

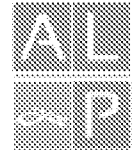
LAND WEST OF BILSHAM ROAD, YAPTON

TRANSPORT ASSESSMENT



LANDLINK ESTATES LTD

04 JANUARY 2022



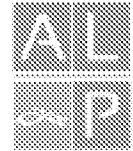
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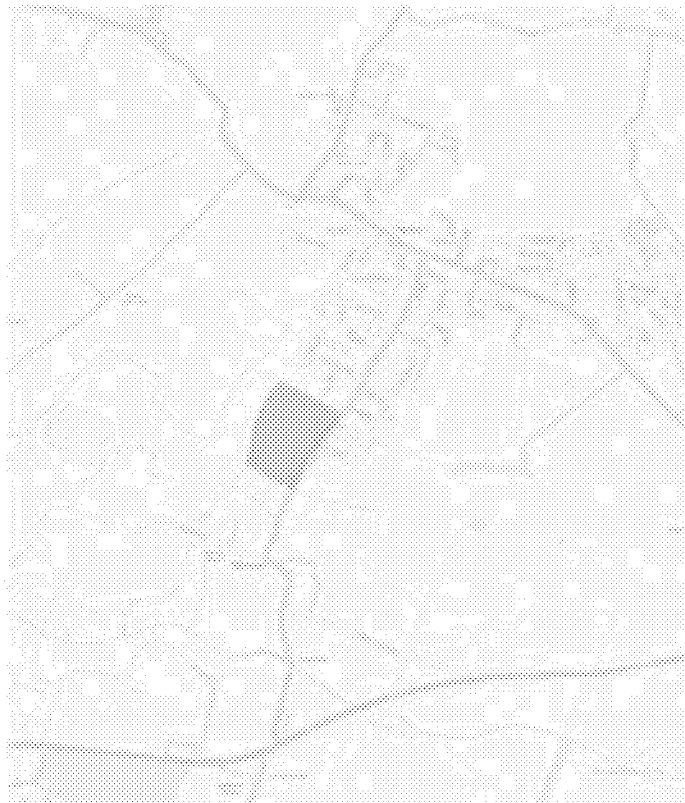
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1.0 Introduction

- 1.1. This Transport Assessment (TA) has been prepared on behalf of Landlink Estates Ltd as part of a *Hybrid Application comprising Phase 1 (Full application) 30 residential dwellings, new access from Bilsham Road, public open space, landscaping, sustainable urban drainage and associated works and Outline planning application for further phases of up to 110 dwellings and associated infrastructure (with all matters reserved)* on land located west of the B2132 Bilsham Road, Yapton.
- 1.2. The development site is located c.800m south of the centre of Yapton (see **Figure 1** below) and c.5-8km east of Bognor Regis and west of Littlehampton. Remaining figures are included within **Appendix A**.

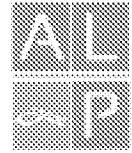
Figure 1 – Site Location



- 1.3. The site comprises a total of 7.97ha of agricultural land with a total net developable area of 5ha. The Phase 1 detailed area comprises c.1.68ha. The proposals are for the erection of up to 140 mixed private and affordable residential dwellings. The site is not allocated within the adopted local plan; however, it is being promoted under the Arun District Council Interim Housing Statement, approved in March 2021.

Pre-Application Discussions

- 1.4. The details and requirements of the Transport Assessment were discussed and agreed with West Sussex County Council (WSCC) Highways through the formal Pre-application process.



1.5. A Scoping Note setting out the methodology and initial observations was submitted in June 2021, with a meeting being held to discuss the proposals on 24th August 2021. The full pre-application response has been included in **Appendix B**. Items agreed at this stage included:

- Principle of Site Sustainability
- Principle of Access Arrangements
- Residential Trip Rates
- Traffic Distribution and Assignment
- Baseline Traffic Flows
- Committed Development / Growth Factors
- Junction Capacity Impact study area
- Future Assessment Scenarios

Report Structure

1.6. This TA is structured to ensure a clear, comprehensive, and robust assessment of the proposed developments impact upon the local highway network. As such the report provides the following information and discusses the proposals in the following sections:

Section 2 – Assesses the development in the context of national and local planning policy, demonstrating that the proposals are policy compliant.

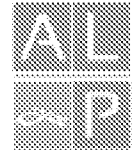
Section 3 – Provides a detailed review of the existing site conditions, giving particular attention to existing sustainable travel opportunities and where appropriate identifying potential improvement opportunities.

Section 4 – Sets out the development proposals, including detailed information regarding access to the development, the detailed phase 1 layout and overall masterplan.

Section 5 – Discusses trip rates for the development and shows how traffic generated by the development would be distributed onto the local highway network.

Section 6 – Provides a summary of the junction capacity assessment results at locations identified on the local highway network.

Section 7 – Sets out a summary of the TA findings and concludes the report based upon the evidence provided.



2.0 Planning Policy

Planning Policy Context

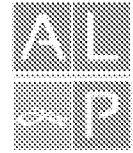
- 2.1. The proposed development site is located within the administrative boundary of Arun District Council (ADC) for which West Sussex County Council (WSSCC) act as the Local Highway Authority (LHA). The proposed site area also falls within the Parish of Yapton.
- 2.2. This section reviews the development proposals within the context of national and local planning transport policies and guidance.

National Planning Policy Framework

- 2.3. The Department for Communities and Local Government published the 'National Planning Policy Framework' (NPPF) document in March 2012, most recently updated on 20th July 2021.
- 2.4. The NPPF sets out the Government's policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced.
- 2.5. The purpose of the planning system is to contribute to the achievement of sustainable development. To ensure this is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development.
- 2.6. The NPPF states that transport issues should be considered from the earliest stages of plan-making and development proposals. Significant development should be focussed on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes.
- 2.7. In respect of promoting sustainable travel the NPPF advocates that when considering planning applications, authorities should take account whether:
 - *appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
 - *safe and suitable access to the site can be achieved for all users;*
 - *the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and*
 - *any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.*
- 2.8. The guidance advises that, subject to the above considerations, 'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.'

National Planning Practice Guidance (March 2014)

- 2.9. The National Planning Practice Guidance web-based resource was launched in March 2014 by the Department for Communities and Local Government. The guidance covers all aspects and procedures of the planning process and supports the National Planning Policy Framework.



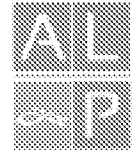
- 2.10. The guidance states that supporting Transport Assessments for planning applications are important as they should support national planning policy which sets out that the planning process should actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable.
- 2.11. Such assessments should be proportionate to the size and scope of the proposed development to which they relate and build on existing information wherever possible. Further to this they should be tailored to local circumstances.

West Sussex County Council Transport Plan (2011 – 2026)

- 2.12. The West Sussex Transport Plan (LTP3), adopted February 2011, sets out a long-term strategy for the continued development, improvement and management of transport infrastructure in West Sussex.
- 2.13. Relevant adopted policies relating to highways and sustainable travel been taken into consideration in this assessment with particular attention being given to the implementation plan for Arun and Littlehampton.
- 2.14. Section 2.2 of the plan states *‘The existing infrastructure deficit along the coast is widely considered by local businesses to contribute to poor economic performance in Arun and the need for regeneration. As a result, Bognor Regis and Littlehampton have both been identified as strategic places where new development is expected to help deliver regeneration during the lifetime of the Plan.’*

‘New development will be required to integrate into the existing transport network and deliver enhancements to the infrastructure, stimulating regeneration, improving connectivity and encouraging long term sustainable travel behaviour.’

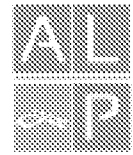
- 2.15. The key aims for Arun relevant to the scale and location of the proposed development are:
- Maintaining roads and public rights of way to a good standard.
 - All new development should be designed to promote ‘local living’, for example shops, jobs and homes all being within easy reach of each other.
 - All new development should provide enough secure cycle parking to meet the needs of the development and be within close proximity to public transport.
 - Parking provision at new residential development should provide enough spaces to accommodate the expected number of vehicles at the site or provide measures such as car clubs which reduce the number of vehicles to match the space available.
 - Ensuring that all new development contributes to the regeneration aspirations and the transport issues in Bognor Regis and Littlehampton.
 - Making the best use of the existing road network and improving the way in which the network is managed to reduce levels of congestion. For example, through the introduction of intelligent transport systems and improving public transport reliability.
 - Safeguarding against traffic generated by new development resulting in the capacity of the highway network being exceeded by including measures to encourage sustainable travel behaviour.
 - Developing and implementing schemes which contribute to the completion of the Bognor Regis and Littlehampton cycle networks.



- Improving pedestrian accessibility throughout the district by enhancing existing pedestrian crossings and providing new pedestrian crossing facilities at identified key locations.
- Encourage the use of cleaner vehicles such as electric cars, by providing electric charging facilities

Arun District Council Local Plan

- 2.16. Arun District Council's (ADC) Local Plan was adopted in 2018 and sets out guidelines and policies for development and accommodating growth in the area between 2011 – 2031.
- 2.17. Policies regarding Transport and Sustainable Development have been considered as part of the assessment and mitigation measures proposed. The key policies considered include.
- 2.18. Policy **SD SP1 - Sustainable Development** sets out ADC's positive stance towards development, reflective of NPPF's presumption in favour of sustainable development. The policy indicates the local authority will be pro-active in working with applications to secure permission for suitable development.
- 2.19. Policy **T SP1 – Transport and Development** states that ADC will support development that:
- are designed to reduce reliance upon use of the private car.
 - and gives priority to pedestrians and cyclists.
 - does not prejudice improvements to the major road network and where applicable contributes towards local highway improvements.
 - Provides appropriate levels of allocated and visitor parking on-site.
 - Explains how the development is designed to accommodate deliveries and servicing, prioritises pedestrian and cycle movements and access to public transport, create a safe and secure layout, incorporates electric vehicle charging infrastructure and considers the needs of the mobility and visually impaired.
- 2.20. Policy **T DM1 - Sustainable Transport and Public Rights of Way** states that new development must:
- Be located within easy access of established and aspirational public transport services, walking, and cycling networks.
 - Where applicable contribute towards expansion of existing public transport services.
 - Ensure adequate safe and secure storage for bicycles is provided within development meet current adopted standards.
 - Contribute towards the provision of a joined up Public Right of Way and Cycle network, taking account of the council's aspirational plans to expand the cycle network, providing convenient, accessible, safe, comfortable and attractive routes for non-motorised road users.
- 2.21. While the site is not included as an allocated site, it was identified as a 'deliverable' site (18Y2) with a viability yield of 207, in Appendix 1 of the ADC HELAA December 2020.



Yapton Neighbourhood Development Plan

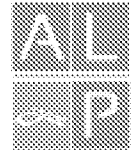
- 2.22. The development site is located within the Parish of Yapton, for which the Yapton Neighbourhood Development Plan (NDP) was formally adopted in November 2014 and set out the local community's vision for development in the parish up to 2029.
- 2.23. Given the Yapton Neighbourhood plan is out of date (2014), as it predates the adopted local plan, and a number of updates to the NPPF, it can have very limited weight in the decision-making process. The date of adoption also means it has no impact in terms of the five-year land supply in relation to NPPF paragraph 14.
- 2.24. The proposal to 'modify' the neighbourhood plan (known as YNP2) has been subject to an initial consultation and is subject to significant unresolved objections. The YNP2 modification has been progressed to a formal regulation 16 consultation, which will not conclude until January 2022.
- 2.25. Therefore, very limited weight can be given to the modified draft plan at this time as the 'modified' plan is likely to be subject to further change, further consultation and the plan will be subject to examination and possibly a referendum before the 'modification' can be assumed as 'made'.
- 2.26. It is noted that a National Highways consultation response to the draft NDP states '*any further development beyond that which is already consented will require the A27 Yapton Right Turn Lane mitigation to be in place prior to any occupancies*'.
- 2.27. Based upon information available on the ADC planning portal, this mitigation scheme is to be implemented as part of a S106 agreement associated with an approved development for 175 dwellings on land at Tye Lane, Walberton (WA/44/17/OUT) (see extracts in **Appendix C**), the trigger for which is the 90th occupation. However, although the mitigation scheme has yet to be implemented given construction of this development is underway this required improvement to the A27 is very likely to be in place well before the proposals considered in this application would commence.
- 2.28. The NDP also sets out local design guidance as well as preferred parking standards for residential development in Yapton. As a predominately Outline application such details are not wholly relevant at this stage however the guidance has been referred to in the production of the site's masterplan and Phase 1 elements. The Yapton Neighbourhood plan states that due to high levels of car ownership in Yapton parish there must be minimum standards for the number of off-road parking spaces. These minimum standards are noted in Yapton Neighbourhood Development Plan Reg. 16.

Arun DC Parking Standards (January 2020)

- 2.29. ADC Parking Standards were formally adopted in January 2020. The guidance provides expected levels of parking for different zones in the district based upon parking behaviours. A map provided within the guidance identifies Yapton as being within Zone 1, with subsequent parking expectations being provided. **Section 4** of this report sets out the proposed parking arrangements based upon the adopted standards.

West Sussex Walking and Cycling Strategy 2016 - 2026

- 2.30. WSCC Walking and Cycling Strategy sets out a prioritised list of c.300 potential walking and cycling improvements identified by stakeholders, landowners, and the council.



- 2.31. It is considered reasonable that any impact with respect cycling infrastructure would be accounted for as part of contributions to be made via CIL, which can then be apportioned and used, as necessary.

Conclusion

- 2.32. The ADC 2020 HEELA identified the site as suitable for development and while the site is not allocated for the development of dwellings within the Local Plan, the scale and proximity to existing residential development as well as its existing and potential connectivity to the local highway network, bus services and walking / cycling facilities are such that it lends itself to being an ideal place for additional houses to be provided.
- 2.33. The overarching principle of national and local transport policy is for new development to be located where it is accessible by a range of transport modes including walking, cycling and public transport and safe access and appropriate parking should be provided.
- 2.34. Fundamentally, development should only be prevented from coming forward for transport reasons if the residual impact would be severe.
- 2.35. The proposals set out in this assessment demonstrate that the criteria set in both national and local policy are met to a satisfactory level and as such the development should be considered acceptable.



3.0 Site Conditions and Local Context

- 3.1. The development site is located to the west of the B2132 Bilsham Road, south of Yapton village centre. The site comprises a total of 7.97ha of agricultural land with a total net developable area of 5ha. The Phase 1 detailed area comprises c.1.68ha. of agricultural land, with an existing field access directly opposite Taylors Close.
- 3.2. To the north is a large, proposed permitted development of 550 dwellings, while to the east is existing residential development. To the south and west are open fields and farmland.

Local Highway Network

- 3.3. The B2132 Bilsham Road is a local distributor link into Yapton extending from the A259 to the south to the B2233 Main Road to the north. The carriageway features a width of c.6-6.5m and has footway along at least one side of the carriageway for most of its length and both sides within the village. The road is subject to a 30mph speed limit and has several direct driveway accesses and residential side streets.
- 3.4. Approximately 30m south of Taylors Close the speed limit increases to 40mph, which continues to the A259, where it connects at 'Comet Corner' via a staggered priority junction.
- 3.5. The A259 is part of WSCC's Major Road Network running along the southern coast between Chichester Bognor Regis, Felpham and Littlehampton.
- 3.6. To the north the B2132 continues into Yapton where it connects with the B2233 Burndell Road / Main Road via a mini roundabout.
- 3.7. The B2233 Burndell Road / Main Road forms the main route through Yapton and is also approximately 6.5m in width, subject to a 30mph speed limit and features several driveway accesses and side roads. This road connects between the A259 at the 'Oystercatcher' junction 1.3km to the southeast and the A29 to the northwest.
- 3.8. In addition, the B2233 Main Road connects with the B2132 North End Road in the northern area of Yapton which continues to the village of Walberton and eventually connects with the A27.

Existing Traffic Flows

- 3.9. As agreed with WSCC an Automatic Traffic Count (ATC) survey of the B2132 Bilsham Road was undertaken to establish current traffic volumes and speeds in the vicinity of the site. The survey data have been included in **Appendix D**, while Table 3.1 summarises the survey results.

Table 3.1 – Existing B2132 Bilsham Road Volumes and Speeds (Sept 2021)

	AM	PM	Daily	Avg. Speed	85 th % Speed
Northbound	194	261	2744	32mph	38mph
Southbound	79	163	1936	33mph	38mph
Total	273	424	4680		

- 3.10. As agreed with WSCC, on the basis that the proposed access is located within a well-established residential area with numerous side streets featuring simple priority-controlled junctions, it is considered appropriate that a similar access arrangement is provided for this proposed development.



- 3.11. Manual for Streets 1 and 2 provide guidance with respects appropriate visibility provision for residential development and link roads towards major road networks with 85th speeds both above and below 60kph (37mph).
- 3.12. Based on the calculation provided in the guidance (See **Appendix D**) the observed 85th percentile speeds result in a requirement of 2.4m x 73m both northbound and southbound.

Highway Safety

- 3.13. To assess the current highway safety record, Road Traffic Collision (RTC) information has been obtained from Sussex Police for the most recent five-year period available (01/08/2016-31/07/2021). The study area included the B2132 Bilsham Road for its full length from the B2233 to the A259.
- 3.14. Due to the regulations set out by Sussex Police governing the distribution of sensitive and personal data, the collision reports cannot be included in this public document, however, Table 3.2 sets out a summary of the RTC record.

Table 3.2 – RTC Summary

Road User	Severity			Total
	Slight	Serious	Fatal	
Vehicle	5	0	0	5
Motorcycle	2	1	0	3
Pedestrian	2	0	0	2
Cyclist	0	1	0	1
Total	9	2	0	11

- 3.15. As can be seen a total of 11 collisions have been reported within the study area within the most recent five-year period available. Of these two resulted in serious injuries while the remaining nine collisions were regarded as slight in severity.
- 3.16. Four collisions were reported at the B2132 Bilsham Road / B2233 Mini Roundabout, all of which involved vulnerable road users. The contributing factors included loss of control due to a diesel spillage on the carriageway, failure to look properly and reckless manoeuvring.
- 3.17. The remaining collisions recorded occurred at the A259 Comet Corner junction and along the B2132 Bilsham Road. These collisions were attributed to poor road position, failure to look properly and recklessness / driving in a hurry.
- 3.18. Based upon the information provided it is clear that the collisions reported within the agreed study area occurred as a result of driver error and not the existing highway layout.

Collision Assessment Summary

- 3.19. Based upon the collision rate in the vicinity of the development (average 2.2 incidents per year) it is considered very unlikely that the addition of residential traffic from the development will result in an increase in collisions or diminish the existing highway safety record within Yapton, especially when local improvement works to be delivered by other approved developments are taken into account.



- 3.20. The proposed development (discussed in detail in Section 4) will provide a new access c.30m north of Taylors Close, along with pedestrian facilities. The access has been designed in accordance with guidance provided in CD123 (Design Manual for Roads and Bridges) and Manual for Streets 1/2.
- 3.21. As such it is considered highly unlikely that the development will have any material impact upon the safety of the existing highway network.

Sustainable Accessibility

- 3.22. As previously highlighted the site is ideally located to connect with the existing walking and cycling networks in and around Yapton. See **Figure 1 in Appendix A**.
- 3.23. Current walking design guidance and evidence in the National Travel Survey suggest that most walking journeys are generally no more than a mile (1.6km) with some facilities such as schools attracting longer walking journeys of up to 2km.
- 3.24. LTN/120 (July 2020) Cycle Infrastructure Design states *‘Two out of every three personal trips are less than five miles in length – an achievable distance to cycle for most people’*. Five miles equates to 8km and based upon this modern guidance, is an achievable cycle distance for most people subject to suitable cycling infrastructure and safe routes being available.
- 3.25. Based on the above Table 3.3 identifies existing facilities within acceptable walking (max 2km) and cycling distances (8km) to the development site.

Table 3.3: Local Facilities and Amenities

Facility	Walk / Cycle Distance
Bus Stops	400m
Bilsham Stores	400- 800m
Meadow Croft Surgery	800m
Yapton Village Centre, Village Hall, Co-Op, Butcher, Fish and Chip Shop, Hair Salon	1.2km
Yapton Primary School	1.6km
Barnham Village Centre and Railway Station	3.5km
Elmer Beach	3.5km
St Philip Howard Catholic Secondary School	3.8km
Climping Beach	4.8km
Ormiston Six Village Academy and Sports Centre	6.0km
Littlehampton, Lineside Industrial estate, Railway Station, The Littlehampton Academy	5.5-7.5km
Felpham, Bognor Regis, North Bersted, South Bersted	6.0-7.5km

- 3.26. As can be seen there are several local amenities that can easily be accessed via walking, as well as other destinations further afield being accessible by bicycle and public transport.



Walking and Cycling

- 3.27. Cyclists and walkers will easily be able to access the bus stops and village via proposed new and existing footway along the B2132 Bilsham Road. In addition, the approved developments to the north will deliver a new cycle link connecting the B2132 Bilsham Road with Drove Lane and the B2233 Main Road (See Extracts in **Appendix E**). The station has an existing provision of 62 secure cycle parking spaces enabling cyclists to safely store their bicycles on-site.
- 3.28. Currently, to cycle to Barnham Railway station from Yapton, the on-road route follows the B2233 Main Road. However, WSCC have recently taken contributions from other local developments as well as safeguarding land for an off-road Yapton to Barnham cycle link. It is anticipated that this development will also contribute to the off-road cycle route to Barham Station through an appropriate s106 mitigation payment. This is identified in the draft Heads of Terms of the s106 agreement.
- 3.29. In addition, the site is within 1km of National Cycle Route 2, running along the A259, between Littlehampton and Bognor Regis. This route was recently upgraded and now features a 3-4m wide shared footway / cycleway for the entire length between the two towns.
- 3.30. Littlehampton, Bognor Regis and Barnham are all within acceptable cycling distance of the site (3.5-7.5km) and taking into account delivered and planned improvements in the area cycling to and from Yapton will become a more attractive and safe option.
- 3.31. It is noted that the eastern verge of the B2132 Bilsham Road, south of Taylors Close shows evidence of extensive use by walkers and as such an opportunity to provide an improvement that will improve highway safety and benefit the wider community has been identified. These proposals are discussed in **Section 4**.

Public Transport Provision - Bus

- 3.32. The nearest bus stops are located on the B2132 Bilsham Road and are within 400m of the furthest part of the site. These stops provide shelters as well as real-time journey information updates.
- 3.33. The existing No.700 service generally operates 2-3 services per hour Monday – Friday with up to 4 services per hour during the day at weekends. On weekdays the bus service operates between the hours 05:30 and 22:43 making it a viable travel options for commuters with an average journey time of 20-minutes to Littlehampton and 30 minutes to Bognor Regis.
- 3.34. The route provides access between Littlehampton, Bognor Regis, Chichester, Emsworth, Havant and Portsmouth and is thus a significant sustainable mode of transport available for use by the development. The current route maps and timetables have also been included in **Appendix E**, while Table 3.4 summarises the services.

Table 3.4 – Bus Service Summary

Route No.	Route	Frequency					
		Mon - Fri	First / Last Service	Sat	First / Last Service	Sun	First / Last Service
700	Littlehampton – Bognor Regis – Chichester – Havant - Portsmouth	20 mins	05:30 / 22:43	20 mins	06:09 / 22:43	30 mins	07:55 / 21:04



- 3.35. As shown, the existing bus provision is good with a regular twenty-minute service to key destinations including Littlehampton, Bognor Regis, Chichester and Portsmouth. This provides excellent opportunities for travel by bus and thus contributes to the sustainability of the site.
- 3.36. The existing stops both feature wooden shelters as well as a real time information board, while the southbound stop is a simple flagpole arrangement.

Public Transport Provision - Rail

- 3.37. Barnham railway station is located within a 3.5km cycle journey of the site. The station being situated on the West Coastway Line running between Brighton and Southampton as well as being the junction for the branch line to Bognor Regis.
- 3.38. Barnham station acts as an interchange between fast and slow services and includes destinations at London Victoria, Gatwick Airport, Brighton, Portsmouth and Southampton. Services are available every 20-30 minutes. Table 3.5 summarises average journey times to key destinations available directly from the station.

