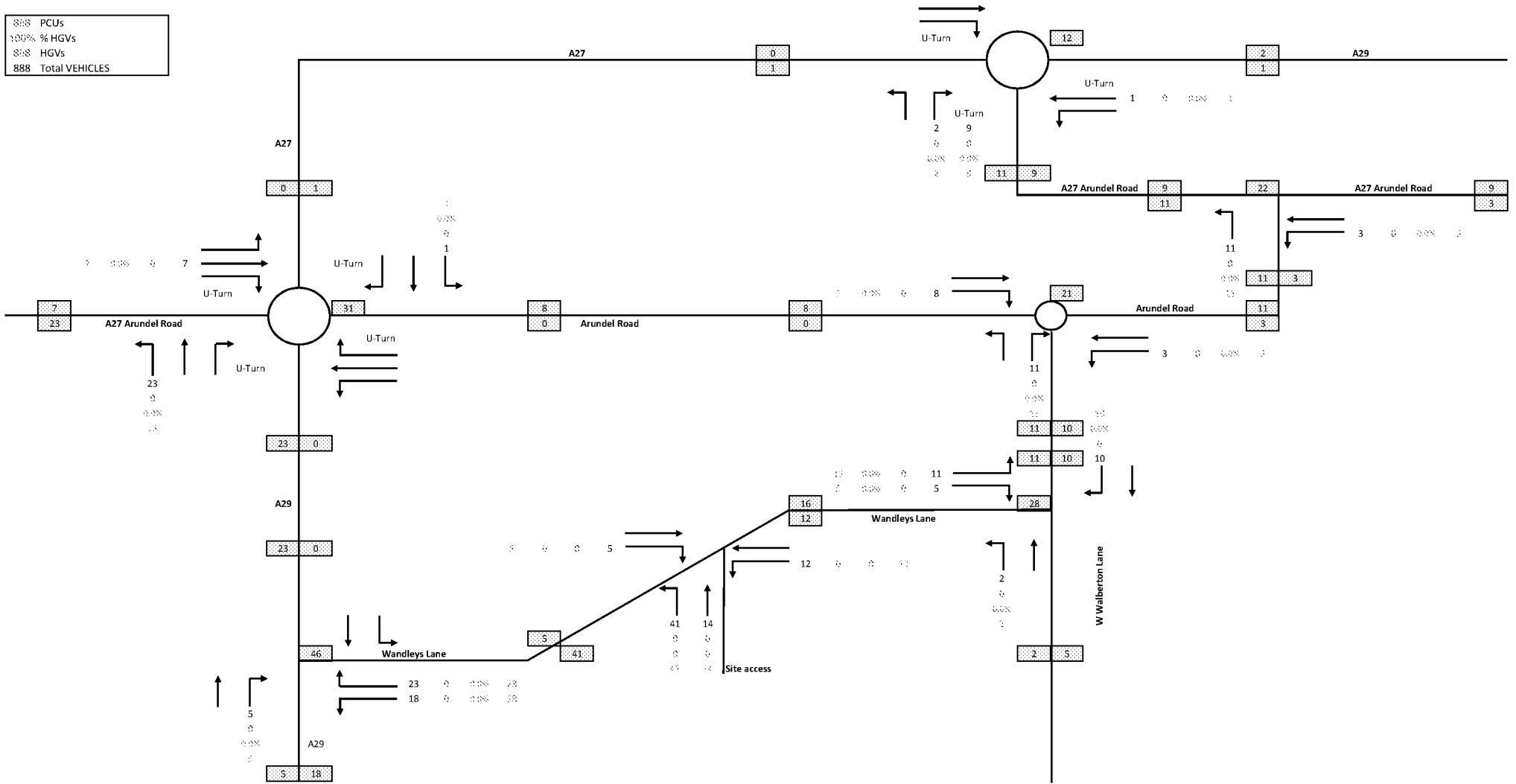
From/to	A27 Fontwell Bypass W	A29 (Slindon Common)	A27 Arundel Rd E
A27 Fontwell	0	544	1082
A29 (Slindon Common)	770	0	0
A27 Arundel Rd E	881	660	211