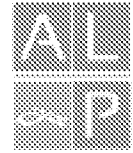
Table 3.5 – Rail Service Summary

Destination	Avg. Journey Time	Trains Per Hour
London Victoria	1hr 30 min	2tph
Gatwick	1 hour	4tph
Brighton	55mins - 1 hr	2tph
Littlehampton	20 – 30 mins	1tph
Portsmouth and Southsea	30 – 40 mins	3tph
Southampton Central	60 mins – 1 hr 15 mins	2tph

- 3.39. Being accessible by bicycle or a very short car journey, it is clear the rail network would afford residents the opportunity to access key facilities and amenities both safely and conveniently.
- 3.40. Therefore, the development site can be considered to be highly accessible by public transport services with a real possibility of bus and rail forming part of or all of resident's journeys, with the additional potential for elements of walking and cycling to make up portions of those trips.
- 3.41. The Travel Plan will seek to build upon these existing provisions and as previously mentioned the access strategy will ensure safe and easy access is provided for both pedestrians and cyclists.

Potential Barriers to Sustainable Travel

- 3.42. This section shows that the site has the potential to be highly accessible. The whole site is located within 400m of existing bus stops with regular services offering journeys to key local destinations, while local services in Yapton and nearby villages such as Barnham Railway station are safely accessible on foot and by bicycle.
- 3.43. It is of course recognised that travelling via modes other than a private vehicle may not be the most suitable or convenient travel choice for all residents all of the time. However, given the site's proximity to local facilities such as schools, employment areas and convenience retail stores, there is great potential for trips generated by the development to be undertaken by sustainable travel modes.
- 3.44. The development proposals therefore adhere to the first key test of the NPPF given that the site affords appropriate opportunities for sustainable travel modes to be taken up.

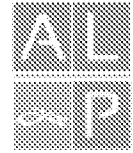


4.0 Development Proposals

- 4.1. This section sets out in detail the development proposals including, access arrangements, offsite improvements, design hierarchy, parking provision and servicing. The proposed detailed layout of the first phase of development (30 dwellings) and the overall masterplan has been included in **Appendix F**.

Primary Access

- 4.2. Vehicular access to the development is proposed to be taken via a new priority-controlled arrangement from the B2132 Bilsham Road, 30m north of Taylors Close. ALP drawing **A361-001 P4** illustrates the access arrangements (**Appendix A**).
- 4.3. As appropriate through design guidance, the access is reflective of other existing and recently approved residential access roads for similar scales of development within Yaptan and achieves a separation of 25m with Taylors Close. This in addition to being well within the 30mph zone is considered an appropriate provision.
- 4.4. With respects junction spacing MfS states in paragraph 7.3.17 *'The spacing of junctions should be determined by the type and size of urban blocks appropriate for the development.'*
- 4.5. MfS2 states: *'9.2.1 In the past, guidance on minimum junction spacing has often been based on recommended stopping sight distances (SSD) for 85th percentile speeds. The reductions in SSD compared to previous practice means that junction spacing criteria determined on this basis should be reduced. However, in any event there appears to be little evidence that spacing criteria based on SSD are justified on safety or other grounds.'*
- 4.6. In addition to this with respects priority junctions, CD123 states:
- NOTE 1: In England and Wales, on major roads with a speed limit of 40 mph or less, decisions on priority junctions where the minor road does not form part of a through route, and direct accesses are first dealt with by the local planning authority.'*
- 4.7. As agreed with WSCC at scoping, visibility splays of 2.4m x 73m are to be provided, calculated based upon formula from MfS, for a measured 85th percentile speeds of 38mph.
- 4.8. While not prescriptive, the provision of a Ghost Island Right turn arrangement in this location is not considered appropriate as this can have the effect of allowing drivers to continue through the junction without slowing down, which is undesirable in a low-design speed zone.
- 4.9. Given the existing 85% speeds are already above the posted 30mph speed limit it is therefore likely that the presence of development along both sides of the carriageway, as well as the new access junction and footways will encourage lower speeds, while other traffic calming measures are also to be included as part of the access proposals, including renewed road markings, a digital vehicle activated speed limit reminder sign and signage.
- 4.10. Based on the above guidance, and evidence gathered it is therefore considered that the access location and design is suitable for the scale of development proposed.



Road Safety Audit

- 4.11. As a Hybrid-application with the main access and highway considerations being in detail, an independent Stage 1/2 combined Road Safety Audit of the access proposals has been undertaken by Avon Traffic & Safety Services.
- 4.12. The combining of Stage 1/2 Road Safety Audits is permitted as set out in the guidance DMRB Document GG119, which states: *'Where preliminary design is not undertaken, a stage 1 RSA may be combined with a stage 2 RSA at the detailed design stage.'*
- 4.13. The audit brief contained preliminary design information from which the Auditors were able to undertake a full assessment of the proposed arrangements.
- 4.14. No material safety issues were raised by the audit, with some minor details / information being added to the proposed access arrangements. The audit report and designers' response have been included in **Appendix G**.

Pedestrian and Cycle Access

- 4.15. A new footway is proposed to be provided linking the site access with the existing footway and bus stops along the B2132 Bilsham Road to the north of the site. The adjacent development of the strategic site SD7 is also proposing to provide a footway southward towards the bus stops, once implemented this would give a continuous pedestrian route on the western side of Bilsham Road towards the village centre from the new site access.
- 4.16. The northern boundary of the site abuts an approved development of 250 dwellings (SD7) which features a number of links into Yapton and towards Drove Lane. Pedestrian and cycle access to site SD7 is also proposed, subject to the agreement of the adjacent landowner.
- 4.17. Internally the Primary Street will feature 2m footway along both sides of the carriageway throughout the development. While other internal roads will generally have 2m footway along at least one side of the carriageway or be designed as a shared surface. This is sufficient to enable pedestrians to pass each other in comfort (ref: Figure 6.8 of MfS).

Servicing and Emergency Access

- 4.18. Swept path analysis of the proposed detailed layout (30 dwellings) demonstrates that all areas of the site are accessible to a maximum sized refuse vehicle of 11.5m as required by WSCC.
- 4.19. Generally, bins will be collected from the kerbside, however where driveways are provided, bin collection points have been conveniently located within acceptable drag distances for refuse operatives and residents.
- 4.20. For the purposes of this assessment the largest vehicle available (11.9m) has been used to check the swept paths of the layout and are presented on ALP Drawing **A361--002 P3**.
- 4.21. This clearly demonstrates that a refuse vehicle can safely enter, turn within, and leave the site in a forward gear. The Layout therefore makes adequate provision for a refuse collection vehicle whilst complying with the guidance and principles set out in Manual for Streets which states that:



“The design of local roads should accommodate service vehicles without allowing their requirements to dominate the layout. On streets with low traffic flow and speeds, it may be assumed that they will be able to use the full width of the carriageway to manoeuvre.” (Ref: MfS para 6.8.1).

- 4.22. The layout also complies with Building Regulations in terms of enabling bins to be collected from locations that are:
- Within 30m of households
 - Within 25m of the refuse vehicle (ref: MfS para 6.8.9)
- 4.23. Bins will be stored at the front of properties within a suitable covered area and wheeled out to the kerb side / bin collection point on collection days, while flats are provided with a secure bin store.
- 4.24. It should also be noted that waste collection vehicles fitted with rear-mounted compaction units are the largest vehicles likely to require regular access to residential areas. (Ref: MfS para 6.8.7). Therefore, by providing a layout that accommodates such a vehicle, other smaller vehicles that may require regular access (e.g. parcels and supermarket deliveries) will also be accommodated.
- 4.25. The layout ensures fire tenders will not need to route anywhere that a refuse vehicle will not whilst still maintaining a hose length of 45m to every property in a satisfactory manner.
- 4.26. Given that a fire tender is smaller than the refuse vehicle tracked, it is apparent that the layout is satisfactory for fire tender access. All dwellings therefore accord with Part B of the Building Regulations in respect to accessibility of a fire tender.

Car and Cycle Parking

- 4.27. Based upon the parking zone map within the ADC guidance the site falls within Parking Behaviour Zone 1. Table 4.1 summarises the applicable parking standards and calculated demand for 30 dwellings. The same standards will also be applied to the wider outline area of the site (110 dwellings).

Table 4.1: Parking Standards Summary

No. Bedrooms	Habitable Rooms	ADC Parking Behaviour Zone 1 Standards	Yapton NDP Parking Requirements	No. Units Proposed	ADC Parking Demand	Yapton NDP Parking Requirements
1	1-3	2	1	5	10	5
2	4	2	2	12	24	24
3	5-6	2	2	10	20	20
4	7+	3	3	3	9	9
5	-	3	4	0	0	0
Total				30	63	58

- 4.28. The Phase 1 area provides a total of 63 allocated parking spaces including 6 garages (2 double, 4 single) which as per the ADC standards. This includes garages which are allowed to count as 0.5 spaces. In addition, 6 visitor spaces are provided (20%) in accordance with the standards.



- 4.29. In terms of practical design, the layout generally provides dwellings with a minimum of 2 allocated parking spaces per dwelling within property curtilages, with some larger units also benefiting from a single or double garage. Parking for flats is located within courtyards overlooked by the associated dwellings with 1 space allocated to 1 bed flats and 2 spaces for 2 bed flats. This provision accords with the Parking Standards set out in the adopted Yaptun Neighbourhood Plan (Policy PK1).
- 4.30. Based upon this the layout meets the total parking requirements outlined in the standards and should therefore be acceptable.
- 4.31. The standards also set out a recommended level of cycle parking provision within residential developments, Table 4.2 summarises.

Table 4.2: Cycle Parking Standards Summary

Dwelling Type	Dwelling Size	Cycle Parking
House	1&2 Bedroom	1
House	3+ Bedrooms	2
Flat	1&2 Bedroom	1
Flat	3+ Bedrooms	1

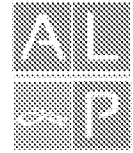
- 4.32. Based upon the proposed layout, cycle parking will generally be provided by way of garden sheds where garages are not available. Rear access of dwellings is also allowed for to private gardens with side entry gates, ensuring bicycles do not need to be carried through homes.

Electric Vehicle Charging

- 4.33. In accordance with the adopted parking standards, active charging points will be provided for all houses with a driveway or garage. Based upon the layout this equates to c.17 dwellings (57%) with on curtilage parking, exceeding the 20% minimum coverage required. As per the standards the remainder of the development will be provided with ducting to allow for the future upgrading of space to enable EV charging.

Off-site Improvements

- 4.34. As part of the access arrangements internal footway connections will be provided to ensure the existing footways along the B2132 Bilsham Road are easily accessible.
- 4.35. As mentioned in **Section 3**, the eastern verge along the B2132 Bilsham Road shows extensive use by walkers, with a well-worn track being in place from Taylors Close down to the allotment access / PRoW 144. An additional 1.5m footway is proposed along the eastern edge of the B2132 Bilsham Road for c.200m, this will be secured under a S278 agreement with the trigger for implementation being secured through the S106 agreement.



Travel Plan

- 4.36. As part of the development proposals a Residential Travel Plan has been developed in line with current WSCC guidance. The overarching objective underpinning the Travel Plan is to reduce single occupancy vehicle trips with a focus upon promoting sustainable lifestyles amongst new residents.
- 4.37. Given the scale of the Phase 1 development area and that most measures within the travel plan are incorporated within the layout design and off-site improvements, it is considered appropriate that a series of triggers be agreed as part of any planning consent.
- 4.38. As such, initially a Travel Plan Coordinator will be appointed to manage the plan, prior to first occupation. The TPC will oversee the distribution of a 'Travel Pack', to all new households within the development which will include relevant information regarding alternative travel in the local area.
- 4.39. The TPC will then seek to implement the monitoring strategy as well as organise baseline traffic and resident travel surveys once 50% (c.70 dwellings) of the whole site is built out. This will ensure that a suitable sample size is available when establishing achievable targets for SOV reduction.
- 4.40. The developer will fund the requirements of the Travel Plan throughout the development period as well as funding the initiatives and the monitoring for the lifetime of the Plan (5 years after occupation).

Summary

- 4.41. The development proposals considered in this section demonstrate that the site can be accessed safely and conveniently by all road users.
- 4.42. The proposed layout is highly permeable for pedestrians and cyclists, with a high-quality built environment that strikes a balance between providing adequate parking and space for cars, whilst not being dominated by them.
- 4.43. Swept path analysis of the access and internal layout show that the development is in accordance with Building Regulations.
- 4.44. The development would also enhance the wider pedestrian network through the provision of a new crossing at the site access and new footway linking with bus stops and the existing footway network.
- 4.45. Moreover, the new footway along with the crossing provision and travel planning measures will all contribute towards maximising the uptake of sustainable modes in accordance with the requirements of the National Planning Policy Framework.
- 4.46. The development therefore complies with the second key transport test of the National Planning Policy Framework, in that it delivers safe and suitable access for all road users.



5.0 Traffic Generation, Distribution and Assignment

- 5.1. As agreed with WSCC, trip generation for the development has been calculated based upon trip rates used at other approved residential development sites in the area. Given the sites context within Yapton and its existing and potential accessibility by sustainable travel modes it is considered that the trip rates shown are robust and suitably represent the likely traffic generation of a development of this scale.
- 5.2. The TRIC's report has been included in **Appendix H**. Table 5.1 summarises the peak hour vehicle trip rates.

Table 5.1: Previously Agreed Vehicle Trip rates

Time Period	Arr.	Dep.	Two-Way
AM Peak	0.14	0.37	0.51
PM Peak	0.31	0.17	0.48

- 5.3. Table 5.2 summarises the resulting traffic generation for the detailed 'Phase 1' element of the application, as well as the anticipated total traffic generation for full development of up to 140 dwellings.

Table 5.2: Vehicle Traffic Generation

Time Period	Arr.	Dep.	Two-Way
	Phase 1 – 30 Dwellings		
AM Peak	4	11	15
PM Peak	9	5	14
	Full Development – 140 Dwellings		
AM Peak	20	52	71
PM Peak	44	23	67

- 5.4. As can be clearly seen, during the peak hours the full development of 140 dwellings would generate less than 2 vehicle movements per minute. It is also noted that the Phase 1 area of the development (30 units) would generate no more than 15 two-way movements during either the AM or PM Peaks.
- 5.5. Based upon the assignment and distribution presented below this would see less than 10 vehicles being added to any local junction and as such the impact of the Phase 1 area is minimal and would not trigger a need for an impact assessment. On this basis the assessment focuses upon the overall impact of the full outline development area.

Development Traffic Distribution and Assignment

- 5.6. To ensure a robust assessment, development traffic has been assigned and distributed onto the local highway network based upon several factors including, Journey to Work Data from the 2011 census (see **Appendix I**) average journey times to key local destinations and assignment modelling used for other approved developments within Yapton.
- 5.7. Table 5.3 provides a summary of the data extracted from NOMIS and the resulting distribution of development trips.

Table 5.3: Distribution of Two-Way Development Trips

Key Destinations Summary	%	AM			PM		
		Arr.	Dep.	2-Way	Arr.	Dep.	2-Way
Arundel	4%	1	2	3	2	1	3
Angmering	2%	0	1	1	1	0	1
Littlehampton	9%	2	5	7	4	2	6
Ford and Yapton	7%	1	3	5	3	2	4
Eastergate / Westergate	12%	2	6	8	5	3	8
Bognor Regis	12%	2	6	9	5	3	8
Chichester	31%	6	16	22	14	7	21
East of Arun	13%	3	7	9	6	3	9
Southeast	10%	2	5	7	4	2	7
Total	100%	20	52	71	44	23	67

5.8. As can be seen the biggest attractor for journey to work trips is Chichester (31%), while other primary attractors include Bognor Regis, Eastergate / Westergate, Littlehampton, other districts to the east of Arun and the rest of the Southeast.

5.9. A review of available routes and average journey times to these destinations generally indicates two potential route choices are available from the site, Table 5.4 summarises along with the associated average peak hour journey times and distances.

Table 5.4 – Trip Route Choice and Avg. Peak House Journey Times by Car

Key Destinations Summary	%	Primary Route	Avg. Journey Time / Length	Secondary Route	Avg. Journey Time
Arundel	4%	B2132 - North End Rd - Ford Lane - Ford Road	13 mins / 8km	B2132 - B2233 - Horsemere Green Lane - Ford Lane	13 mins / 8.3km
Angmering	2%	B2132 – A259 Comet Corner – Station Road	16-35 mins / 3.2km	B2132 – A259 Comet Corner – A284 – A27 – A280	20-35 mins / 19.4km
Littlehampton	9%	B2132 – A259 Comet Corner – A259	10-18 mins / 7-12km	n/a	
Ford and Yapton	7%	B2132 North – B2233 / B2132 Mini Roundabout	2-6 mins / 1– 4.5km	n/a	
Eastergate / Westergate	12%	B2132 - B2233 Barnham Road	8-12 mins / 5-7km	n/a	
Bognor Regis	12%	B2132 - Comet Corner - A259 Worms Lane	9-20 mins / 5.5-12km	n/a	
Chichester	31%	B2132 - B2233 Main Road – Nyton Road - A27	16-22mins / 15.3km	B2132 – A259 Comet Corner - A259 Bognor Road	16-22mins / 15.3km
East of Arun	13%	B2132 - A259 Comet Corner	30 mins + / 15km +	B2132 – B2132 North End Road - A27	30 mins + / 15km +
Southeast	10%	B2132 - B2233 North End Road	45 mins + / 20km+	B2132 - A259 Comet Corner	45 mins + / 20km+

5.10. On this basis it is considered reasonable and robust to assume a 50/50 split in traffic choosing either of these route choices in these instances. The resulting assignment of traffic to local links based upon this is summarised in Table 5.5 and illustrated on turning diagrams in **Appendix J**.



Table 5.5 – Development Traffic Link Assignment

Dev Traffic Link Assignment			Two-Way Dev Traffic Link Assignment	
ID	Name	% Traffic	AM	PM
Link 1	B2132 Bilsham Road North of Access	50%	35	33
Link 2	B2132 Bilsham Road South of Access	50%	36	34
Link 3	A259 Worms Lane	33%	24	22
Link 4	A259 Gravatt's Lane	17%	12	11
Link 5	B2233 Through Yapton	46%	33	31
Link 6	B2132 North End Road to A27	19%	14	13
Link 7	B2233 Main Road to Barnham	27%	19	18
Link 8	B2233 Yapton Road to Horsemere Green Lane	3%	2	2

5.11. Based upon this likely traffic distribution and assignment it is clear that some local junctions would experience an increase of 30 or more two-way vehicle movements during the peak hours, these being:

- B2132 Bilsham Road / B2233 Yapton Road Mini-Roundabout
- B2233 Main Road / B2132 North End Road Mini-Roundabout
- A259 Comet Corner

5.12. On this basis it was agreed with WSCC that these junctions as well as the proposed site access would be assessed as part of the Transport Assessment.

2021 Baseline Traffic Flows

5.13. As agreed with WSCC, peak hour traffic turning counts were utilised from the traffic model submitted as part of the nearby Ford Airfield planning application (F/4/20/OUT) and validated by the ATC survey conducted along the B2132 Bilsham Road.

5.14. These traffic flows included several committed developments within Yapton as well as the Ford site and Barnham as requested by WSCC, these being:

- Land at North End Road – Y/80/16/OUT
- Land East of Tye Lane, Walberton – WS/44/17-175
- Cinders Lane, Yapton – Y/5/17-51
- Stakers Farm, Yapton – Y/44/17-70
- Drove Lane / Bilsham Road Y/91/17 and Y/92/17
- Church Lane, Climping – CM/1/17
- Land South of Barnham Station - BN/142/20/OUT
- Land at Ford Airfield, Ford – F/4/20/OUT

5.15. In addition to these 'committed' flows, the future flows include background growth factors up to 2031 to account for development further afield. Table 4.7 summarises the factors used.

Table 4.7 – TEMPRO Growth Factors

Time Period	AM	PM
2018-2021	1.0103	1.0071
2018 - 2031	1.0293	1.0233

5.16. The traffic turning movements associated with the baseline and future scenarios have been included in **Appendix K**.



6.0 Development Impact Assessment

- 6.1. Based upon the trip generation, distribution and assignment of development traffic and discussions with WSCC Highways, the following scenarios have been assessed to ensure a full and robust assessment of the proposals. These being:
- 2021 Base
 - 2021 Base + Development
 - 2021 Base + Ford Airfield
 - 2021 Base + Ford Airfield + Development
 - 2031 Future Base
 - 2031 Future Base + Ford Airfield + Development
- 6.2. The 2021 Base, taken from the Ford Airfield application, already includes all committed development making up the background growth in the area for at least the next five to ten years, as well as TEMPRO growth factors to account for background development in areas further afield.
- 6.3. As the development affects the A259, part of the WSCC Major Road Network, a 2031 assessment has also been undertaken accounting for allocated growth to the end of the local plan.
- 6.4. WSCC also requested that as the Ford Airfield application is not yet approved, the assessment should include scenarios with and without the traffic generated by that proposed development as part of this application.
- 6.5. The capacity assessments have been undertaken using the JUNCTIONS 10 software, with the full capacity output report being included in **Appendix L**.

Proposed Site Access

- 6.6. Table 6.1 summarises the capacity results for the proposed site access arrangement in the end state scenario i.e. 2031 Base + Ford + Development, while Tables 6.2 – 6.5 summarise the results of the capacity assessments for the off-site locations identified and agreed with WSCC.

Table 6.1– Proposed Site Access

Arm	AM Peak			PM Peak		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
	2031 Base + Ford + Development					
Site Access	0	8	0.12	1	9	0.06
B2132 Bilsham Road	0	8	0.02	1	8	0.06

- 6.7. As can be clearly seen the proposed access arrangements operate well within capacity and will not result in the formation of queues along the B2132 Bilsham Road. On this basis it is considered the form of the proposed access (as a simple priority junction) is an appropriate and safe arrangement for the development.

B2132 Bilsham Road / B2233 Main Road Mini-Roundabout

- 6.8. As can be seen in Table 6.2, the existing mini roundabout operates above maximum capacity on the B2132 Bilsham Road arm during the AM peak in the 2021 Base scenario. This issue is compounded as additional traffic is added to the network either by proposed development or background growth. It is noted however that the junction still operates within capacity (albeit above optimum capacity) up to 2031 with all committed and proposed development in the PM peak.

Table 6.2– B2132 Bilsham Road / B2233 Main Road Mini-Roundabout

Arm	AM Peak			PM Peak		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
2021 Base						
B2233 Yapton Road	2	14	0.69	1	12	0.57
B2132 Bilsham Road	47	259	1.14	1	13	0.51
B2233 Main Road	1	8	0.52	5	24	0.85
2021 Base + Development						
B2233 Yapton Road	2	15	0.70	1	12	0.59
B2132 Bilsham Road	61	349	1.20	1	13	0.54
B2233 Main Road	1	8	0.52	6	27	0.87
2021 Base + Ford						
B2233 Yapton Road	4	22	0.80	2	14	0.63
B2132 Bilsham Road	72	455	1.26	1	15	0.58
B2233 Main Road	1	8	0.56	9	37	0.91
2021 Base + Ford + Development						
B2233 Yapton Road	4	23	0.81	2	14	0.64
B2132 Bilsham Road	89	574	1.32	2	16	0.60
B2233 Main Road	1	9	0.57	15	60	0.97
2031 Base						
B2233 Yapton Road	2	15	0.71	1	12	0.58
B2132 Bilsham Road	55	304	1.18	1	13	0.52
B2233 Main Road	1	8	0.52	6	25	0.86
2031 Base + Ford + Development						
B2233 Yapton Road	4	25	0.82	2	15	0.65
B2132 Bilsham Road	99	647	1.35	2	16	0.61
B2233 Main Road	1	9	0.58	18	69	0.98

- 6.9. Based upon this it is reasonable to conclude that the junction operates within capacity for most of the day, with the AM peak hour presenting a bottleneck resulting in a temporary capacity issue that otherwise operates to a satisfactory level.
- 6.10. There is scope for a very minor improvement in this location comprising provision of a 1 lane plus flare entry allowing two vehicles to wait at the giveaway line, **Table 6.3** summarises.

Table 6.3– B2132 Bilsham Road / B2233 Main Road Mini-Roundabout Minor Flare

Improvement

Arm	AM Peak			PM Peak		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
2021 Base + Development						
B2233 Yapton Road	2	14	0.68	1	12	0.58
B2132 Bilsham Road	45	237	1.13	1	11	0.50
B2233 Main Road	1	8	0.52	6	26	0.86



- 6.11. As can be seen this minor improvement would fully mitigate the impact of the development (140 dwellings) and represents a better performance than the 2021 Base scenario. However, it would still operate above capacity.
- 6.12. It is noted that the Ford Airfield development (although not yet approved) includes a comprehensive mitigation scheme in this location that results in a significant improvement in its operation and ensures the junction operates with plenty of spare capacity up to the end of the Local Plan (See Table 6.6).
- 6.13. It is therefore reasonable to conclude that the theoretical '+ Ford' scenarios would never actually occur as they would either be mitigated against, or the Ford airfield development would not progress. On this basis the demonstratable impact of the proposed development is very minimal and does not result in a 'severe' impact.
- 6.14. As such, it is considered reasonable to conclude that a piecemeal and abortive approach to improving the junction would be undesirable especially as the impact from 140 units is minimal, however the impact from the development can be mitigated via CIL in the event the Ford development is delayed or withdrawn.

B2233 Main Road / B2132 North End Road Mini-Roundabout

- 6.15. As can be seen, the B2233 Main Road / B2132 North End Road Mini-Roundabout already operates close to maximum capacity in the AM Peak and above optimum capacity (0.85 RFC) in the PM peak.

Table 6.4– B2233 Main Road / B2132 North End Road Mini-Roundabout

Arm	AM Peak			PM Peak		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
2021 Base						
North End Road	1	10	0.35	6	45	0.87
B2233 Main Road East	10	41	0.93	1	6	0.47
B2233 Main Road West	2	13	0.62	1	9	0.55
2021 Base + Development						
North End Road	1	10	0.36	7	53	0.90
B2233 Main Road East	14	57	0.96	1	7	0.48
B2233 Main Road West	2	14	0.63	1	10	0.56
2021 Base + Ford						
North End Road	1	13	0.51	23	145	1.04
B2233 Main Road East	38	121	1.05	1	8	0.55
B2233 Main Road West	2	16	0.69	2	14	0.69
2021 Base + Ford + Development						
North End Road	1	13	0.52	29	174	1.07
B2233 Main Road East	49	149	1.07	1	8	0.56
B2233 Main Road West	2	17	0.70	2	15	0.71
2031 Base						
North End Road	1	10	0.36	36	50	0.89
B2233 Main Road East	12	48	0.95	1	7	0.47
B2233 Main Road West	2	14	0.63	1	9	0.56
2031 Base + Ford + Development						
North End Road	1	14	0.53	33	194	1.09
B2233 Main Road East	57	170	1.09	1	8	0.57
B2233 Main Road West	2	17	0.71	2	15	0.72



- 6.16. Given the limited level of capacity available, it is expected that any development would further impact this existing situation. However as can be seen the impact of the proposed development does not result in the junction operating above capacity (maximum 0.96 RFC AM / 0.90 RFC PM) factoring in the committed development and background growth in the 2021 Base + Development scenario.
- 6.17. It is also noted that this impact is only marginal compared to the 2031 Base scenario. On this basis it is considered that the development impact in this location would not be 'severe'.

A259 / B2132 Bilsham Road (Comet Corner)

- 6.18. As shown in Table 6.5 the Comet Corner junction is shown to be already operating well above capacity and requires improvements.

Table 6.5– A259 / B2132 Bilsham Road (Comet Corner)

Arm	AM Peak			PM Peak		
	Queue	Delay (min)	RFC	Queue	Delay (min)	RFC
2021 Base						
B2132 Yapton Road	85	>15	4.19	85	>15	>5
A259 Grevatt's Lane	0	0.25	0.07	0	0.30	0.22
B2132 Bilsham Road	98	>15	3.12	147	>15	>5
A259 Worms Lane	0	0.18	0.13	0	0.28	0.29
2021 Base + Development						
B2132 Yapton Road	98	>15	>5	90	>15	>5
A259 Grevatt's Lane	0	0.25	0.10	0	0.33	0.27
B2132 Bilsham Road	118	>15	3.56	159	>15	>5
A259 Worms Lane	0	0.18	0.14	0	0.30	0.31
2021 Base + Ford						
B2132 Yapton Road	143	>15	>5	105	>15	>5
A259 Grevatt's Lane	0	0.28	0.08	0	0.33	0.27
B2132 Bilsham Road	160	>15	>5	188	>15	>5
A259 Worms Lane	0	0.21	0.15	0	0.30	0.31
2021 Base + Ford + Development						
B2132 Yapton Road	161	>15	>5	107	>15	>5
A259 Grevatt's Lane	0	0.17	0.11	0	0.22	0.31
B2132 Bilsham Road	186	>15	>5	201	>15	>5
A259 Worms Lane	0	0.14	0.16	1	0.21	0.36
2031 Base						
B2132 Yapton Road	100	>15	>5	200	>15	>5
A259 Grevatt's Lane	0	0.27	0.08	0	0.32	0.23
B2132 Bilsham Road	113	>15	>5	195	>15	>5
A259 Worms Lane	0	0.18	0.14	0	0.30	0.31
2031 Base + Ford + Development						
B2132 Yapton Road	180	>15	>5	111	>15	>5
A259 Grevatt's Lane	0	0.19	0.10	0	0.23	0.30
B2132 Bilsham Road	208	>15	>5	214	>15	>5
A259 Worms Lane	0	0.15	0.17	1	0.23	0.37

- 6.19. It should be noted that as the results are significantly above an RFC of 1 the queue and delay prediction calculations provided by Junctions 10 should be treated with caution, as they tend to exponentially increase and are therefore not reliable indications of the actual future operational condition of the junction.



- 6.20. It is noted however, that the mainline arms along the A259 remain clear in all scenarios with queues being confined to the minor arm approaches. As such the impact upon the Major Road Network itself can be reasonably considered to be only marginal as traffic remains free flowing through the junction up to the end of the local plan.
- 6.21. WSCC have indicated that additional works at the junction are programmed soon, which are primarily to improve safety, however a meaningful scheme to improve capacity is yet to be investigated.
- 6.22. While a piecemeal mitigation scheme could potentially be implemented to accommodate the direct impact of the proposed development, it has been indicated by WSCC that the preferred approach is for the delivery of a step change improvement in the form of a new roundabout junction.
- 6.23. Given that proportionally, the impact of the proposed development upon the existing and future operation of the junction is minimal, and that under NPPF is only liable to ensure impact directly created by the development is less than 'severe', it is reasonable to conclude that as a standalone development the provision of the preferred improvement scheme (i.e. a large roundabout) of the scale desired by WSCC is well beyond the scope of the proposals.
- 6.24. It is of course recognised however that a contribution towards such an improvement scheme in this location would be expected; delivered by way of a Section 106 agreement as part of any planning consent.

Ford Airfield Mitigation Sensitivity Testing

- 6.25. While the Ford Airfield application is not yet determined, as an allocated development site it is a key part of Arun Local Plan up to 2031, delivering a large proportion of much needed housing as well as a new secondary school and other employment uses.
- 6.26. The Ford proposals set out a wide range of improvements towards the local highway network, part of which includes mitigation measures at the three junctions assessed as part of this application. These comprise upgrading the two mini-roundabouts within Yapton to 20m ICD compact roundabouts, and the signalisation of Comet Corner. The scheme drawings have been included in **Appendix M**.
- 6.27. At the request of WSCC, these mitigation schemes have also been assessed as part of this application to determine the likely impact of the development by the end of the local plan. Tables 6.6 - 6.8 summarises the capacity results, while the full capacity assessment report can also be found in **Appendix M**.

Table 6.6– B2132 Bilsham Road / B2233 Main Road Ford Mitigation Scheme

Arm	AM Peak			PM Peak		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
	2031 Base + Ford Airfield + Development					
B2233 Yapton Road	1	7	0.56	1	6	0.42
B2132 Bilsham Road	1	7	0.57	0	4	0.27
B2233 Main Road	1	5	0.46	3	12	0.76

- 6.28. The proposed compact roundabout scheme in this location operates with plenty of spare capacity up to the end of the local plan in 2031, with the proposed development having only a very minor impact upon its future operation.



Table 6.7 – B2233 Main Road / B2132 North End Road Ford Mitigation Scheme

Arm	AM Peak			PM Peak		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
	2031 Base + Ford Airfield + Development					
North End Road	0	5	0.28	1	9	0.59
B2233 Main Road East	3	10	0.76	1	4	0.41
B2233 Main Road West	1	7	0.51	1	6	0.51

- 6.29. As can be seen the proposed compact roundabout scheme will operate with plenty of spare capacity up to the end of the local plan and result in a net reduction in queue lengths and delay compared to the existing junction arrangement.

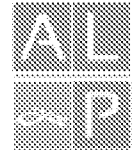
Comet Corner Mitigation Measures

- 6.30. As previously stated, the Ford Airfield Application also presented a potential mitigation scheme in the form of a four-arm signalised crossing at Comet Corner.
- 6.31. A full LINSIG model of the scheme is unavailable, however the capacity assessment results reported within the Ford Airfield application are summarised below in Table 6.8.

Table 6.8 – A259 / B2132 Bilsham Road (Comet Corner) Mitigation Scheme

Arm	AM Peak			PM Peak		
	Queue	Delay (s)	%SAT	Queue	Delay (s)	%SAT
	2031 Base + Ford Airfield					
A259 Grevatt's Lane	21	32	85.1%	46	77	100.3%
B2132 Yapton Road	7	54	73.2%	4	49	54.0%
A259 Worms Lane	28	57	94.7%	36	44	97.2%
B2132 Bilsham Road	12	95	93.2%	13	130	97.3%

- 6.32. As can be seen the mitigation measures proposed as part of the Ford Airfield scheme at Comet Corner will serve to significantly improve the capacity and safety of the junction, although it will operate at or very close to maximum capacity on most arms. This is in part due to the volume of traffic travelling along the A259 during the peak hours.
- 6.33. However, given the very minor level of traffic expected to navigate south from the proposed development, it is reasonable to assume that the impact would remain minor. It is also worth noting that as a signal arrangement the flow of traffic on all arms is controllable and could be adjusted according to demand in real time while also being significantly safer.
- 6.34. It has been made clear that a signalised improvement is not WSCC preferred approach, however such a scheme could still be considered a step change improvement compared to the existing arrangements.
- 6.35. Given that the development impact upon the existing and potential improvement scheme at Comet Corner is proportionally very minor compared to that of the expected growth in the area up to the end of the local plan, it is expected that this can be mitigated as part of the CIL payment.



7.0 Summary and Conclusion

- 7.1. This Transport Assessment has been prepared in support of a planning application for a proposed development of up to 140 dwellings on land west of Bilsham Road, Yapton.
- 7.2. Access to the site is to be taken from a simple priority-controlled T-junction arrangement off the B2132 Bilsham Road, along with public realm improvements including a new 1.5m footway from Taylors Close to the allotments access and Public Right of Way 144, new crossing points and a traffic speed mitigation scheme in the form of renewal of the existing village gateway and a new Vehicle Activated speed limit reminder sign.
- 7.3. The access has shown to provide sufficient capacity for the development proposals and deliver a safe means of access in terms of achieving appropriate visibility and allowing vehicles enough space to turn into and out of the site.

Sustainability

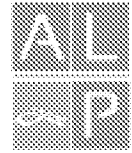
- 7.4. An assessment of the sites accessibility by sustainable travel modes shows that a range of facilities are available within suitable walking and cycling distances, including Yapton Primary School and Village centre.
- 7.5. In addition, frequent bus services operating c.2-3 journeys per hour are available from stops located near the site frontage (well within 400m of all areas of the site). These allow for safe and convenient access to local schools, Littlehampton and Bognor Regis town centres and railway station.
- 7.6. As such it is considered the site is ideal for a sustainable residential development.

Traffic Impact

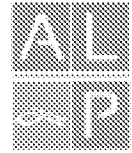
- 7.7. Capacity assessments show the development will have a comparatively minor impact upon the local highway network with mitigation measures identified that will ensure any impact is less than severe even if the more holistic improvement schemes proposed as part of the Ford Airfield application are delayed.
- 7.8. With the mitigation measures proposed as part of the Ford Airfield Development, it will provide a situation to the end of the Plan period in 2031, whereby all three junctions continue to operate within their theoretical capacity.

Conclusion

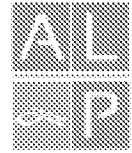
- 7.9. The development has been clearly shown to accord with the three key transport tests of the NPPF, these being:
 - Appropriate opportunities to promote sustainable transport modes have been shown to be able to be taken up;
 - Safe and suitable access to the site has shown to be deliverable for all users; and
 - The development does not have a severe impact on the operation of the local highway network and any cumulative impact could be mitigated through appropriate contributions.



- 7.10. Therefore, based on this assessment, is considered that there are no reasons from a highways or transport perspective why the development proposals should not be approved.



Appendices



Appendix A - Figures and Drawings

A361-001 P4 – Proposed Site Access

A361-002 P3 – Swept Path Analysis

A361 – Figure 1 Site Accessibility



KEY	
	APPLICATION BOUNDARY
	2.4m X 73m VISIBILITY PLAYS BASED UPON MEASURED 85th % SPEEDS

FOOTWAY TO THE NORTH OF BUS STOP TO BE
PROVIDED BY APPROVED DEVELOPMENT
(Y/91/17/OUT) AS PER ODYSSEY DRAWING
14-111/201

PROPOSED 2m FOOTWAY TO
CONNECT WITH EXISTING BUS STOP

PROPOSED CROSSING POINT

PROPOSED 6m CARRIAGEWAY

PROPOSED CROSSING POINT

PROVISION OF A PERMANENT LAMP
POST MOUNTED VEHICLE ACTIVATED
SPEED LIMIT REMINDER SIGN TO HELP
REDUCE VEHICLE SPEEDS

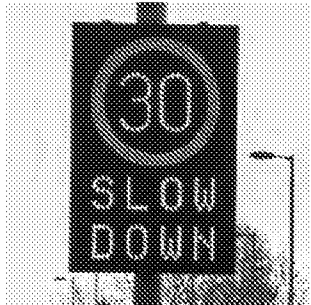
PROPOSED CROSSING POINT

PROPOSED 2m FOOTWAY

RENEW EXISTING ROAD
MARKINGS AND SIGNAGE
TO HELP REDUCE VEHICLE
SPEEDS

PROPOSED CROSSING POINT

PROPOSED 1.5m FOOTWAY (SUBJECT TO TREE
SURVEY AND ROOT IMPACT ASSESSMENT) TO
ENSURE SAFE CONNECTION WITH ALLOTMENTS
AND PUBLIC FOOTPATH 144



P4	12.21	MINOR FOOTWAY AMENDMENTS	TDM	NB
P3	12.21	MINOR AMENDMENTS	TDM	NB
P2	11.21	ACCESS WORKS RED LINE INCLUDED	AG	NB
P1	09.21	FIRST ISSUE	TDM	NB

Rev	Date	Description	Drawn	Checked
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ABLEY LETCHFORD

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Client

Project
**LAND WEST OF B2132
BILSHAM ROAD, YAPTON**

Title
**PROPOSED SITE ACCESS
ARRANGEMENTS**

Status
PLANNING

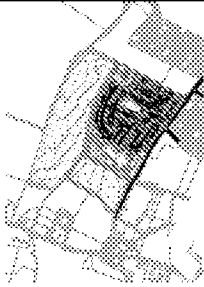
Scale	Date	Drawn	Checked
1:500 @ A1	SEPT 2021	TDM	NB

Drawing No	Revision
A361-001	P4



Prepared by: Surveyor
Checked by: Engineer
Date: 2023-01-12
Drawing No: A361-002

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- KEY**
- DEVELOPMENT SITE AREA
 - DETAILED PHASE 1 SITE AREA

Large Refuse Vehicle (4 axle)	
Overall length	11.800m
Overall width	2.500m
Overall body height	3.751m
Min body ground clearance	0.100m
Track width	2.000m
Lock to lock time	6.000m
Wall to wall turning radius	11.330m

Standard Design Vehicle (SDV)	
Overall length	4.800m
Overall width	2.500m
Overall body height	2.000m
Min body ground clearance	0.100m
Track width	2.000m
Lock to lock time	2.000m
Wall to wall turning radius	6.000m

P3	12/21	LAYOUT UPDATED	CB	NB
P2	12/21	LAYOUT UPDATED	TDM	NB
P1	12/21	FIRST ISSUE	TDM	NB
Rev	Date	Description	Drawn	Checked

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LANDLINK

Project:
**LAND WEST OF B2132
BILSHAM ROAD, YAPTON**

Title:
SWEPT PATH ANALYSIS

Status:
PRELIMINARY

Scale	Date	Drawn	Checked
1:500 @ A2	DEC 2021	TDM	NB
Drawing No	Revision		
A361-002	P3		



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KEY	
	SITE BOUNDARY
	EDUCATION
	RETAIL
	LEISURE
	HEALTH
	PUBLIC RIGHT OF WAY
	NATIONAL CYCLE ROUTE
	LOCAL CYCLE ROUTE

P2	12.21	REDLINE UPDATED	TDM	NB
P1	09.21	FIRST ISSUE	TDM	NB
Rev	Date	Description	Drawn	Checked



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Client

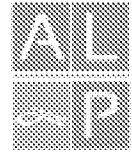
LANDLINK ESTATES

Project
LAND WEST OF BILSHAM
ROAD, YAPTON

Title
SITE ACCESSIBILITY PLAN

Status
FOR INFORMATION

Scale	Date	Drawn	Checked
NTS @ A3	SEPT 2021	TDM	NB
Drawing No A361 - FIGURE 1			Revision P2



Appendix B - Scoping Note and WSCC Pre Application Advice

LAND AT LAMBS FIELD, YAPTON

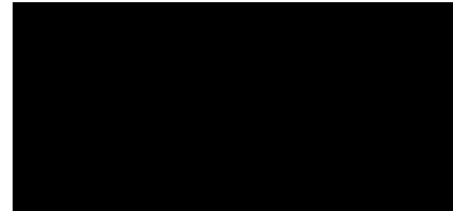
HIGHWAYS SCOPING NOTE

LANDLINK ESTATES

30 JULY 2021



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Quality Management:

Prepared by:	T. Moloney
Authorised by:	N. Billingham
Date:	30 July 2021
Document Reference:	A361-R001

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3.0	Development Proposals	6
4.0	Traffic Impact Assessment.....	8
5.0	Summary.....	12

Appendices

Appendix A – Proposed Access Drawings and Development Flow Diagram

Appendix B – PRoW Map

Appendix C – Approved Access to North

Appendix D – TRICS Report

Appendix E – 2011 Census Data

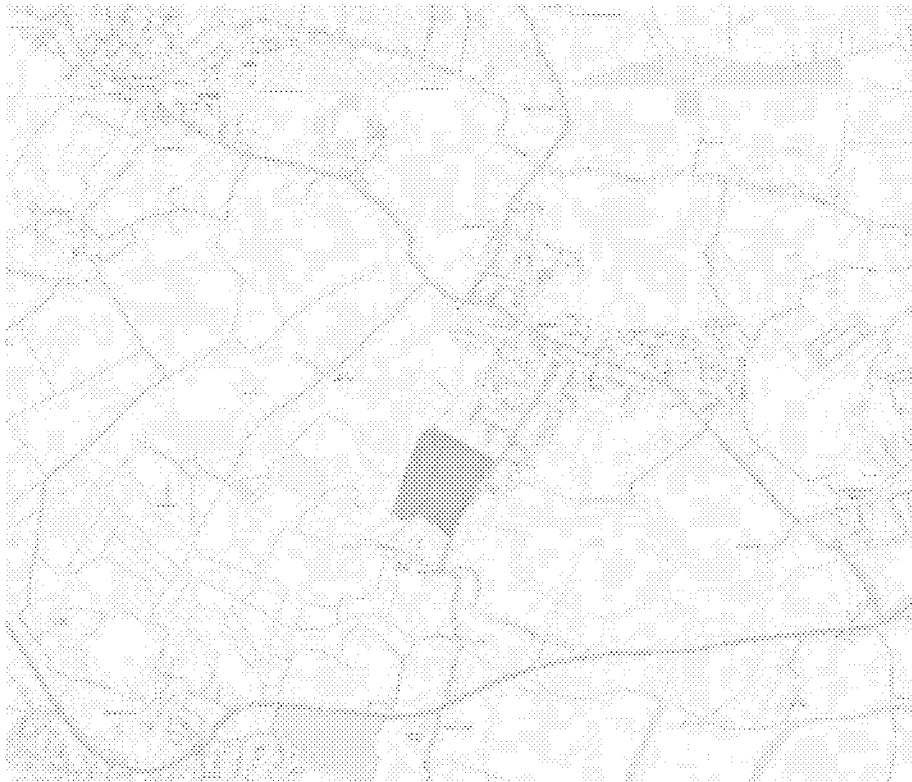
Appendix F –Ford Airfield Traffic Flows



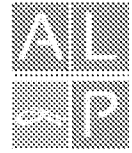
1.0 Introduction

- 1.1. This Scoping Note has been prepared to agree an appropriate Transport Assessment (TA) methodology and study area for a proposed development of c.200 dwellings on Land at Lamb Field, Yapton.
- 1.2. The proposals will comprise a hybrid planning application, with matters regarding the access, principle internal roads and c.30-50 units being in detail, with the remainder of the site being in outline and all other matters reserved.
- 1.3. Highway scoping advice is being sought from both West Sussex County Council (WSCC) and Highways England (HE) following initial planning advice received by the applicant. As such this report provides information relevant to:
 - The proposed site access arrangements (See Drawings in **Appendix A**)
 - Sustainable accessibility
 - Pedestrian and cyclist connectivity and infrastructure provisions
 - trip generation, assignment, and distribution
 - the development impact study area.

Site Context



- 1.4. The development site is located along the B2132 Bilsham Road within the southern area of Yapton. The site comprises c.9.5ha of agricultural land, with an existing field access directly opposite Taylors Close.
Site Location Plan



- 1.5. It is noted that the site is located directly south of the 550 units which form the SD7 allocation site (Land East of Drove Lane and Land at Bilsham Road) (Y/92/17/OUT & Y/91/17/OUT), both of which are subject to a reserved matters application.

Planning Policy Context

- 1.6. The development site is located within the Parish of Yapton and the local authority boundary of Arun District Council.
- 1.7. The development proposals take account of several planning policy documents including:
- National Planning Policy Framework (NPPF) - July 2021
 - Arun District Council Local Plan 2011 – 2031
 - Arun Parking Standards – January 2020
 - Arun District Design Guide – SPD January 2021
 - West Sussex County Council Local Transport Plan 2011 – 2026 (LTP3)
 - Yapton Neighbourhood Plan 2014 - 2029
- 1.8. The site is not allocated for development within the Local or Neighbourhood Plans (which is out of date and currently subject to review).
- 1.9. However, the scale and proximity to existing and permitted residential development as well as its existing and potential connectivity to the local highway, cycle and footway network and bus services are such that it lends itself to being an ideal place for additional dwellings to be delivered to meet local housing requirements.



2.0 Site Location and Accessibility

Sustainability and Accessibility

- 2.1. Key to all new development is accessibility to local facilities and amenities by sustainable travel modes. The site is c.1.2km from the centre of Yapton and is within 5km of both Bognor Regis and Littlehampton.
- 2.2. The site fronts onto the B2132 Bilsham Road along its eastern boundary, while to the north is permitted development. To the south and west are agricultural fields.
- 2.3. The nearest bus stops are within 400m of all areas of the site, which will be accessible through the provision of footway along the site frontage.
- 2.4. The site has several Public Rights of Way (PRoW) in close proximity. The routes provide links into and around Yapton for both local travel and leisure purposes. A copy of the PRoW record has been included in **Appendix B**.
- 2.5. In addition, the existing highway network features extensive footway provision allowing for full access to all areas of the village.
- 2.6. The access strategy presented within the planning application will demonstrate how footway / cycleway provision connects the site to the existing network as well as delivering improvements where required.