PM peak

From/to	A27 Fontwell Bypass W	A29 (Slindon Common)	A27 Arundel Rd E
A27 Fontwell Bypass W	0	703	1215
A29 (Slindon Common)	920	0	0
A27 Arundel Rd E	792	222	16



888 PCUs
100% % HGVs
888 HGVs
888 Total VEHICLES



AM peak hour

Development traffic flows - Sensitivity distribution

Figure 7.15

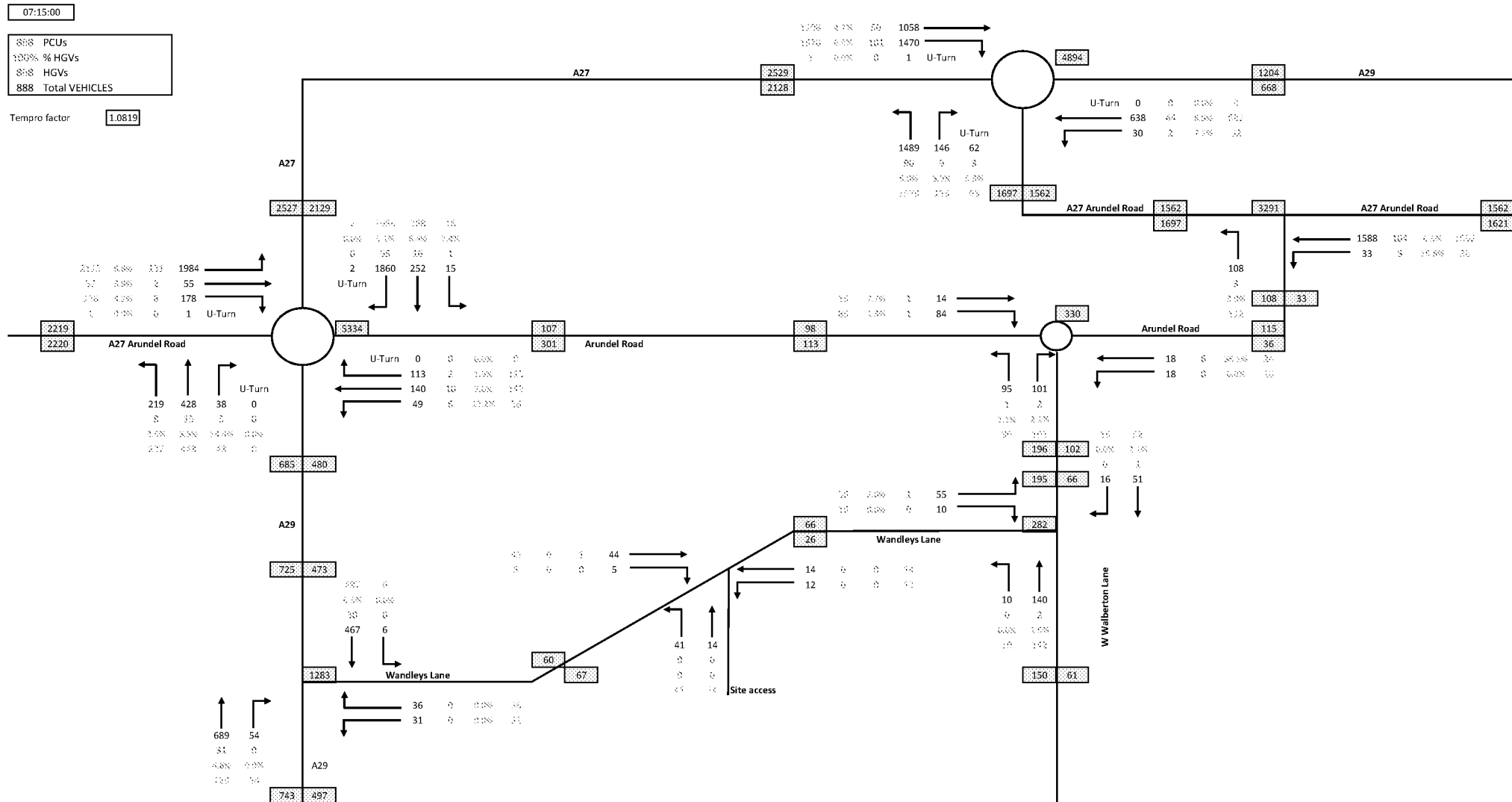
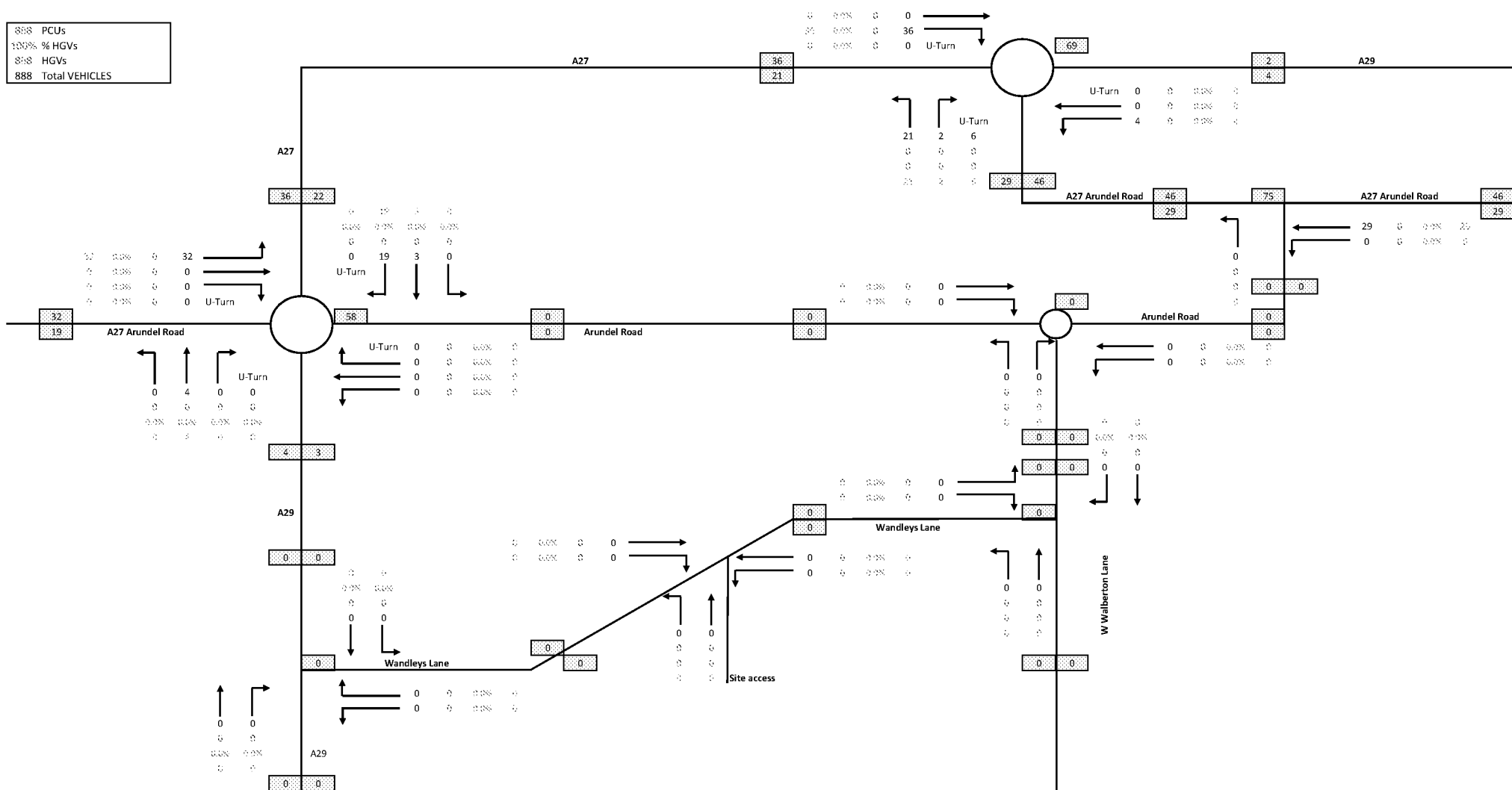