Public Transport Provision

- 2.7. The nearest bus stops are located on the B2132 Bilsham Road and are within 400m of the furthest part of the site. These stops provide shelters as well as real-time journey information updates.
- 2.8. The existing No.700 service generally operates 2-3 services per hour Monday – Friday with up to 4 services per hour during the day at weekends.
- 2.9. The route provides access between Littlehampton, Bognor Regis, Chichester, Emsworth, Havant and Portsmouth and is thus a significant sustainable mode of transport available for use by the development.
- 2.10. The nearest railway station is located in Barnham, a 3.7km cycle journey (12-minutes) from the site. Rail journeys from Barnham give direct access to a range of destinations further afield including London Victoria, Gatwick, Brighton, Portsmouth and Southampton with c. 2-4 train services being available per hour.

Walking and Cycling

- 2.11. As previously highlighted the site is ideally located to connect with the existing footway and cycling networks in and around Yapton, and adjacent to other committed residential development.
- 2.12. Current walking design guidance and evidence in the National Travel Survey suggest that the majority of walking journeys are generally no more than a mile (1.6km) with some facilities such as schools attracting longer walking journeys of upto 2km.



- 2.13. LTN/120 (July 2020) Cycle Infrastructure Design states *‘Two out of every three personal trips are less than five miles in length – an achievable distance to cycle for most people’*. Five miles equates to 8km and based upon this modern guidance, is considered to be an achievable cycle distance for the majority of people subject to suitable cycling infrastructure and safe routes being available.
- 2.14. Cyclists and walkers will be easily able to access the bus stops and village via new and existing footway along the B2132 Bilsham Road. In addition, the approved developments to the north will deliver a new cycle link connecting the B2132 Bilsham Road with Drove Lane and the B2233 Main Road.
- 2.15. Currently, in order to cycle to Barnham Railway station from Yapton the on-road route follows the B2233 Main Road. However, WSCC have recently taken contributions from other local developments as well as safeguarding land for an off-road Yapton to Barnham cycle link. The site would benefit from the establishment of this link.
- 2.16. The site is within 1km of National Cycle Route 2, running along the A259, between Littlehampton and Bognor Regis. This route was recently upgraded and now features a 3-4m wide shared footway / cycleway for the entire length between the two towns.
- 2.17. Littlehampton, Bognor Regis and Barnham are all within acceptable cycling distance of the site (3.5-7.5km) and taking into account delivered and planned improvements in the area cycling to and from Yapton will become a more attractive and safe option.
- 2.18. It is noted that WSCC Cycle Strategy has identified a potential improvement along the B2132 Bilsham Road (WSCC Walking and Cycling Strategy, ID:126) to connect with the National Cycle Route 2.

Access to local Facilities and Amenities

- 2.19. On the basis of the above, **Table 2.1** identifies existing facilities within acceptable walking (max 2km) and cycling distances (8km) to the development site.

Table 2.1: Local Facilities and Amenities

Facility	Walk / Cycle Distance
Bus Stops	400m
Bilsham Stores	400- 800m
Meadow Croft Surgery	800m
Yapton Village Centre, Village Hall, Co-Op, Butcher, Fish and Chip Shop, Hair Salon	1.2km
Yapton Primary School	1.6km
Barnham Village Centre and Railway Station	3.5km
Elmer Beach	3.5km
Climping Beach	4.8km
Ormiston Six Village Academy and Sports Centre	6.0km
Littlehampton, Lineside Industrial estate, Railway Station, The Littlehampton Academy	5.5-7.5km
Felpham, Bognor Regis, North Bersted, South Bersted	6.0-7.5km

- 2.20. As can be seen there are a number of local amenities that can easily be accessed via walking, as well as other destinations further afield being accessible by bicycle and public transport. As such it is considered that the sustainability of the site can be agreed early on.



- 2.21. Furthermore, as the site is located adjacent to sites with consented residential development and were allocated in the adopted Local Plan, it is evidence that this location has been examined in detail previously as one offering up appropriate sustainable travel opportunities to make it acceptable for residential development.

Highway Safety

- 2.22. A full investigation of Road Traffic Collisions (RTC) for the most recent five year period available will be undertaken within the Transport Assessment. The proposed study area is illustrated below.
- 2.23. An initial review of Personal Injury Accident data from the online WSCC Accident Locations Map reveals no collisions have occurred within 400m of the proposed site access on the B2132 Bilsham Road.
- 2.24. Given that WSCC have planned improvements for the A259 that will improve highway safety as well as capacity, it is proposed that the study area includes for the following areas:
- B2132 Bilsham Road between the site access and B2233 Burndell Road
 - B2233 Burndell Road (between Bilsham Road and North End Road
 - North End Road (between Burndell Road and the Primary School).
- 2.25. This would cover all routes to key local facilities, including the safe route to the Primary School.

Summary

- 2.26. A full review of the existing local conditions will be undertaken as part of the TA, however in summary:
- The site is within acceptable walking distances (400m) of bus stops which in turn have frequent half hourly bus services to key local areas seven days a week.
 - The site is within appropriate walking and cycling distance of a wide range of facilities, amenities, and employment opportunities in Yapton, Littlehampton and Bognor Regis as well as several railway stations.
 - Contributions from the development would enable further enhancements to the footway / cycle network.
- 2.27. On the basis of the above as well as the councils, allocation and granting of permission for other residential developments in Yapton. It is considered that the principle of sustainability can be successfully demonstrated for this proposed site.



3.0 Development Proposals

- 3.1. The proposals are to submit a Hybrid planning application for a residential development of up to c.200 dwellings with matters regarding the access, principle internal roads and c.30-50 units being in detail, with the remainder of the site being in outline and all other matters reserved.

Proposed Access

- 3.2. Vehicular access to the development is proposed to be taken via a new priority controlled arrangement from the B2132 Bilsham Road, 30m north of Taylors Close. ALP drawing **A361-001 P1** illustrates the access arrangements (Appendix A).
- 3.3. The access is reflective of other existing residential access roads for similar scales of development within Yapton. This in addition to being within a 30mph zone is considered an appropriate provision.
- 3.4. A speed survey will be conducted along the site frontage as part of the assessment, however based upon the recently approved access for development to the north (see **Appendix C**) it is expected that visibility splays of less than 90m will be acceptable.
- 3.5. As previously stated, the site has an existing field access directly opposite Taylors Close, which can be retained as an emergency cycle / pedestrian access. In addition, new footway will be provided linking the new access with the existing bus stops along the B2132 Bilsham Road.
- 3.6. The northern boundary of the site abuts an approved development of 250 dwellings, while public footpath 156 runs along the western edge of the site. The development would ensure access to this Right of Way remains open, allowing for free pedestrian movements.

Servicing

- 3.7. As a Hybrid application the internal layout for the first phase of development will be presented in detail with consideration being given towards refuse and emergency vehicle access, including swept path analysis. The principles established will naturally follow through and be applied to the wider outline area.

Car and Cycle Parking

- 3.8. Car and cycle parking will be provided in accordance with ADC parking standards which were adopted in January 2020.
- 3.9. Based upon the zone maps set out in Appendix 2 of the guidance, the site is considered to be within Parking Zone 1 and is subject to the parking standards as summarised in **Table 3.1** below.

Table 3.1: Parking Standards Summary

No. Bedrooms	No. Habitable Rooms	Parking Standard (spaces per unit)
1	1-3	2
2	4	2
3	5-6	2
4+	7+	3

- 3.10. It is noted that the standards allow for garages to be counted as 0.5 of an allocated space if the internal dimensions are a minimum of 6m x 3m.



- 3.11. In addition, unallocated parking spaces will be provided to accommodate visitors at a rate of 0.2 (20%) spaces per unit in accordance with the standards.
- 3.12. Cycle parking will also be provided in accordance with the standards as set out in **Table 3.2** below.

Table 3.2: Parking Standards Summary

Dwelling Type	Dwelling Size	Cycle Provision
House	1 & 2 Bedrooms	1 space
House	3 + Bedrooms	2 spaces
Flat	1 & 2 Bedrooms	1 space
Flat	3 + Bedrooms	1 space

- 3.13. Cycle parking will likely be provided by way of garden sheds, or if included, garages allowing for the safe storage of multiple bicycles per household.

Travel Plan

- 3.14. In line with WSCC current guidance a Residential Travel Plan will be prepared and submitted as part of the planning application.
- 3.15. This will focus upon reducing single occupancy vehicle trips and will work in tandem with improvements identified and proposed as part of the TA to actively promote modal shift amongst residents.



4.0 Traffic Impact Assessment

Traffic Generation

- 4.1. Given the sites proximity to recently approved development of a similar scale in Yapton (250 and 300 units), it is proposed that the trip generation for the development be calculated based upon trip rates from these previously agreed sites.
- 4.2. **Table 4.1** summarises the peak hour vehicle trip rates selected and extracts from the Trip rates for the recently approved developments in Yapton (see extracts in **Appendix D**). **Table 4.2** shows the anticipated traffic generation for a development of no more than 200 dwellings.

Table 4.1: Previously Agreed Vehicle Trip rates

Time Period	Arr.	Dep.	Two-Way
AM Peak	0.141	0.368	0.509
PM Peak	0.313	0.165	0.478
Daily	2.134	2.242	4.376

Table 4.2: Vehicle Traffic Generation 200 Dwellings

Time Period	Arr.	Dep.	Two-Way
AM Peak	28	74	102
PM Peak	63	33	96
Daily	427	448	875

- 4.3. As can be seen during the peak hours the development would generate less than 2 vehicle movements per minute.
- 4.4. Given the sites context in the area and that these proposed trip rates are the same as agreed for other development sites in Yapton along with its existing and potential accessibility by sustainable travel modes. It is considered that the trip rates shown are robust and suitably represent the likely traffic generation of a development of this scale.

Development Traffic Distribution and Assignment

- 4.5. To ensure a robust assessment, development traffic will be distributed and assigned onto the local highway network based upon several factors including, Journey to Work Data from the 2011 census (see **Appendix E**) and average journey times to key local destinations. **Table 4.4** provides a summary of the data extracted from NOMIS and the resulting distribution of development trips.



Table 4.4: Distribution of Two-Way Development Trips

Key Destinations Summary	%	AM			PM		
		Arr.	Dep.	2-Way	Arr.	Dep.	2-Way
Arundel	4%	1	3	4	3	1	4
Angmering	2%	0	1	2	1	1	2
Littlehampton	9%	3	7	10	6	3	9
Ford and Yapton	7%	2	5	7	4	2	6
Eastergate / Westergate	12%	3	9	12	7	4	11
Bognor Regis	12%	3	9	12	8	4	12
Chichester	31%	9	23	32	19	10	30
East of Arun	13%	4	10	13	8	4	13
SE	10%	3	7	10	6	3	9

- 4.6. As can be seen the biggest attractor for journey to work trips is Chichester (31%), while other primary attractors include Bognor Regis, Eastergate / Westergate, Littlehampton, other districts to the east of Arun and the rest of the Southeast.
- 4.7. A review of available routes and average journey times to these destinations generally indicates two potential route choices are available from the site, **Table 4.5** summarises along with the associated average peak hour journey times and distances.

Table 4.5 – Trip Route Choice and Avg. Peak House Journey Times by Car

Key Destinations Summary	%	Primary Route	Avg. Journey Time / Length	Secondary Route	Avg. Journey Time
Arundel	4%	B2132 - North End Rd - Ford Lane - Ford Road	13 mins / 8km	B2132 - B2233 - Horsemere Green Lane - Ford Lane	13 mins / 8.3km
Angmering	2%	B2132 – A259 Comet Corner – Station Road	16-35 mins / 13.2km	B2132 – A259 Comet Corner – A284 – A27 – A280	20-35 mins / 19.4km
Littlehampton	9%	B2132 – A259 Comet Corner – A259	10-18 mins / 7-12km	n/a	
Ford and Yapton	7%	B2132 North – B2233 / B2132 Mini Roundabout	2-6 mins / 1– 4.5km	n/a	
Eastergate / Westergate	12%	B2132 - B2233 Barnham Road	8-12 mins / 5-7km	n/a	
Bognor Regis	12%	B2132 - Comet Corner - A259 Worms Lane	9-20 mins / 5.5-12km	n/a	
Chichester	31%	B2132 - B2233 Main Road – Nyton Road - A27	16-22mins / 15.3km	B2132 – A259 Comet Corner - A259 Bognor Road	16-22mins / 15.3km
East of Arun	13%	B2132 - A259 Comet Corner	30 mins + / 15km +	B2132 – B2132 North End Road - A27	30 mins + / 15km +
SE	10%	B2132 - B2233 North End Road	45 mins + / 20km+	B2132 - A259 Comet Corner	45 mins + / 20km+



- 4.8. On this basis it is considered reasonable and robust to assume a 50/50 split in traffic choosing either of these route choices in these instances. The resulting assignment of traffic to local links based upon this is summarised in **Table 4.6** and illustrated on turning diagrams in **Appendix A**.

Table 4.6 – Development Traffic Link Assignment

Dev Traffic Link Assignment			Two-Way Dev Traffic Link Assignment	
ID	Name	% Traffic	AM	PM
Link 1	B2132 Bilsham Road North of Access	50%	50	47
Link 2	B2132 Bilsham Road South of Access	50%	51	48
Link 3	A259 Worms Lane	33%	34	32
Link 4	A259 Gravatt's Lane	17%	17	16
Link 5	B2233 Through Yapton	46%	47	44
Link 6	B2132 North End Road to A27	19%	20	18
Link 7	B2233 Main Road to Barnham	27%	28	26
Link 8	B2233 Yapton Road to Horsemere Green Lane	3%	3	3

- 4.9. Based upon this likely traffic distribution and assignment it is clear that some local junctions would experience an increase of 30 or more two-way vehicle movements during peak hours, these being:

- B2132 Bilsham Road / B2233 Yapton Road Mini-Roundabout
- B2233 Main Road / B2132 North End Road Mini-Roundabout
- A259 Comet Corner

- 4.10. It is therefore proposed that these junctions be fully assessed as part of the Transport Assessment.

Assessment Scenarios

- 4.11. To ensure a robust assessment the following scenarios will be tested to determine the current and future network capacity and the likely development impact.

- 2021 Base
- 2026 + Committed.
- 2026 Future Base with Development (200 dwellings).

Traffic Baseline and Future Impact Assessment

- 4.12. It is noted that a recent outline planning application was submitted in February 2020 for a major allocated mixed-use development at Ford Airfield including 1500 dwellings (F/7/20/OUT).

- 4.13. The data used within the Transport Assessment for the Ford application included survey data collected in July 2018 and growthed to 2021 to establish a suitable baseline traffic scenario covering a wide area around Yapton.

- 4.14. The traffic flows accounted for in the Ford Site Transport Assessment included all major committed development in the local area, these being:

- Land at North End Road – 100 Dwellings (Y/80/16/OUT)
- Land at Walberton – 175 Dwellings (WA/44/17/OUT)
- Cinders Lane, Yapton – 51 Dwellings (Y/5/17/OUT)
- Stakers Farm – 108 Dwellings (Y/44/17)

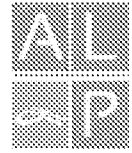


- Land at Bilsham road and Drove Lane - 550 Dwellings (Y/91/17/OUT & Y/92/17/OUT)
 - Church Lane, Climping – 300 Dwellings (CM/1/17/OUT)
- 4.15. Given that the original survey data was collected within the last five years and the unprecedented impact due to the COVID19 pandemic, it is considered reasonable to conclude that the traffic flows submitted as part of the Ford application remain valid and representative of traffic levels in the area.
- 4.16. It is therefore considered appropriate for the traffic flows available to be used for the purposes of assessing the impact of the proposed development at Lamb Field. The traffic flows extracted from the Ford TA are included in **Appendix F**.



5.0 Summary

- 5.1. This Scoping Note has been prepared with a view to agreeing a suitable TA methodology and study area with WSCC Highways regarding the proposed hybrid planning application for a total c.200 dwellings on Land at Lamb Field, Yapton.
- 5.2. As highlighted, the development site is ideally located for sustainable access, with local facilities and amenities being within suitable walking and cycling distance and having good access to public transport provisions. It is considered that a development in this location would integrate well with the existing network.
- 5.3. Also set out is the proposed methodology for assessing the impact such a development would have upon the capacity of local junctions.
- 5.4. Representative trip rates have been provided and based upon the likely traffic distribution and assignment a number of local junctions have been identified for detailed capacity analysis.
- 5.5. In addition, suitable baseline and future traffic flows are readily available from the recently submitted application for land at Ford airfield, which provide a robust and representative traffic model from which suitable traffic turning movements can be derived for the purposes of this application.
- 5.6. It is hoped that the proposed scope and methodology for preparing the Transport Assessment are acceptable to all parties. We do however welcome any comments at the earliest opportunity to address, where possible, any issues pre-submission.

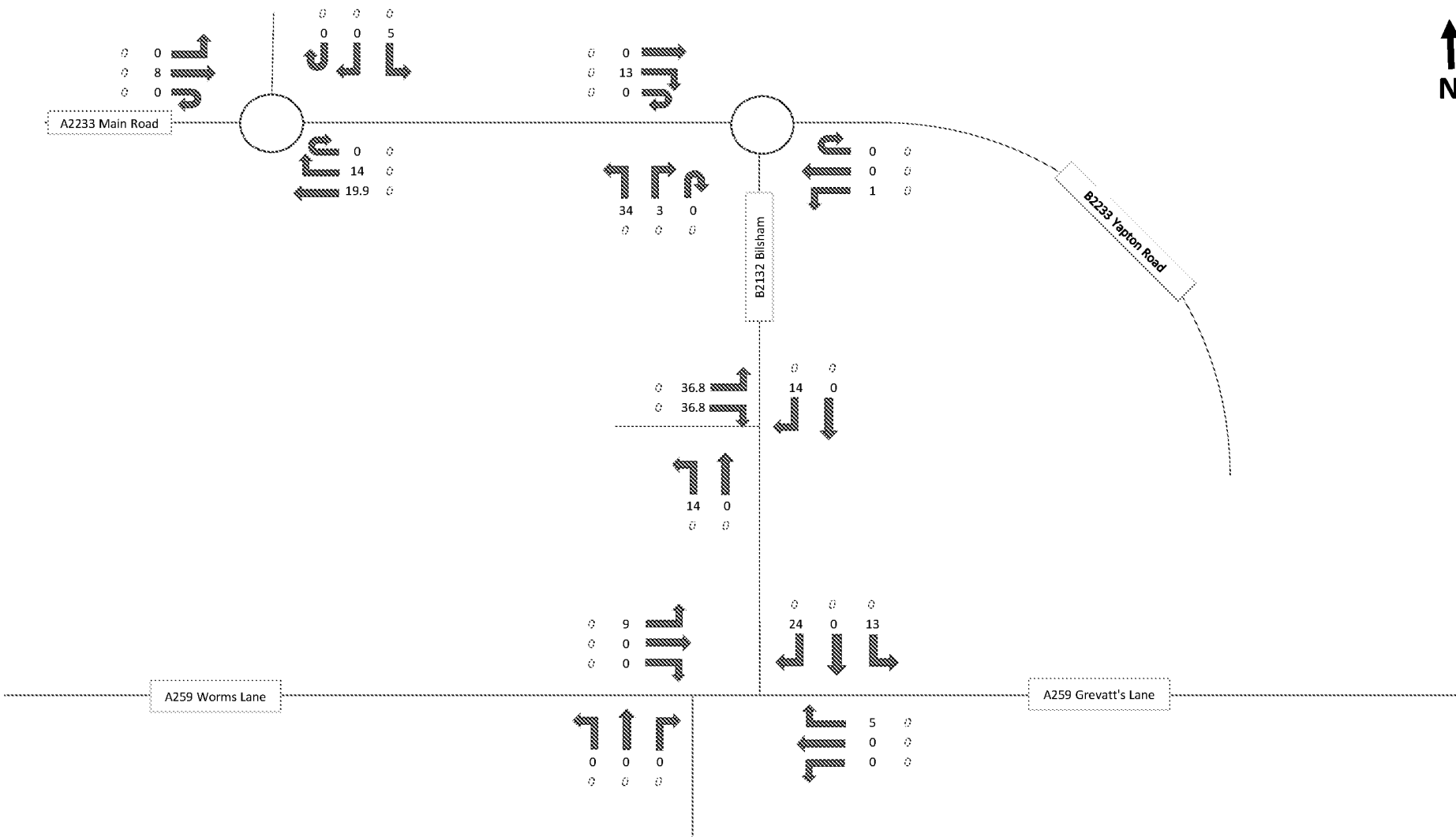


Appendices

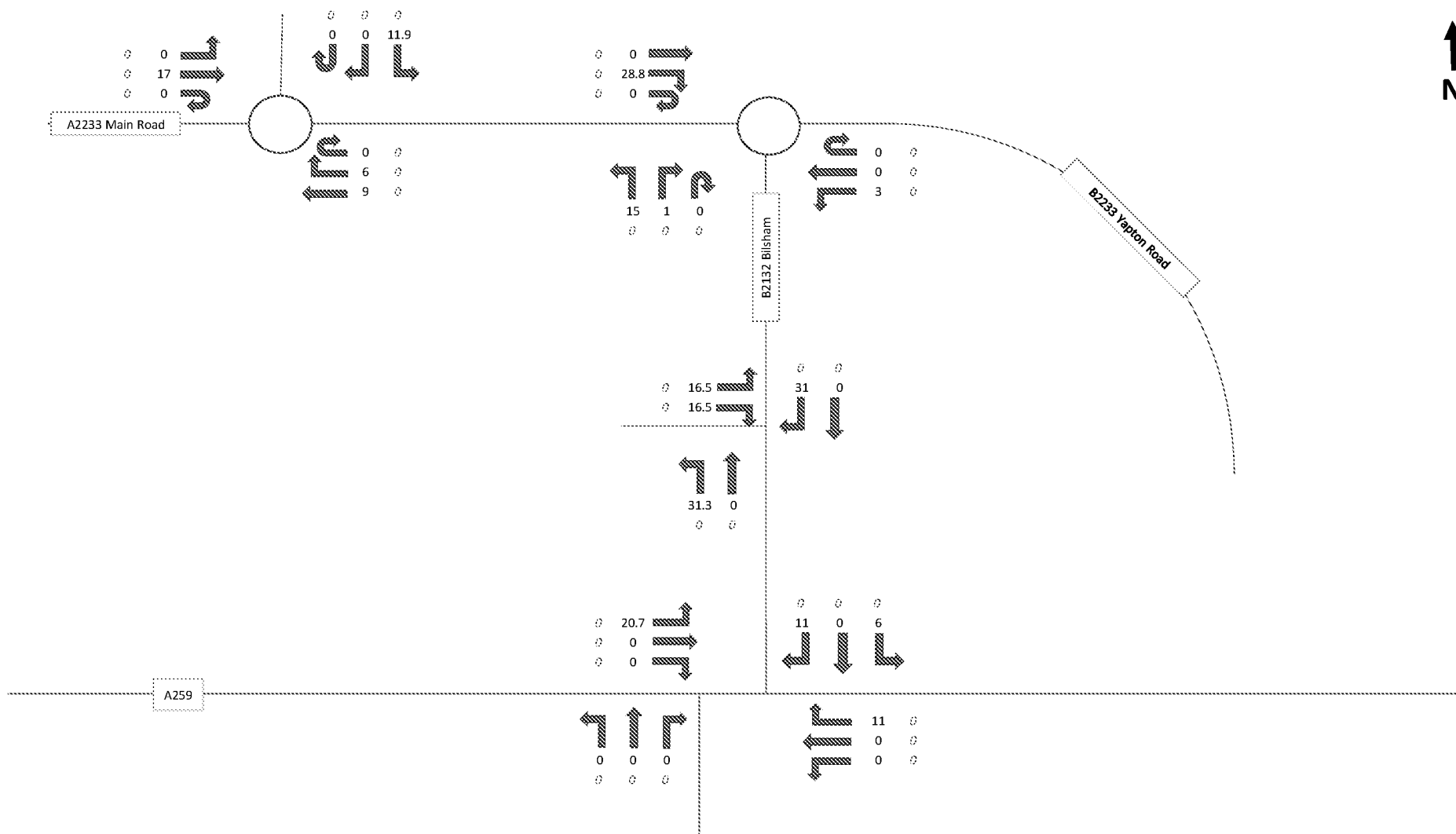


Appendix A – Proposed Access Drawings and Development

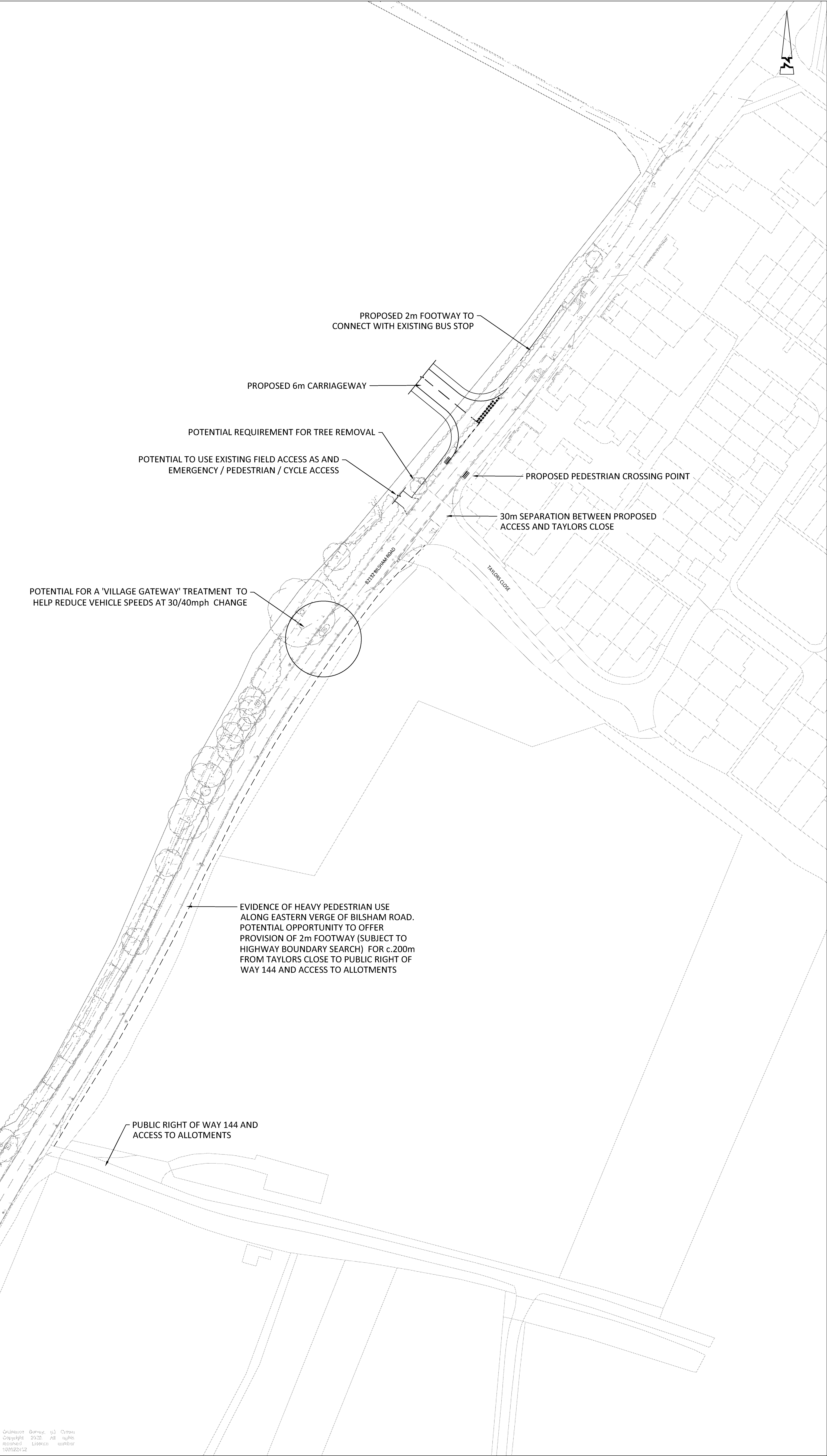
Flow Diagram



Job No A361	Project : Lambfield, Yapton
Date June 2021	Title : AM Development Flows
Drawn TDM	Figure No : 1



Job No A361	Project : Lambfield, Yapton
Date June 2021	Title : PM Development Flows
Drawn TDM	Figure No : 2



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KEY
SITE BOUNDARY
2.4m X 59m VISIBILITY PLAYS BASED UPON APPROVED ACCESS DRAWING FOR LAND TO NORTH OF SITE (APP NO: Y91217001) SPEED SURVEY FROM THIS APPLICATION SHOW 85TH SPEEDS OF c.35-36mph

PROPOSED 2m FOOTWAY TO CONNECT WITH EXISTING BUS STOP

PROPOSED 6m CARRIAGEWAY

POTENTIAL REQUIREMENT FOR TREE REMOVAL

POTENTIAL TO USE EXISTING FIELD ACCESS AS AND EMERGENCY / PEDESTRIAN / CYCLE ACCESS

PROPOSED PEDESTRIAN CROSSING POINT

30m SEPARATION BETWEEN PROPOSED ACCESS AND TAYLORS CLOSE

POTENTIAL FOR A 'VILLAGE GATEWAY' TREATMENT TO HELP REDUCE VEHICLE SPEEDS AT 30/40mph CHANGE

EVIDENCE OF HEAVY PEDESTRIAN USE ALONG EASTERN VERGE OF BILSHAM ROAD. POTENTIAL OPPORTUNITY TO OFFER PROVISION OF 2m FOOTWAY (SUBJECT TO HIGHWAY BOUNDARY SEARCH) FOR c.200m FROM TAYLORS CLOSE TO PUBLIC RIGHT OF WAY 144 AND ACCESS TO ALLOTMENTS

PUBLIC RIGHT OF WAY 144 AND ACCESS TO ALLOTMENTS

P1	06.21	FIRST ISSUE	TDM	NB
Rev	Date	Description	Drawn	Checked

AL

P

ABLEY LETCHFORD

PARTNERSHIP

Consulting Engineers

3 Tealgate, Charnham Park

Hungerford, Berkshire RG12 0YT

www.alpce.co.uk Tel: 01488 684390

Client

LANDLINK ESTATES

Project

LAND AT LAMB FIELD, YAPTON

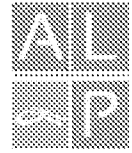
Title

POTENTIAL SITE ACCESS ARRANGEMENTS

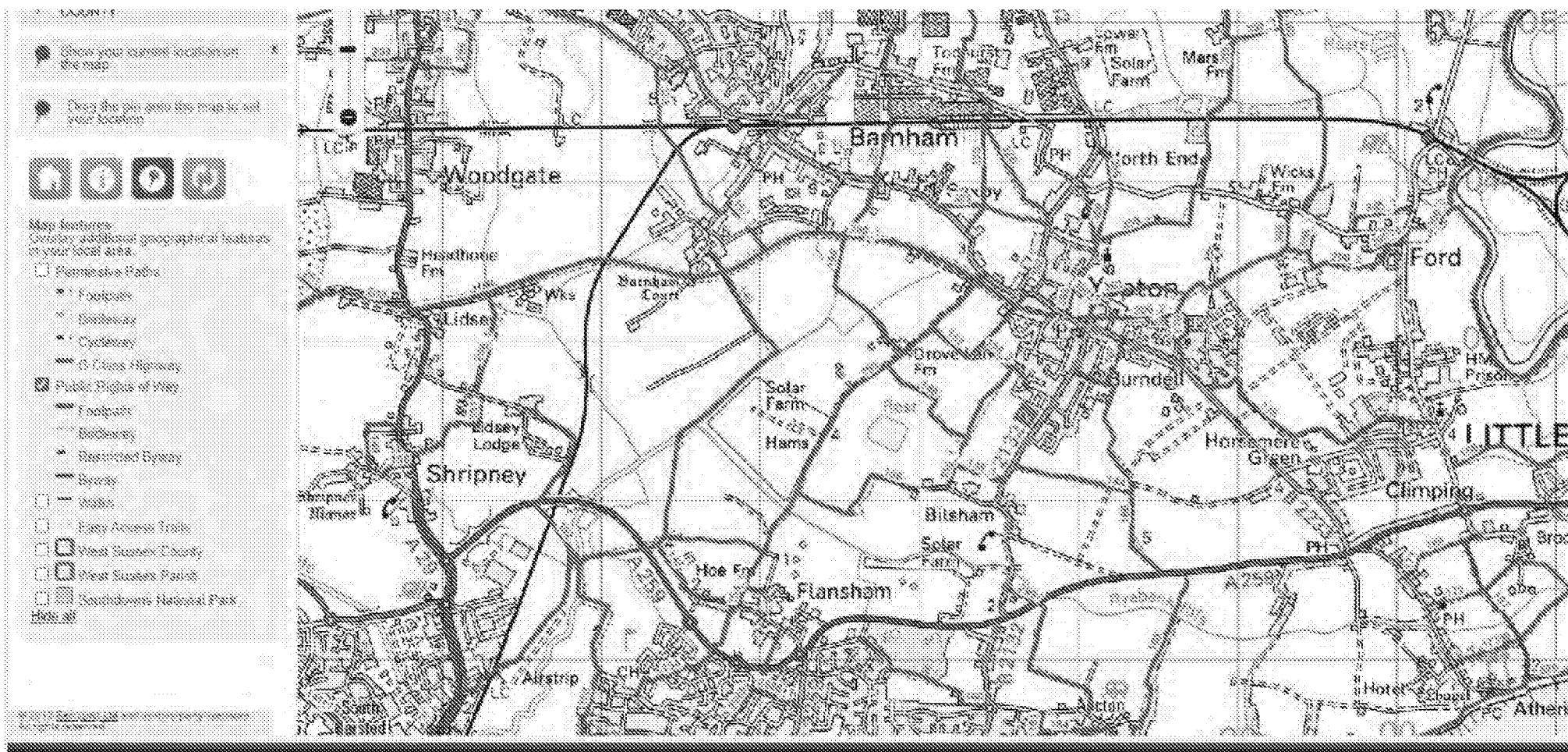
Status

FOR DISCUSSIONS

Scale	Date	Drawn	Checked
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Drawing No	Revision		
A361-SK001	P1		

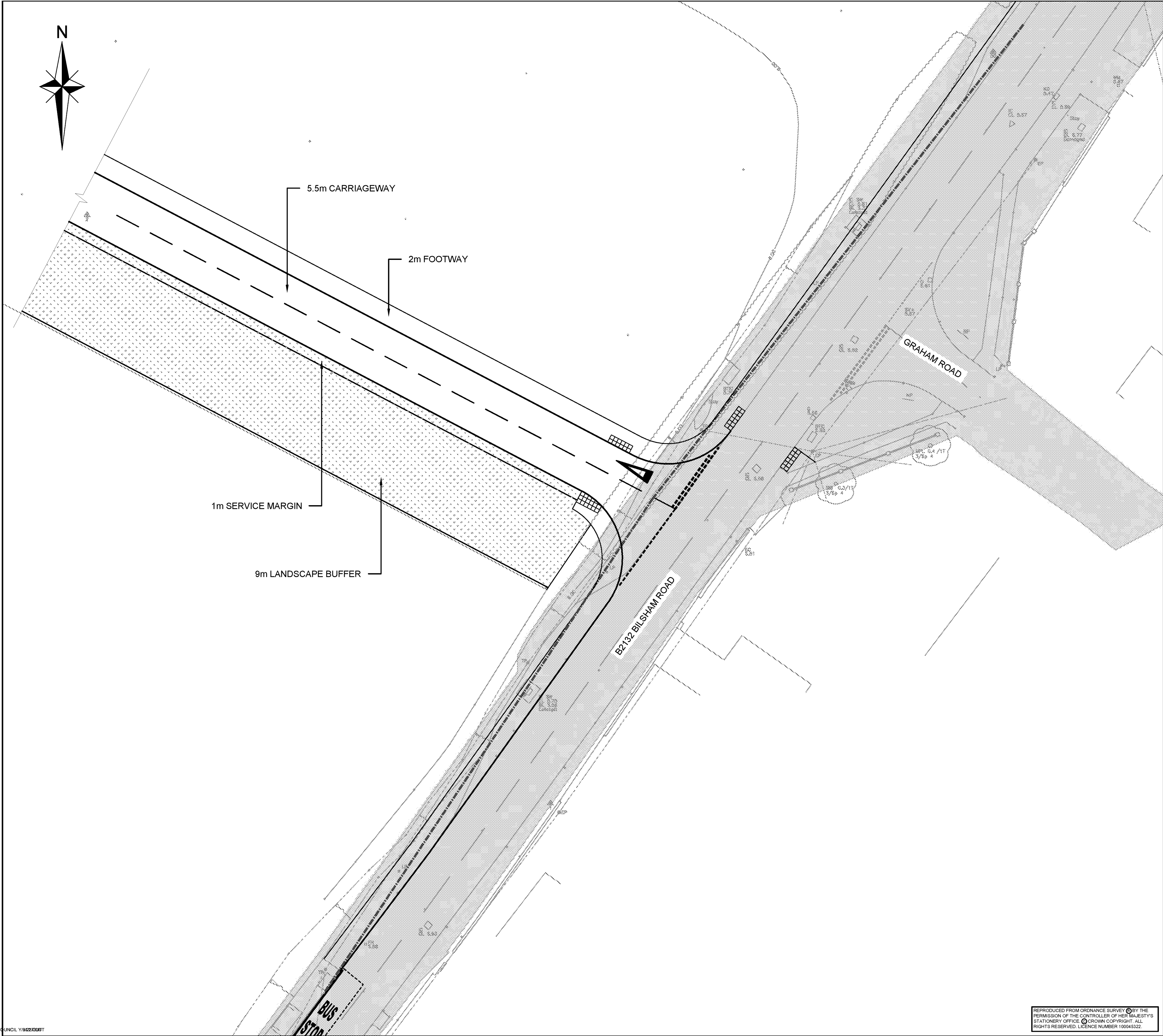


Appendix B – PRow Map





Appendix C – Approved Access to North



FOR PLANNING PURPOSES ONLY

1. DO NOT SCALE FROM THIS DRAWING.
2. ALL DIMENSIONS SHOWN ON THIS DRAWING ARE IN METRES.

2.4m x 59m VISIBILITY SPLAY (UPTO 37mph
M/s IN ACCORDANCE WITH OBSERVED
85th PERCENTILE SPEEDS OF 35mph
NORTHBOUND & 36mph SOUTHBOUND)

A	SWALE REMOVED	SD	TDM	RJH	17/10/18
Rev	Amendments	Drn	Chk	App	Date



Job Title

LAND WEST OF BILSHAM
ROAD, YAPTON

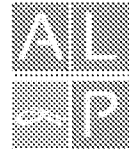
Drawing Title

PROPOSED SITE ACCESS
B2132 BILSHAM ROAD

Client	GLEESON STRATEGIC LAND
--------	------------------------

Scale 1:250 @A2	Date DEC 17	Designed TDM
Drawn TDM	Checked TDM	Approved RJH
Job No 14-111	Drawing No 14-111/201	Rev A

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Appendix D – TRICS Report



5.0 TRIP GENERATION, TRAFFIC GROWTH & DISTRIBUTION

Trip Generation

5.1 The traffic generation for a residential development of 250 dwellings has been calculated using trip rates derived from comparable sites on the TRICS database. These were agreed with WSCC during the pre-application stage. For robustness, sites consisting of privately owned developments of greater than 100 dwellings were selected. The results are summarised below in **Table 5.1** and the full TRICS output can be found in **Appendix G**.

Table 5.1: Development Trip Rates

Time-Period	Arrival	Departure	Two-Way
AM 08:00 – 09:00	0.141	0.368	0.509
PM 17:00 – 18:00	0.313	0.165	0.478
Daily	2.134	2.242	4.376

5.2 Based on the approved trip rates above, the traffic generation for the proposed development of 250 dwellings is summarised in **Table 5.2**.

Table 5.2: Development Traffic Generation

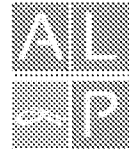
Time-Period	Arrival	Departure	Two-Way
AM 08:00 – 09:00	35	92	127
PM 17:00 – 18:00	78	41	120
Daily	473	508	1094

5.3 Compared to the two-way vehicle movements observed in the ATC survey (refer **Section 3.0**), this equates to an increase in vehicle flows on the B2132 Bilsham Road of 19.9% in the AM peak and 31.4% in the PM peak. **Table 5.3** summarises.

Table 5.3: Development Traffic Impact on Bilsham Road

Time-Period	Existing Two-Way Traffic	Two-Way Development Traffic	% Increase
AM 08:00 – 09:00	637	127	19.9%
PM 17:00 – 18:00	381	120	31.4%
Daily	5832	1094	18.7%

5.4 While the percentage increase in vehicle trips appears to be high, this is only the case as the existing observed traffic flows are low. The capacity of the B2132 Bilsham Road is more than sufficient to accommodate these additional traffic movements.



Appendix E – 2011 Census Data

Arundel District Council
ONS Crown Copyright Reserved [from Nomis on 9 June 2021]
population
units
date
usual residence

W003EW - Location of usual residence and place of work by method of travel to work (MSOA level)

ONS Crown Copyright Reserved [from Nomis on 9 June 2021]

All usual residents aged 16 and over in employment the week before the census
Persons
2011
Arun 003 + 006

place of work	Area	All categories: Method of travel to work (2001 specification)	Work mainly at or from home	Underground, metro, light rail or tram	Train	Bus, minibus or coach	Taxi	Motorcycle, scooter or moped	Driving a car or van	Passenger in a car or van	Bicycle	On foot	Other method of travel to work
E02006542	Arundal	248	0	0	6	4	0	5	188	23	9	12	1
E02006543	North Angmering	35	0	0	0	0	0	0	33	0	1	1	0
E02006544	Eastergate / Westergate	669	0	0	8	2	2	4	583	48	63	158	3
E02006545	Littlehampton	171	0	0	6	7	0	6	129	7	7	9	0
E02006546	Angmering	64	0	0	2	2	0	0	53	2	2	3	0
E02006547	Yapton / Ford	380	0	0	11	0	0	4	223	21	16	102	3
E02006548	Littlehampton	66	0	0	1	0	0	1	58	3	1	1	1
E02006549	Ferring	18	0	0	0	0	0	0	17	0	0	1	0
E02006550	Littlehampton	104	0	0	4	1	0	1	88	6	2	2	0
E02006551	Littlehampton	41	0	0	0	2	0	0	33	4	1	1	0
E02006552	Littlehampton	144	0	0	6	4	0	1	112	6	7	8	0
E02006553	North Berstead	102	0	0	5	3	0	2	80	7	3	2	0
E02006554	Middleton	42	0	0	0	0	0	0	40	1	1	0	0
E02006555	Bognor Regis	161	0	0	8	3	0	2	138	4	4	2	0
E02006556	Felpham	43	0	0	0	3	0	0	33	5	1	1	0
E02006557	Bognor Regis	35	0	0	1	0	0	1	31	0	2	0	0
E02006558	Bognor Regis	270	0	0	31	13	1	1	190	17	10	7	0
E02006559	Bognor Regis	23	0	0	0	0	0	0	18	2	2	1	0
E02006560	Pagham	25	0	0	1	1	0	0	20	2	0	1	0
Adur	East of Arun	79	0	0	5	0	0	0	69	4	0	1	0
Brighton and Hove	East of Arun	96	0	0	25	5	1	1	50	6	2	6	0
Chichester	West of Arun	1,778	0	0	151	15	1	16	1,457	102	25	10	1
Eastbourne	East of Arun	0	0	0	0	0	0	0	0	0	0	0	0
Hastings	East of Arun	5	0	0	1	0	0	0	3	0	0	1	0
Horsham	Northeast of Arun	168	0	0	13	1	0	2	146	4	1	1	0
Lewes	East of Arun	30	0	0	1	0	0	1	28	0	0	0	0
Mid Sussex	East of Arun	28	0	0	4	0	0	0	24	0	0	0	0
Rother	East of Arun	1	0	0	0	0	0	0	1	0	0	0	0
Wealden	East of Arun	4	0	0	0	0	0	0	3	0	0	1	0
Worthing	East of Arun	347	0	0	23	7	0	3	284	20	4	6	0
South East		569	0	1	372	73	5	54	4,417	307	164	344	9
Rest of The South East		5,746	0%	0%	6%	1%	0%	1%	77%	5%	3%	6%	0%

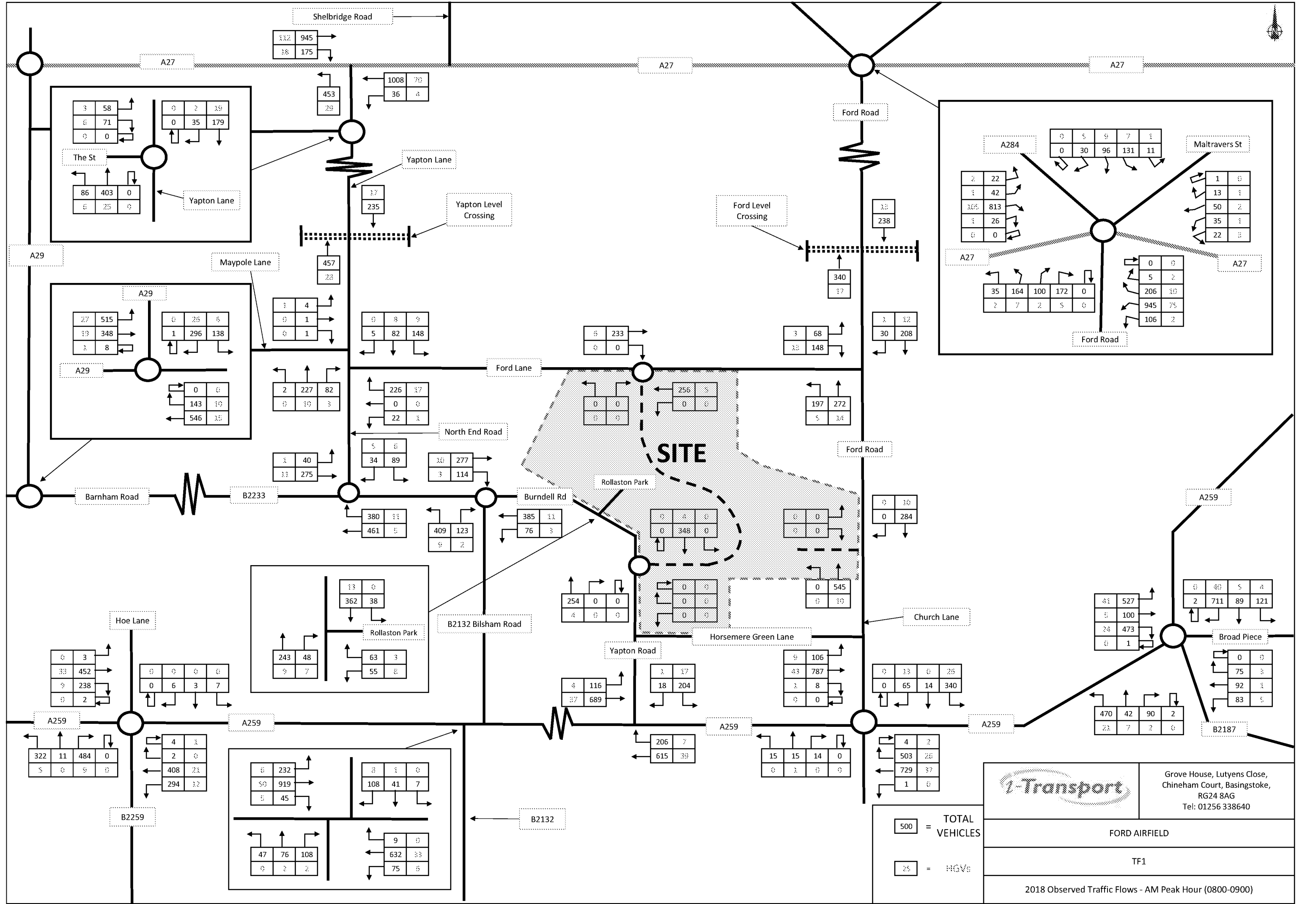
Destination			Total Trips
Arun			2,641
Rest of West Sussex			2,536
South East			569
Total			5,746