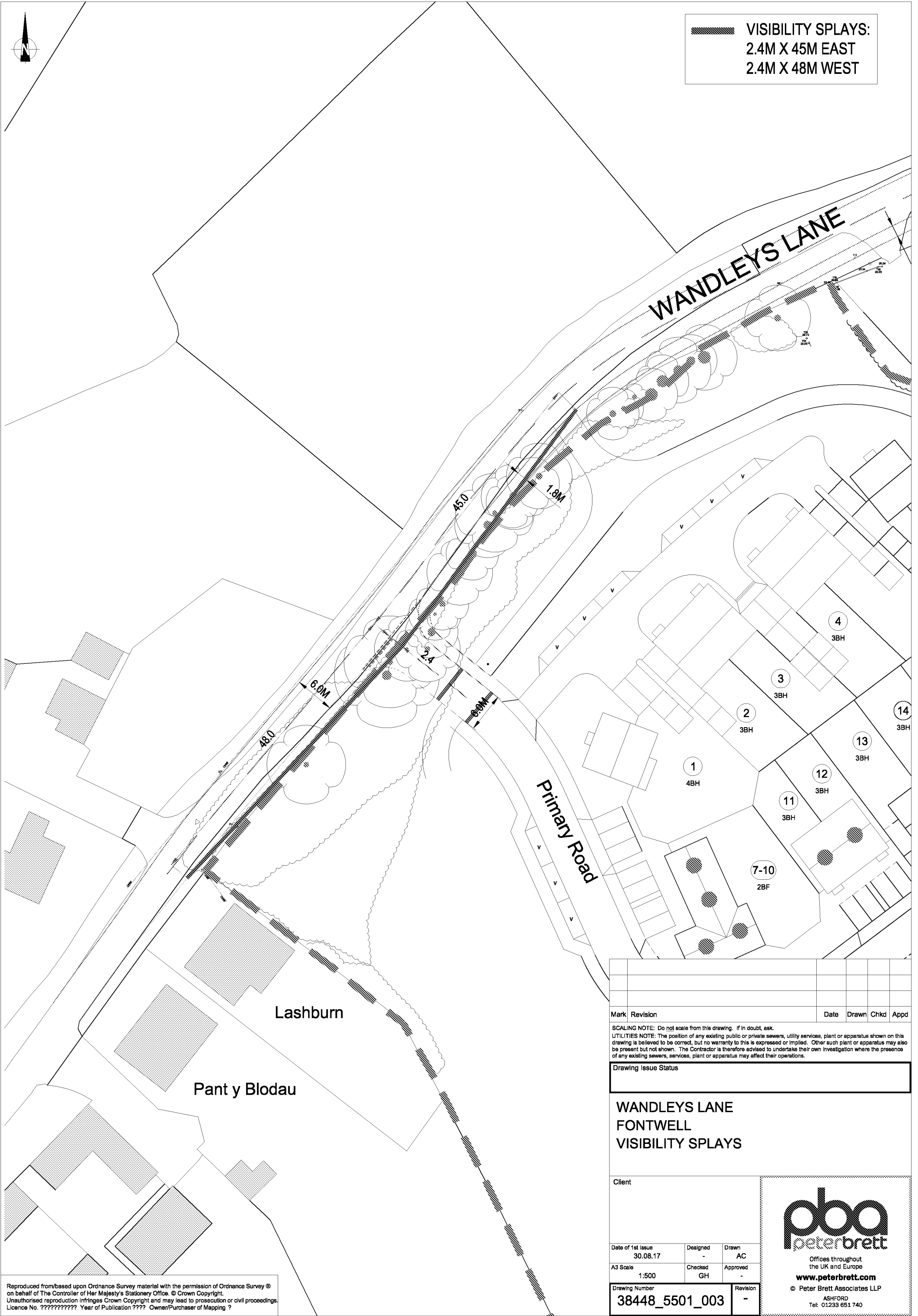


Figure 7.17

888 PCUs
 100% % HGVs
 888 HGVs
 888 Total VEHICLES



Appendix A Site Access Junction



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Drawing Issue Status					
WANDLEYS LANE FONTWELL VISIBILITY SPLAYS					
Client					
Date of 1st Issue 30.08.17		Designed -	Drawn AC	 Offices throughout the UK and Europe www.peterbrett.com © Peter Brett Associates LLP ASHFORD Tel: 01233 651 740	
A3 Scale 1:500		Checked GH	Approved -		
Drawing Number 38448_5501_003		Revision -			