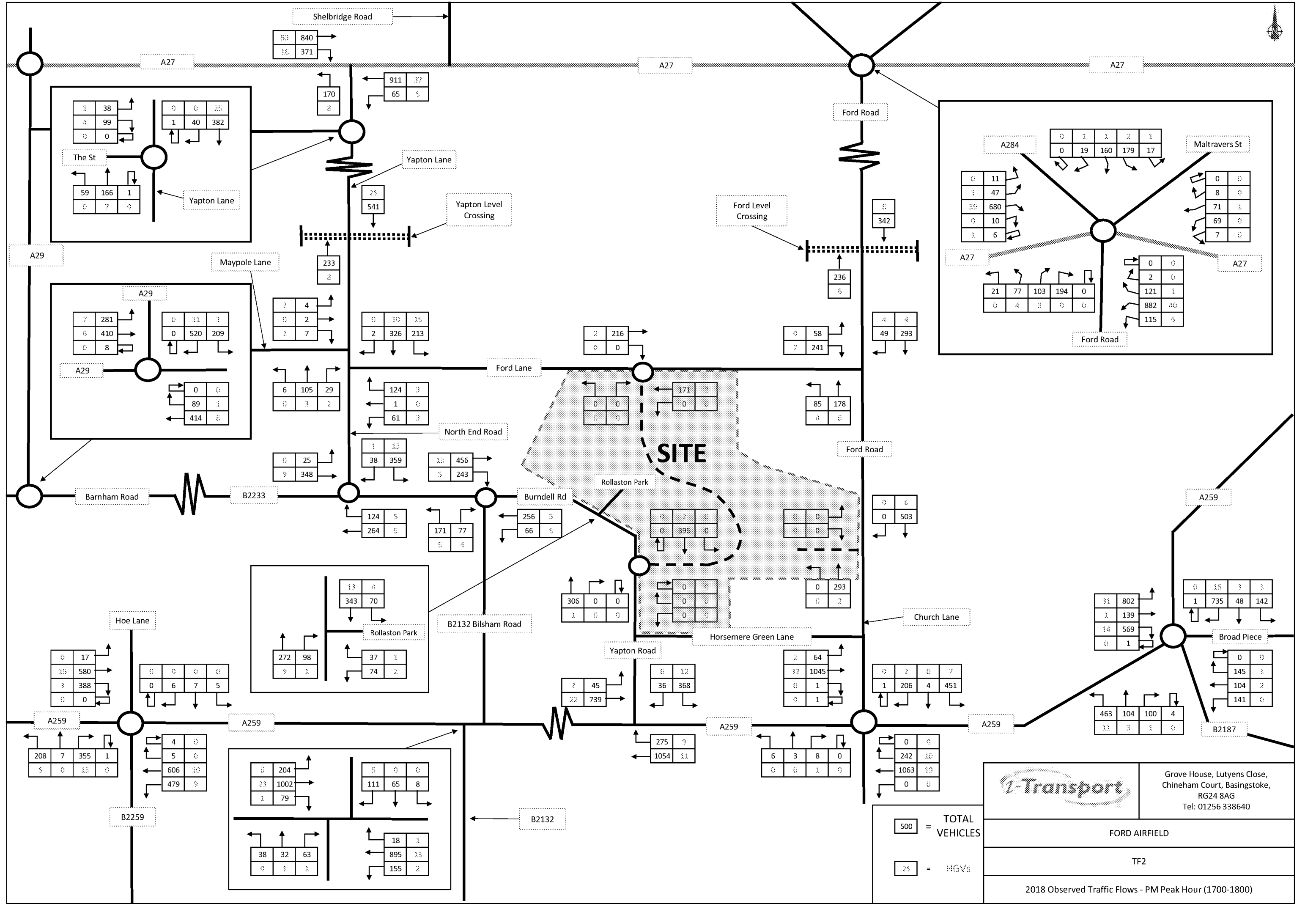
			Total Trips
Trips in Ward			1,049
			18%
Rest of Arun			1,592
			28%
West Sussex			2,536
			44%
South east			569
			10%

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.



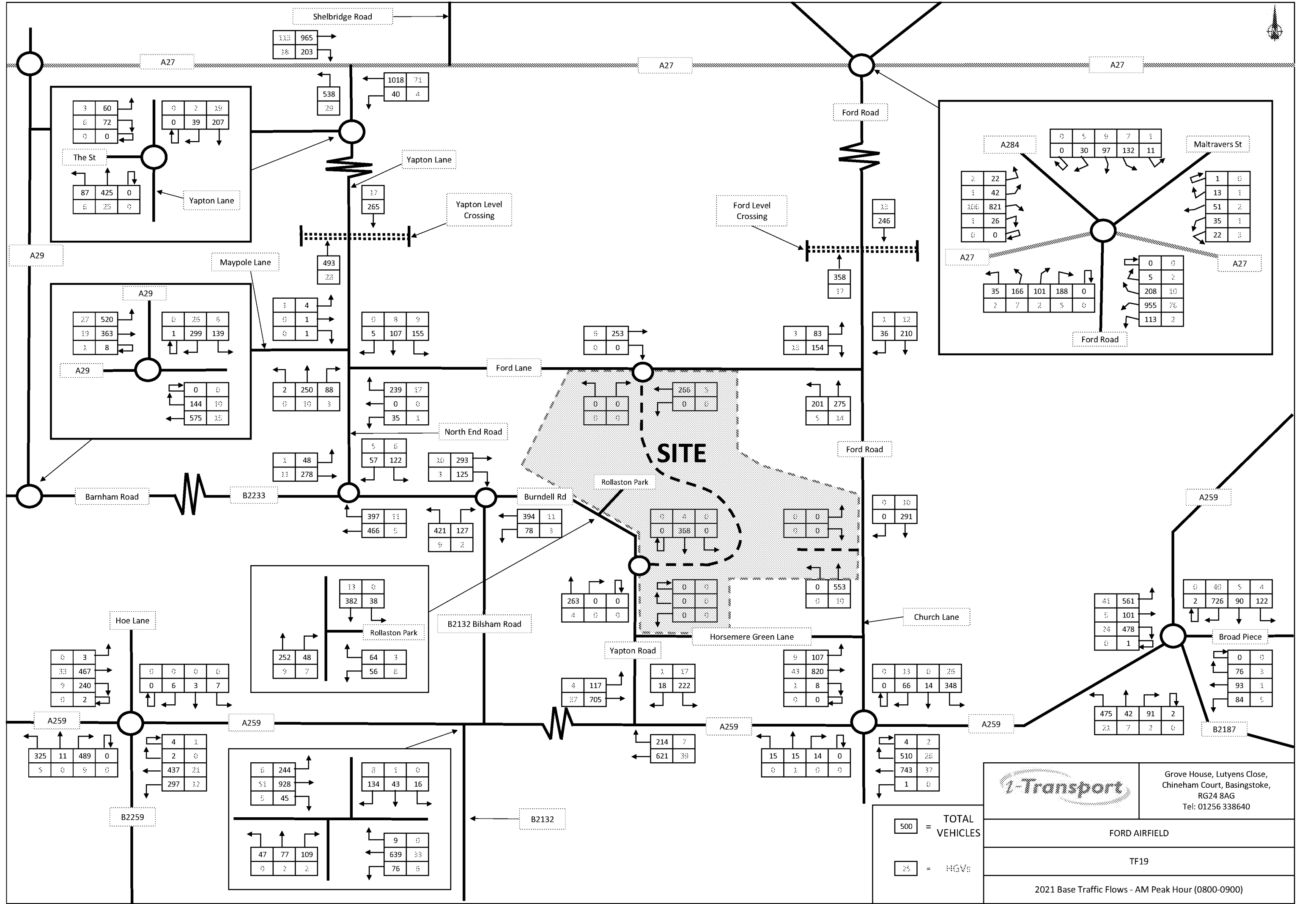
Appendix F – Ford Airfield Traffic Flows

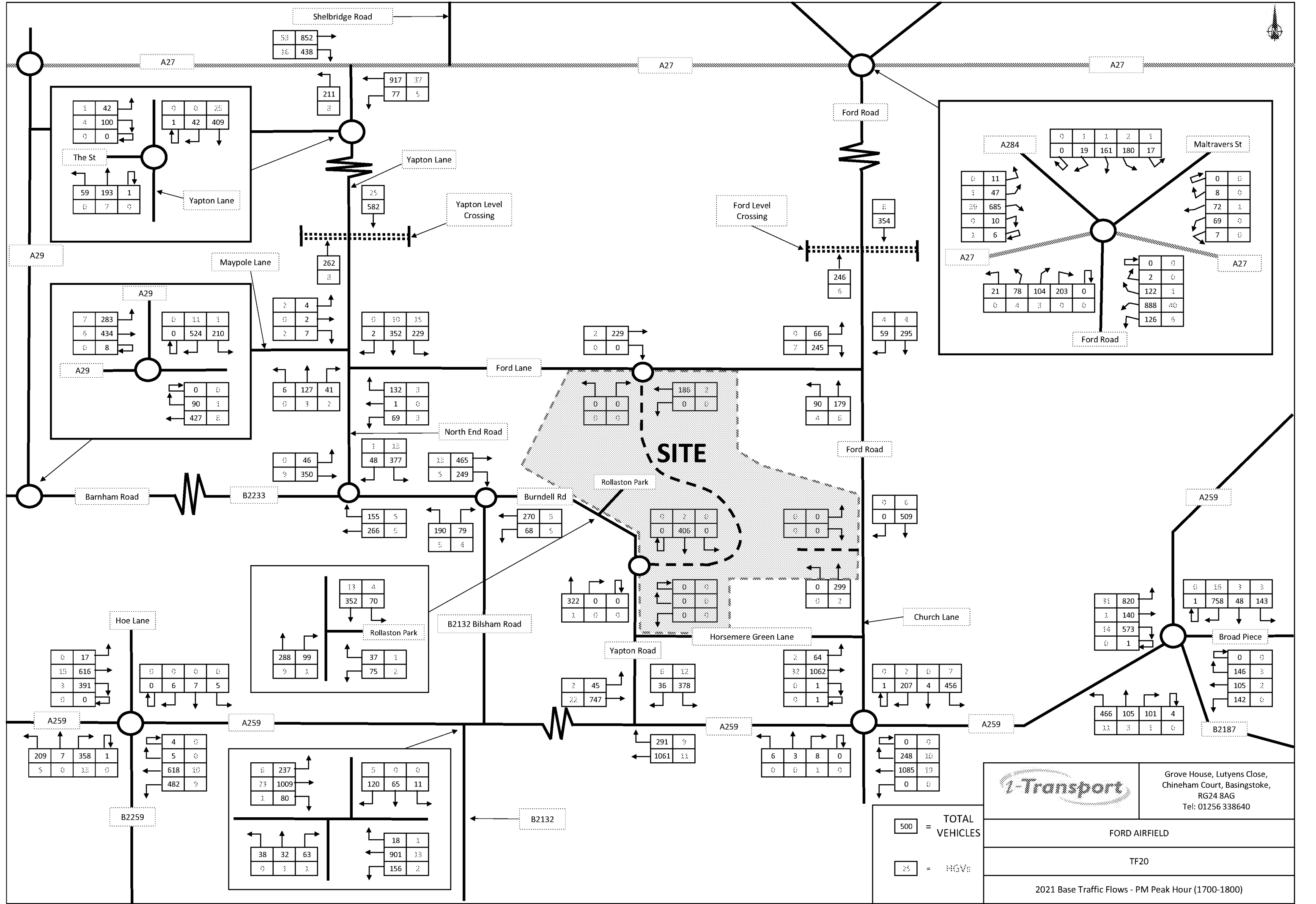


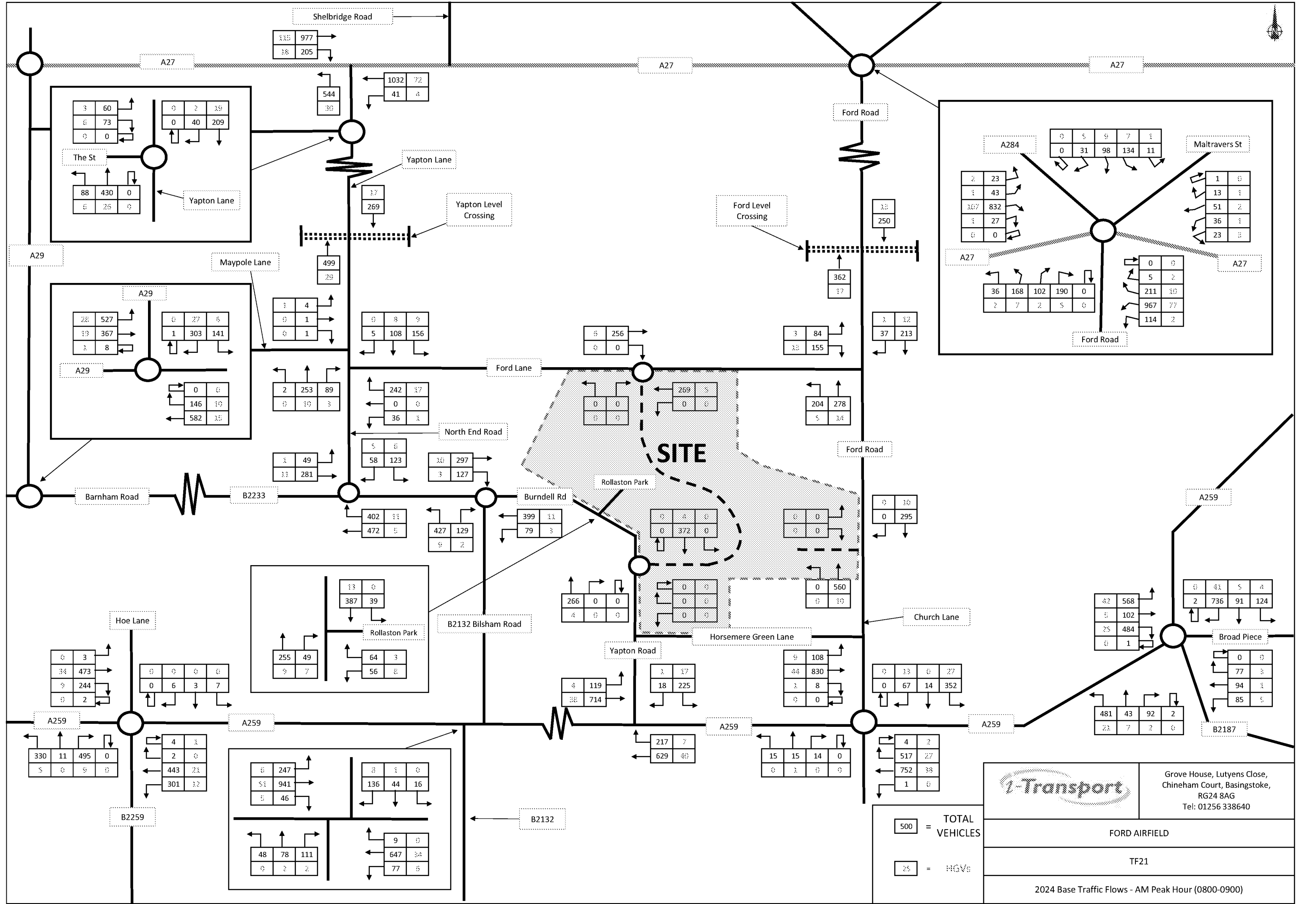


Grove House, Lutyens Close,
Chineham Court, Basingstoke,
RG24 8AG
Tel: 01256 338640

FORD AIRFIELD
TF2
2018 Observed Traffic Flows - PM Peak Hour (1700-1800)



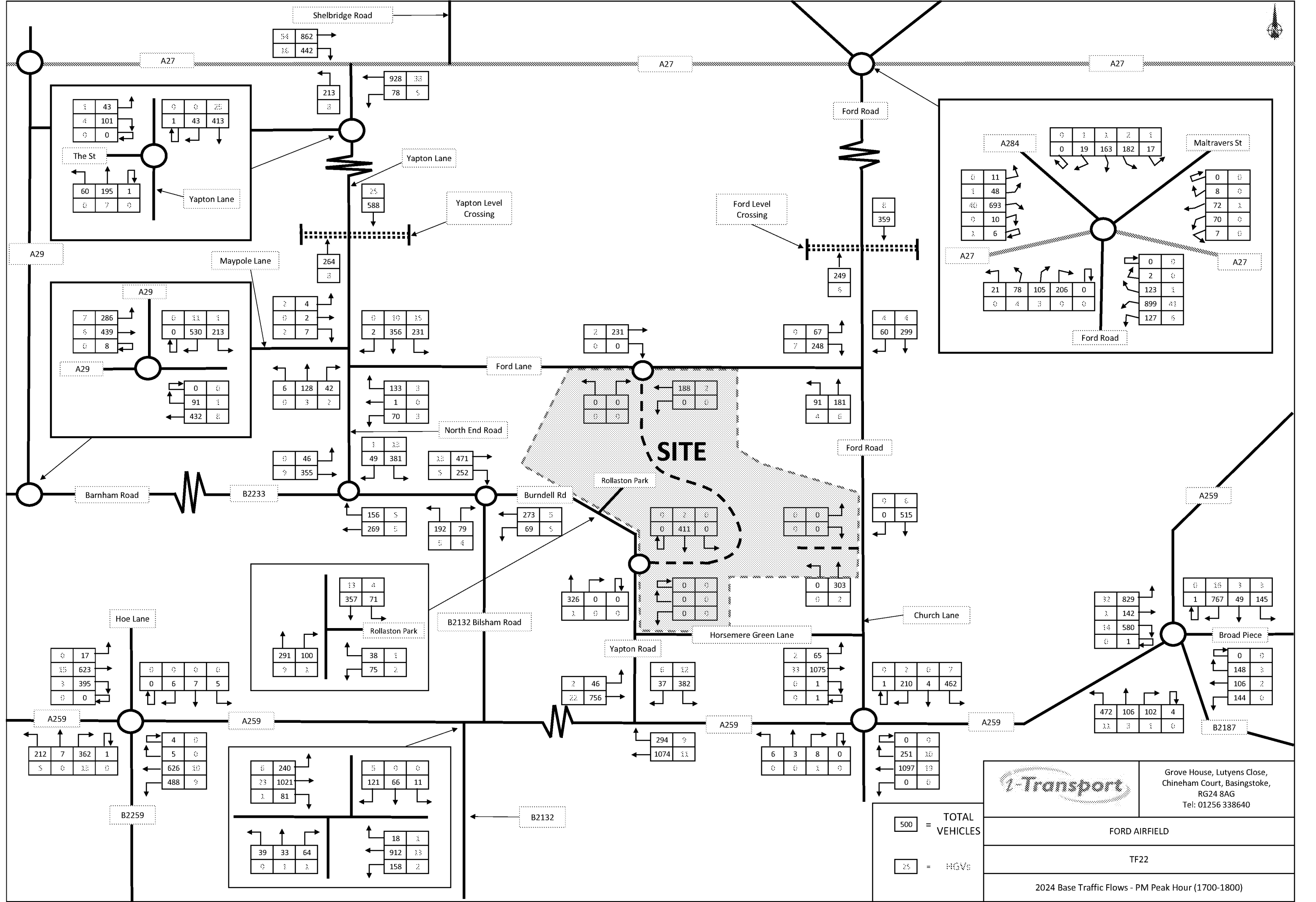






Grove House, Lutyens Close,
Chineham Court, Basingstoke,
RG24 8AG
Tel: 01256 338640

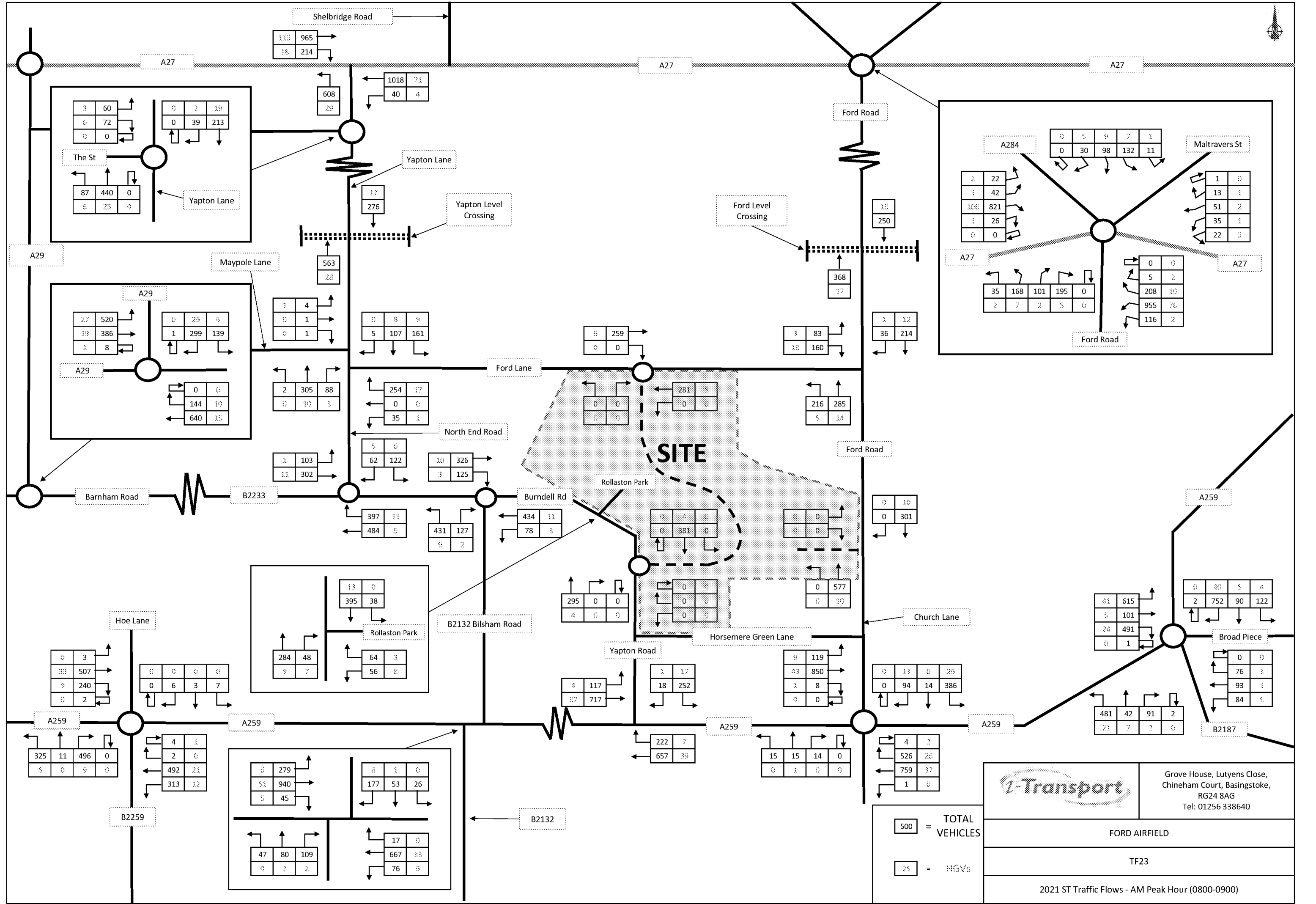
FORD AIRFIELD
TF21
2024 Base Traffic Flows - AM Peak Hour (0800-0900)





Grove House, Lutyens Close,
Chineham Court, Basingstoke,
RG24 8AG
Tel: 01256 338640

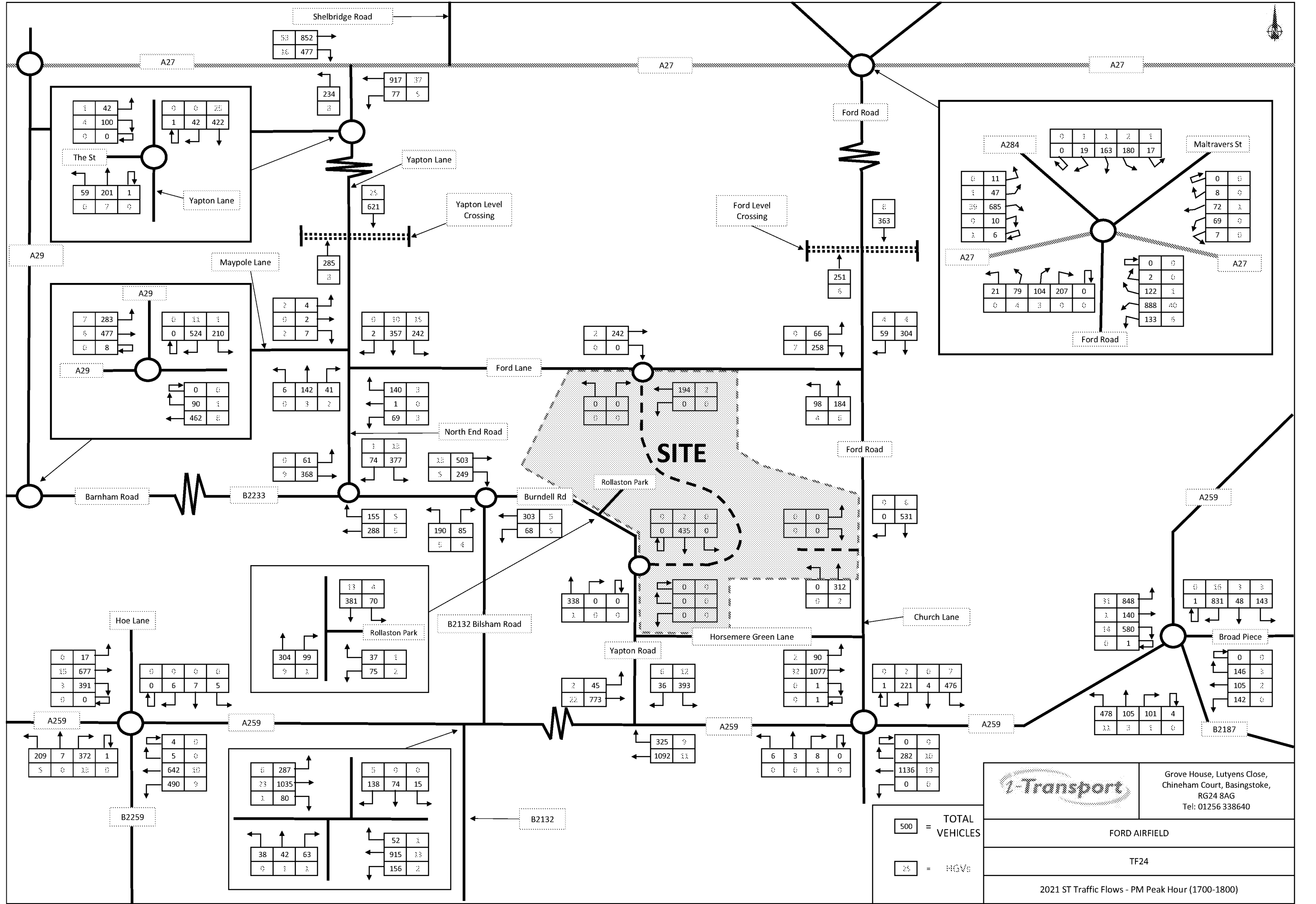
FORD AIRFIELD
TF22
2024 Base Traffic Flows - PM Peak Hour (1700-1800)





Grove House, Lutyens Close,
Chineham Court, Basingstoke,
RG24 8AG
Tel: 01256 338640

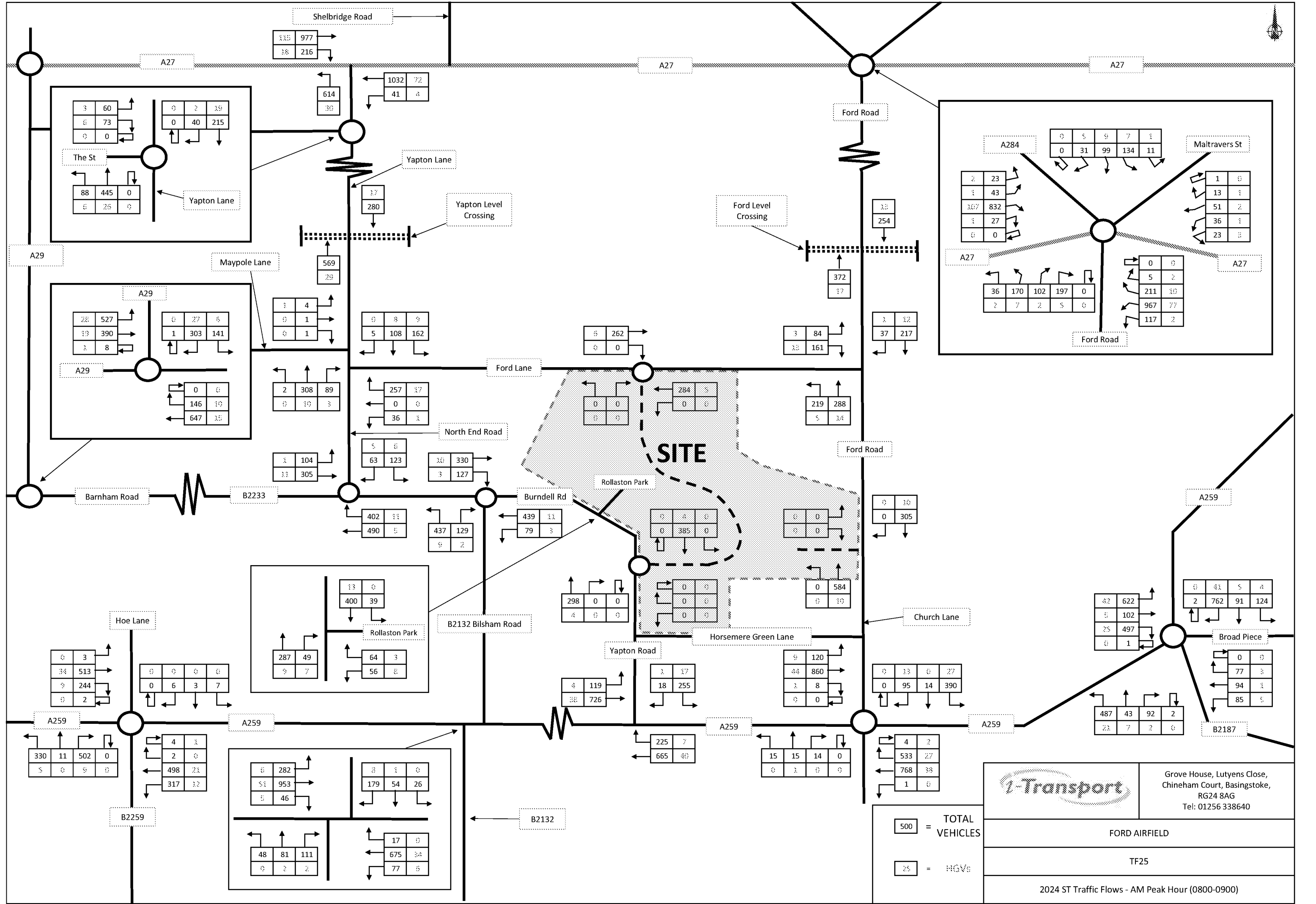
FORD AIRFIELD
TF23
2021 ST Traffic Flows - AM Peak Hour (0800-0900)

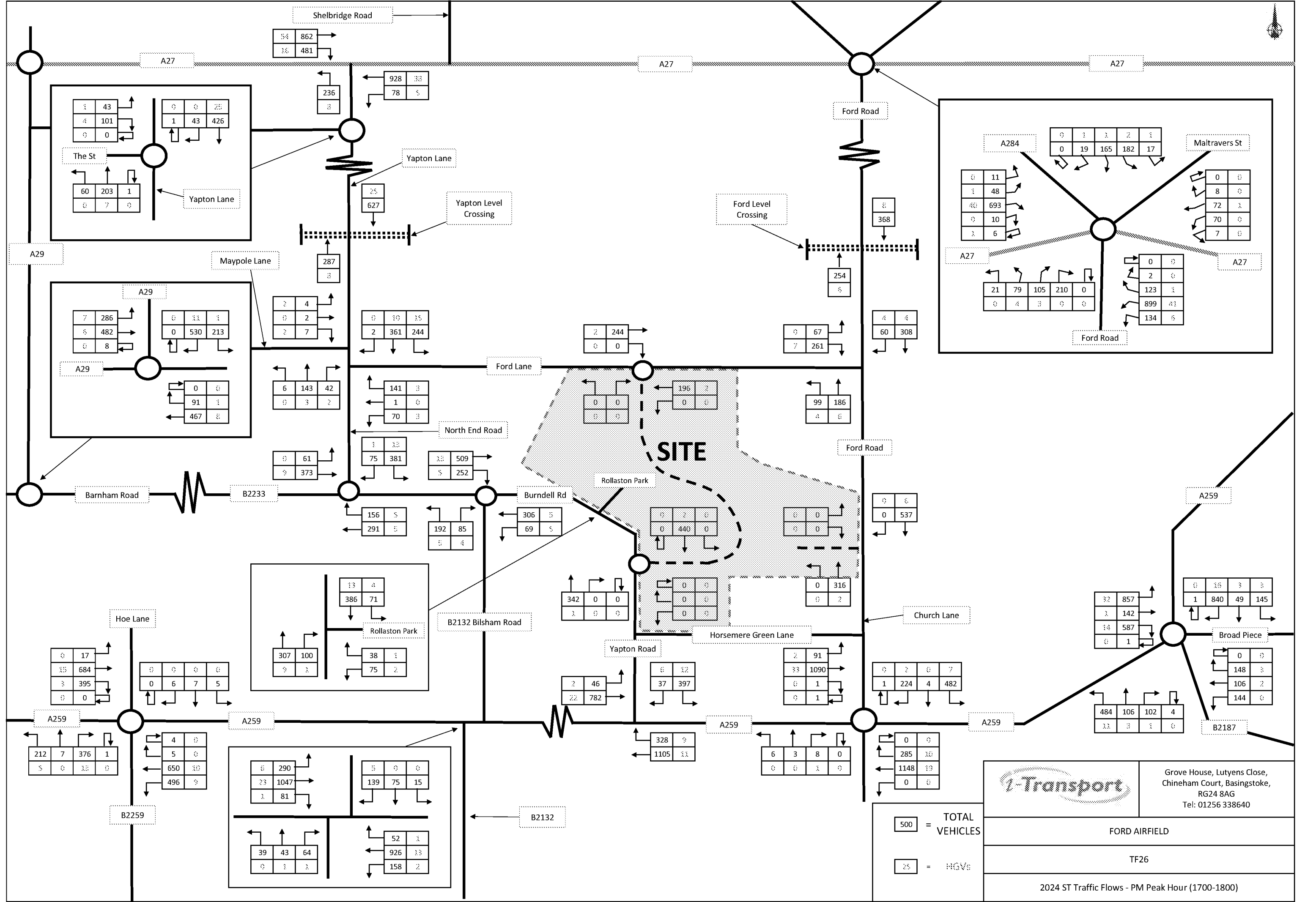


500 = TOTAL VEHICLES
25 = HGVs

Grove House, Lutyens Close,
Chineham Court, Basingstoke,
RG24 8AG
Tel: 01256 338640

FORD AIRFIELD
TF24
2021 ST Traffic Flows - PM Peak Hour (1700-1800)







Grove House, Lutyens Close,
Chineham Court, Basingstoke,
RG24 8AG
Tel: 01256 338640

FORD AIRFIELD
TF26
2024 ST Traffic Flows - PM Peak Hour (1700-1800)

development planning
infrastructure design
transport HIGHWAYS
drainage
CIVIL ENGINEERING
site appraisal
flood risk assessment
travel plans
masterplanning

ARLEY LETCHFORD PARTNERSHIP LTD

WEST SUSSEX COUNTY COUNCIL
PRE APPLICATION CONSULTATION

TO:	Organisation: Abley Letchford Partnership FAO: Thomas Moloney
FROM:	Stephen Gee WSCC - Highways Authority
DATE:	3 September 2021
LOCATION:	B2132 Bilsham Road, Yapton BN18
SUBJECT:	Internal Reference: PRE-91-21 Hybrid Application for development of up to 200 dwellings with first 30-50 being in detail along with access and associated works.
DATE OF SITE VISIT:	n/a
RECOMMENDATION:	Advice
S106 CONTRIBUTION TOTAL:	TBC

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↑↓0C U↗to L↖Df I↗tt↖HE IX↖U↗Df iXIX↗t↗DU↗gtt II Lpt ↘(D)ot ↑↖%XHE L↖VIA↖X U↗IDAI ↗I↖NDXI
L↖IX↖Z↖E↖IX↖G O↖XI DAI↖gtt II↗dt↖to L↖↗↖LB Lpoo(X)LI↖%T↖BE C↖6A↖%IX↗t↖←U↖to

[illegible]
$$\cdot \cup \{T \cup \{T\}\}$$
[illegible] t_{wh}^0

$\alpha_D \propto \frac{1}{\sqrt{\lambda}} \propto \frac{1}{\sqrt{m^2 + p^2}}$

[illegible]

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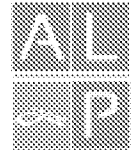
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例 3. ① $\text{C}_2\text{H}_5\text{X} \xrightarrow{\text{C}_2\text{H}_5\text{O}^-} \text{C}_2\text{H}_5\text{OC}_2\text{H}_5$ $\text{C}_2\text{H}_5\text{X} \xrightarrow{\text{C}_2\text{H}_5\text{O}^-} \text{C}_2\text{H}_5\text{OC}_2\text{H}_5$
 ② $\text{C}_2\text{H}_5\text{X} \xrightarrow{\text{C}_2\text{H}_5\text{O}^-} \text{C}_2\text{H}_5\text{OC}_2\text{H}_5$ $\text{C}_2\text{H}_5\text{X} \xrightarrow{\text{C}_2\text{H}_5\text{O}^-} \text{C}_2\text{H}_5\text{OC}_2\text{H}_5$

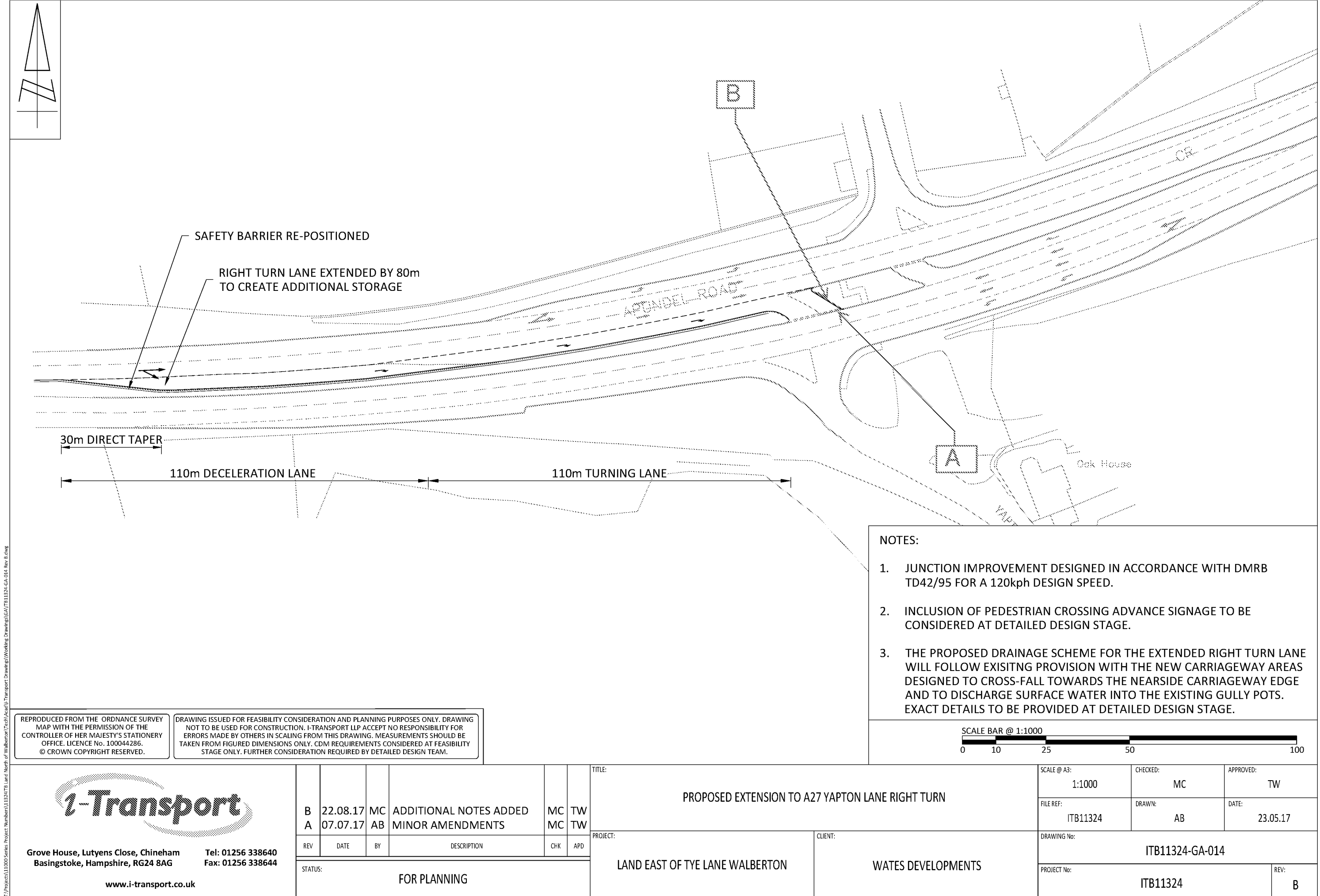
<https://www.arun.gov.uk/download.cfm?doc=docm93jijm4n16907.pdf&ver=17505>

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1

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Appendix C – A27 Mitigation Scheme

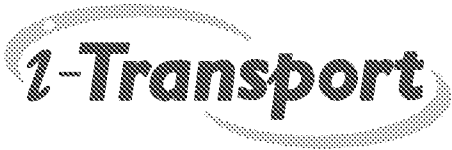


- NOTES:
- 1. JUNCTION IMPROVEMENT DESIGNED IN ACCORDANCE WITH DMRB TD42/95 FOR A 120kph DESIGN SPEED.
 - 2. INCLUSION OF PEDESTRIAN CROSSING ADVANCE SIGNAGE TO BE CONSIDERED AT DETAILED DESIGN STAGE.
 - 3. THE PROPOSED DRAINAGE SCHEME FOR THE EXTENDED RIGHT TURN LANE WILL FOLLOW EXISITNG PROVISION WITH THE NEW CARRIAGEWAY AREAS DESIGNED TO CROSS-FALL TOWARDS THE NEARSIDE CARRIAGEWAY EDGE AND TO DISCHARGE SURFACE WATER INTO THE EXISTING GULLY POTS. EXACT DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.



REPRODUCED FROM THE ORDNANCE SURVEY MAP WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE. LICENCE No. 100044286. © CROWN COPYRIGHT RESERVED.

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Grove House, Lutyens Close, Chineham
Basingstoke, Hampshire, RG24 8AG
www.i-transport.co.uk

Tel: 01256 338640
Fax: 01256 338644

B	22.08.17	MC	ADDITIONAL NOTES ADDED MINOR AMENDMENTS	MC	TW
A	07.07.17	AB		MC	TW
REV	DATE	BY	DESCRIPTION	CHK	APD
STATUS:			FOR PLANNING		

TITLE: PROPOSED EXTENSION TO A27 YAPTON LANE RIGHT TURN		SCALE @ A3: 1:1000	CHECKED: MC	APPROVED: TW
		FILE REF: ITB11324	DRAWN: AB	DATE: 23.05.17
PROJECT: LAND EAST OF TYE LANE WALBERTON	CLIENT: WATES DEVELOPMENTS	DRAWING No: ITB11324-GA-014		
		PROJECT No: ITB11324		REV: B



From: Bowie, David [REDACTED]
Sent: 03 November 2017 12:33
To: Michael Eastham; Planning.Responses
Cc: Planning SE; Bown, Kevin; Cleaver, Elizabeth; Franklin, Richard
Subject: WA/44/17/OUT - Land East of Tye Lane, Walberton

For the attention of: Mr Michael Eastham

Application No: WA/44/17/OUT

Site: Land East of Tye Lane, Walberton.

Proposal: Outline application with some matters reserved for up to 175 dwellings, new vehicular access, together with associated car parking, landscaping & community facilities to include allotments, play space & community orchard. This application is a Departure from the Development Plan & may affect the character & appearance of the Walberton Village Conservation Area.

Highways England reference: 78375

Dear Michael,

Thank you for your consultation of 6 July 2017 regarding the above application and for your kind assistance during the period of Highways England's deliberations on this application.

Highways England has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the strategic road network (SRN). The SRN is a critical national asset and as such Highways England works to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

Highways England will be concerned with proposals that have the potential to impact on the safe and efficient operation of the SRN, in this case the A27.

Having examined the above application, we are satisfied that the development proposals can be achieved, subject to certain necessary conditions, without detriment to the safe and efficient operation of the Strategic Road Network. Accordingly, I attach our formal conditional response for your attention.

Should you have any questions regarding this response, please contact me.

Kind regards,
Sent on behalf of Kevin Bown Area 4 Spatial Planning Manager

David

David Bowie

Highways England Company Limited | Registered Office: Bridge House, 1 Walnut Tree Close,
Guildford GU1 4LZ | Registered in England and Wales No. 9346363



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Highways England Company Limited | General enquiries: 0300 123 5000 | National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF |



Registered in England and Wales no 9346363 | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford, Surrey GU1 4LZ

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Developments Affecting Trunk Roads and Special Roads

Highways England Planning Response (HEPR 16-01)

Formal Recommendation to an Application for Planning Permission

From: Simon Jones (Divisional Director),
Network Delivery and Development
South East Region
Highways England.
PlanningSE@highwaysengland.co.uk

To: Arun District Council – (FAO Case Officer: Michael Eastham)
planning.responses@arun.gov.uk
michael.eastham@arun.gov.uk

CC:



Council's Reference: WA/44/17/OUT

Location: Land East of Tye Lane, Walberton.

Proposal: Outline application with some matters reserved for up to 175 dwellings, new vehicular access, together with associated car parking, landscaping & community facilities to include allotments, play space & community orchard. This application is a Departure from the Development Plan & may affect the character & appearance of the Walberton Village Conservation Area.

Highways England Reference: HAMIS 78375

Referring to the notification of a planning application dated 6 July 2017 referenced above, in the vicinity of the A27 near Walberton, Sussex that forms part of the Strategic Road Network, notice is hereby given that Highways England's formal recommendation is that we:

a) ~~offer no objection;~~

b) recommend that conditions and an informative should be attached to any planning permission that may be granted (see Annex A – Highways England recommended Planning Conditions and Informative);

Highways England Planning Response (HEPR 16-01) January 2016

~~c) recommend that planning permission not be granted for a specified period (see Annex A – further assessment required);~~

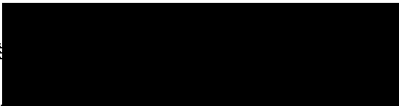
~~d) recommend that the application be refused (see Annex A – Reasons for recommending Refusal).~~

Highways Act Section 175B that requires consent to be obtained from the strategic highways company for the construction, formation or laying out of any access to or from a trunk road in England is not relevant to this application.¹

HIGHWAYS ENGLAND ("we") have been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

This response represents our formal recommendations with regard to this application and has been prepared by the Area 4 Spatial Planning Team and is copied to the Department for Transport as per the terms of our Licence.

Should the Council disagree with this recommendation it must consult the Secretary of State for Transport, as per the Town and Country Planning (Development Affecting Trunk Roads) Direction 2015, via transportplanning@dtf.gsi.gov.uk. If the Council requires a copy of the Direction, please contact us.

Signature: 	Date: 3 November 2017
Name: Kevin Brown	Position: Spatial Planning Manager.
	
Highways England: Bridge House, 1 Walnut Tree Close, Guildford, GU1 4LZ	

¹ Where relevant, further information will be provided within Annex A.

Highways England recommended Planning Conditions and Informative

We recommend that the following conditions and informative be attached to any permission granted in connection with planning application WA/44/17/OUT:

Condition: Strategic Road Network Mitigation Scheme

- 1) Prior to the occupation of 90 dwellings within the permitted development, the improvement works at the A27 / Yapton Lane junction shall be completed and open to the travelling public as shown on i-Transport's drawing number ITB11324-GA-014 Revision C "*Proposed extension to A27 Yapton Lane right turn*" dated 30/8/17.

Reason: This is to ensure that the A27 Trunk Road continues to be an effective part of the national system of routes for through traffic in accordance with section 10 of the Highways Act 1980 and to satisfy the reasonable requirements of road safety.

Condition: Construction management Plan

- 2) No works shall commence on site until a Construction Management Plan has been submitted to and approved in writing by the Local Planning Authority (who shall consult with Highways England). The plan shall include details of the management of traffic during the construction period. The construction of the development shall be carried out in accordance with the approved Construction Management Plan unless otherwise agreed in writing by the Local Planning Authority (who shall consult with the Highways England).

Reason: To ensure that construction of the development does not result in avoidable congestion on the A27 Trunk Road, to ensure that the A27 Trunk Road continues to be an effective part of the national system of routes for through traffic in accordance with section 10 of the Highways Act 1980 and to satisfy the reasonable requirements of road safety.

Informative: Contribution towards Strategic Road Network Mitigation Scheme

It will be noted that the applicant of the development hereby permitted (or their successors in title) will also, by necessity to make the application acceptable in transport planning terms, be entering into a S278 (Highways Act) agreement with Highways England. The agreement will lead to the development making a financial contribution of £400,000 (to be indexed linked in accordance with normal Highways England practice) towards the improvement of the A27 / A29 / Arundel Road junction as shown on i-Transport's drawings:

- ITB11324-GA-015 Revision C "*A27 / A29 Fontwell Avenue – Potential Further Junction Improvement - Sheet 1 of 3*" dated 30/8/17;
- ITB11324-GA-016 Revision A "*A27 / A29 Fontwell Avenue – Potential Further Junction Improvement - Sheet 2 of 3*" dated 30/8/17; and
- ITB11324-GA-017 Revision B "*A27 / A29 Fontwell Avenue – Potential Further Junction Improvement - Sheet 3 of 3*" dated 30/8/17.
- Or such alternative scheme as HE considers necessary to achieve an appropriate improvement of the junction.

The contribution is to be paid within two months of receipt of a Payment Notice, which itself is to be served no earlier than the occupation of the first dwelling within the permitted development.

SR
Dated: 1 November 2017

Between:

- [1] David Henry Tupper, Hilary Jennifer Tupper, Andrew William Brooke and David Mark Spofforth
- [2] Wates Developments Limited
- [3] Arun District Council
- [4] West Sussex County Council

AGREEMENT

under Section 106 of the Town & Country Planning Act 1990

and other powers

Land East of Tye Lane, Walberton

Providing:

affordable housing; highway improvements including junction works;

public open space; community facilities; school; police; sport and leisure; library and fire services provision

Arun District Council

Arun Civic Centre

Maltravers Road

Littlehampton

West Sussex BN17 5LF

DX 57406 LITTLEHAMPTON

Reference: WA/44/17/OUT

- 11.2.2 If by 31 December 2031 the Highways England Contribution or any part of it remains unspent Highways England will covenant to return such unspent contribution to the person who paid the Highways England Contribution

12. ADDITIONAL HIGHWAY WORKS

The Owner covenants with ADC:

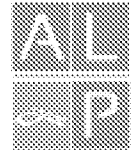
- 12.1 That it shall prior to Commencement of the Development enter into a Section 278 Agreement enabling the Owner to undertake and complete the Additional Highway Works prior to the Occupation of the first Market Housing Unit to be Occupied
- 12.2 The Section 278 Agreement entered into under clause 12.1 of this Agreement shall contain obligations as follows:
- 12.2.1 Subject to confirmation from Highways England that the Additional Highway Works are required to be delivered the Owner shall undertake and complete the Additional Highway Works and to the satisfaction of Highways England prior to the Occupation of the 90th Market Housing Unit to be Occupied
- 12.2.2 In the event that Highways England identify the Additional Highway Works are not required to be delivered, the Owner shall pay the Additional Transport Contribution to Highways England prior to Occupation of the 90th Market Housing Unit
- 12.2.3 In the event that the Additional Transport Contribution is paid and if by 31 December 2031 the Additional Transport Contribution or any part of it remains unspent Highways England will covenant to return such unspent contribution to the person who paid the Additional Transport Contribution

COVENANTS IN FAVOUR OF WSCC

13. HIGHWAY WORKS

The Owner covenants with WSCC

- 13.1 to enter into an agreement under section 278 of the Highways Act 1980 enabling the Owner to undertake and complete the Highway Works
- 13.2 to undertake and complete the Highway Works and to the satisfaction of WSCC by no later than the Occupation of the first Dwelling to be Occupied
- 13.3 not to Occupy or cause or allow to be Occupied any Dwelling built on the Land before the Highway Works shall have been Completed to the satisfaction of WSCC



Appendix D – Traffic Survey Data

Yapton ATC, Bilsham Road

Produced by Streetwise Services Ltd.



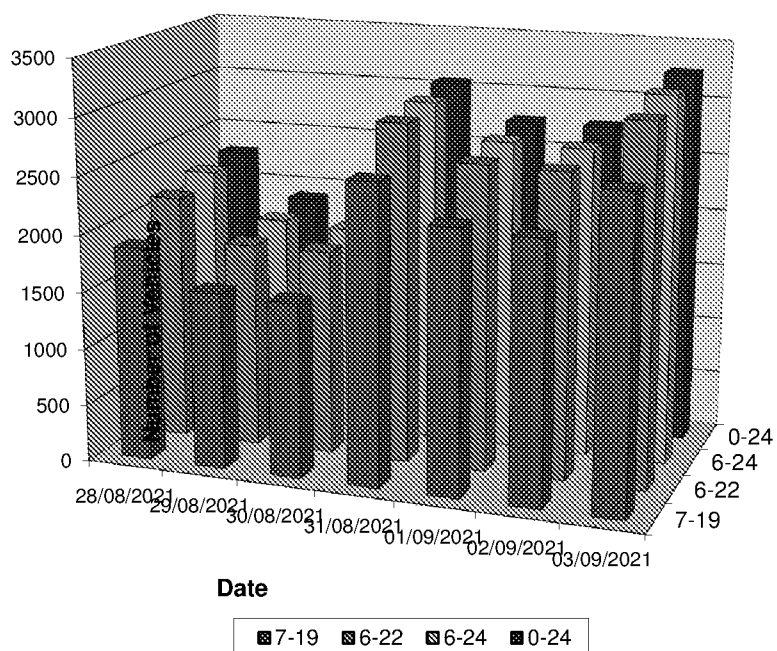
Channel 1 - Northbound

Vehicle Flow

Week 1

Hr Ending	28/08/2021 Saturday	29/08/2021 Sunday	30/08/2021 Monday	31/08/2021 Tuesday	01/09/2021 Wednesday	02/09/2021 Thursday	03/09/2021 Friday	5 Day Ave	7 Day Ave
1	17	20	11	3	1	6	12	7	10
2	7	8	7	2	4	3	9	5	6
3	7	1	10	2	3	0	3	4	4
4	3	2	4	2	3	3	2	3	3
5	4	2	2	13	9	10	8	8	7
6	9	11	10	32	30	35	27	27	22
7	36	17	30	87	89	87	94	77	63
8	61	36	53	225	222	241	227	194	152
9	104	79	66	183	212	212	183	171	148
10	179	115	97	179	186	174	174	162	153
11	192	147	136	187	169	190	211	179	176
12	221	175	165	144	162	158	197	165	175
13	201	182	146	174	196	166	178	172	178
14	176	151	162	161	180	153	183	168	167
15	156	158	158	166	197	181	227	166	173
16	158	144	160	370	197	177	247	239	208
17	158	117	122	403	212	225	344	281	226
18	155	118	132	255	215	223	354	296	207
19	111	126	132	160	142	160	168	152	143
20	115	98	105	121	136	137	163	132	125
21	75	78	85	79	94	102	109	94	89
22	59	53	46	63	51	63	51	55	55
23	60	47	25	35	37	37	55	38	42
24	27	17	10	17	15	15	37	19	20
7-19	1872	1548	1509	2607	2250	2280	2893	2276	2114
6-22	2127	1734	1795	2937	2950	2643	3110	2634	2446
6-24	2055	1655	1655	2875	2450	2450	3001	2501	2508
0-24	2291	1902	1874	3063	2762	2758	3263	2743	2552

Vehicle Flow (Channel 1)



Yapton ATC, Bilsham Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Average Speed

Week 1

Hr Ending	28/08/2021 Saturday	29/08/2021 Sunday	30/08/2021 Monday	31/08/2021 Tuesday	01/09/2021 Wednesday	02/09/2021 Thursday	03/09/2021 Friday
1	35.1	34.4	41.2	38.0	18.0	35.5	35.1
2	38.7	33.6	40.5	28.0	35.5	38.0	37.4
3	30.9	33.0	34.2	43.0	43.0	-	41.3
4	43.0	38.0	33.0	40.5	39.7	41.3	33.0
5	36.8	38.0	40.5	39.0	38.3	38.0	34.9
6	36.3	36.9	38.0	36.0	36.2	37.0	37.3
7	34.5	34.5	33.5	34.4	32.7	34.0	34.3
8	34.7	34.1	33.1	32.7	32.3	32.8	31.9
9	32.2	32.8	33.2	32.2	32.2	32.0	32.5
10	32.7	33.0	32.0	32.2	29.6	30.9	32.2
11	32.8	32.2	32.4	30.7	31.3	31.0	30.9
12	31.6	31.6	32.3	31.5	30.7	31.2	31.3
13	32.2	31.5	31.4	31.9	30.4	31.4	30.8
14	31.9	32.9	31.3	30.8	30.8	30.6	31.9
15	31.9	30.8	32.0	32.3	30.7	32.0	31.7
16	31.4	32.0	31.3	30.1	31.8	31.4	31.2
17	32.2	31.5	31.2	29.6	30.9	32.4	31.2
18	32.5	32.3	32.1	31.5	32.0	32.8	30.3
19	32.2	33.4	31.7	33.1	32.3	31.1	33.8
20	32.3	32.1	32.7	31.4	32.0	30.9	31.9
21	30.9	32.1	31.2	32.1	32.0	31.8	33.3
22	32.7	33.5	33.4	32.1	34.6	33.3	32.1
23	32.7	33.2	35.5	32.3	33.0	32.3	34.0
24	33.9	37.1	36.0	36.5	34.3	38.3	33.8

10-12	32.2	31.9	32.3	31.1	31.0	31.1	31.1
13-15	31.7	31.5	31.2	31.5	31.3	31.2	31.3
0-24	32.3	32.3	32.2	31.6	31.6	32.0	31.8

7 Day Ave 32.0

85th Percentile

Hr Ending	28/08/2021 Saturday	29/08/2021 Sunday	30/08/2021 Monday	31/08/2021 Tuesday	01/09/2021 Wednesday	02/09/2021 Thursday	03/09/2021 Friday
1	43.7	38.6	56.5	43.7	18.9	43.7	38.3
2	48.5	43.3	48.4	28.9	43.7	43.9	43.2
3	43.6	33.3	43.3	48.8	48.5	-	48.5
4	48.3	38.8	43.2	43.0	48.4	43.5	38.3
5	43.3	38.8	48.2	43.5	43.1	43.1	43.3
6	43.8	48.6	43.6	43.9	43.8	43.8	43.0
7	43.0	39.0	43.4	43.4	38.5	43.4	43.5
8	43.8	43.9	43.4	38.7	38.8	38.5	38.2
9	38.8	38.2	38.7	38.5	38.6	38.5	38.9
10	38.7	38.7	38.3	38.5	38.8	38.2	38.6
11	38.0	39.0	38.6	38.5	38.0	38.3	38.8
12	38.4	38.2	38.2	38.4	38.2	38.1	38.9
13	38.9	38.5	38.2	38.4	38.1	38.6	38.3
14	38.8	38.1	38.6	38.3	38.1	38.2	38.5
15	38.4	39.0	38.1	38.1	38.3	38.9	38.1
16	39.0	38.7	38.5	33.2	38.1	38.1	38.6
17	38.9	38.0	38.9	39.0	38.0	38.4	38.4
18	38.1	38.6	38.3	38.1	38.5	38.3	39.0
19	38.9	38.1	38.8	38.4	38.7	38.9	38.1
20	38.4	38.1	43.4	38.4	38.5	38.8	38.9
21	38.5	38.8	33.3	38.5	38.8	38.3	43.6
22	38.8	43.3	38.9	43.2	38.1	38.7	38.3
23	38.1	38.0	38.6	38.5	38.2	43.3	38.1
24	38.6	43.3	43.6	43.3	38.7	43.1	38.5

10-12	38.5	38.4	38.4	38.5	38.5	38.6	38.2
13-15	38.5	38.5	38.5	38.5	38.5	38.5	38.5
0-24	38.6	38.9	38.6	38.2	38.1	38.8	38.1

7 Day Ave 38.5

Yapton ATC, Bilsham Road

Produced by Streetwise Services Ltd.



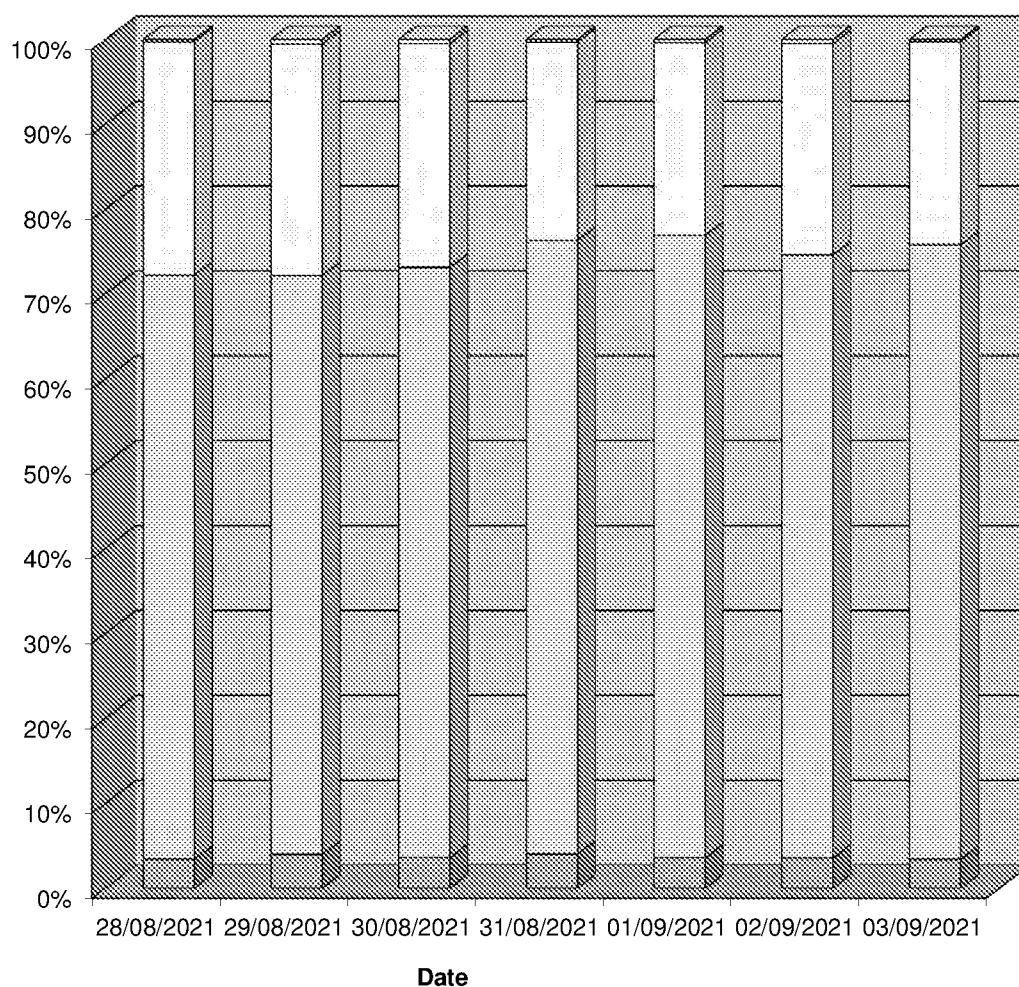
Channel 1 - Northbound

Speed Summary

Week 1

Speed (MPH)	28/08/2021 Saturday	29/08/2021 Sunday	30/08/2021 Monday	31/08/2021 Tuesday	01/09/2021 Wednesday	02/09/2021 Thursday	03/09/2021 Friday
0-20	79	76	68	124	100	99	112
21-35	1576	1297	1303	2214	2025	1959	2362
36-50	630	519	494	716	627	687	781
51-100	6	10	9	9	10	13	8
TOTAL	2291	1902	1874	3063	2762	2758	3263

Speed Summary (MPH)



0-20
 21-35
 36-50
 51-100

Yapton ATC, Bilsham Road

Produced by Streetwise Services Ltd.



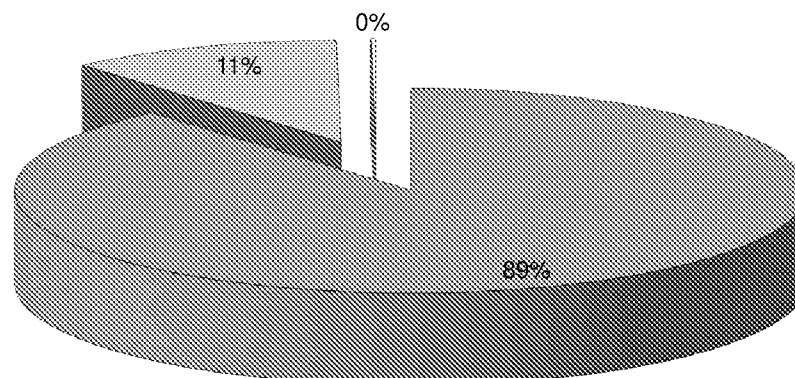
Channel 1 - Northbound

Vehicle Class

Week 1

Classes Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
28/08/2021				
7-19	1727	139	6	1872
6-22	1934	156	7	2157
6-24	2173	183	7	2344
0-24	2114	170	7	2291
29/08/2021				
7-19	1434	112	2	1548
6-22	1664	127	3	1794
6-24	1734	131	3	1868
0-24	1787	132	3	1902
30/08/2021				
7-19	1403	122	4	1529
6-22	1649	141	5	1795
6-24	1833	143	5	1981
0-24	1722	147	5	1874
31/08/2021				
7-19	2326	375	7	2697
6-22	2541	407	9	2957
6-24	2531	413	9	3009
0-24	2634	420	9	3063
01/09/2021				
7-19	1968	318	4	2290
6-22	2309	347	4	2660
6-24	2357	351	4	2712
0-24	2388	360	4	2762
02/09/2021				
7-19	1919	335	5	2260
6-22	2277	367	5	2649
6-24	2333	371	5	2709
0-24	2376	377	5	2758
03/09/2021				
7-19	2343	347	3	2693
6-22	2725	381	4	3110
6-24	2773	393	4	3202
0-24	2866	391	4	3261
Average				
7-19	1860	250	4	2114
6-22	2166	275	5	2446
6-24	2223	278	5	2506
0-24	2268	285	5	2558

Total Vehicle Class Distribution



Yapton ATC, Bilsham Road

Produced by Streetwise Services Ltd.



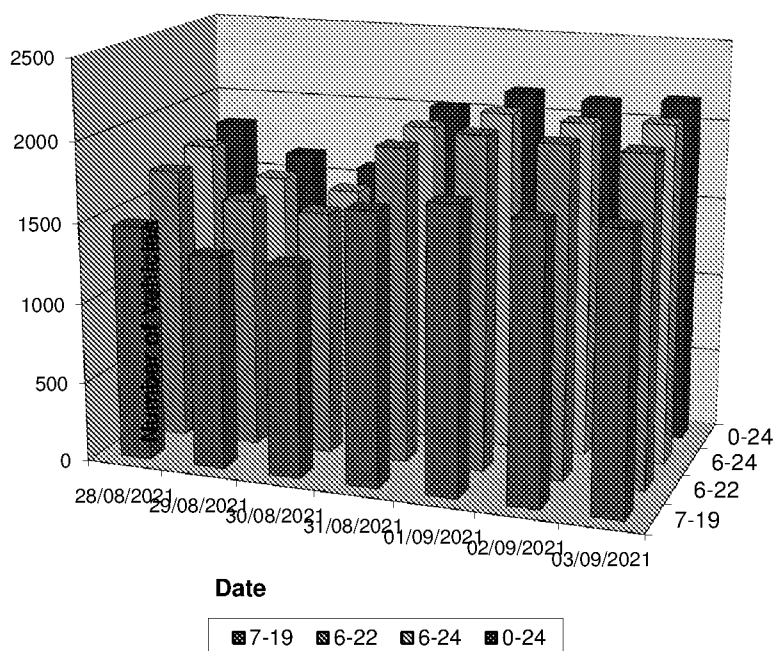
Channel 2 - Southbound

Vehicle Flow

Week 1

Hr Ending	28/08/2021 Saturday	29/08/2021 Sunday	30/08/2021 Monday	31/08/2021 Tuesday	01/09/2021 Wednesday	02/09/2021 Thursday	03/09/2021 Friday	5 Day Ave	7 Day Ave
1	18	23	15	7	14	10	10	11	14
2	16	15	2	4	3	3	4	3	7
3	6	6	11	3	2	1	4	4	5
4	4	3	1	2	4	4	6	3	3
5	5	2	4	4	2	5	9	5	4
6	7	6	9	15	19	18	16	15	13
7	23	14	17	39	48	53	47	41	34
8	55	29	33	86	95	91	90	79	68
9	108	55	61	112	105	136	130	109	101
10	130	95	80	114	135	131	130	118	118
11	161	151	124	169	135	144	143	143	147
12	167	129	133	140	176	148	137	147	147
13	120	146	122	147	129	147	129	135	134
14	135	140	125	136	147	146	148	140	140
15	130	136	141	151	150	130	149	144	141
16	104	110	124	160	163	156	160	153	140
17	114	113	133	168	168	174	173	163	149
18	130	99	122	159	204	165	160	162	148
19	114	123	117	146	163	148	161	147	139
20	106	91	85	106	127	123	120	112	108
21	66	85	64	78	88	101	94	85	82
22	44	44	40	51	39	59	63	50	49
23	41	23	25	22	26	22	33	26	27
24	24	19	7	11	13	12	43	17	18
7-19	1498	1328	1315	1688	1770	1718	1710	1640	1570
6-22	1707	1582	1521	1952	2072	2032	2034	1828	1844
6-24	1722	1597	1536	1967	2087	2047	2049	1843	1859
0-24	1826	1657	1595	2030	2155	2127	2158	2013	1938

Vehicle Flow (Channel 2)



Yapton ATC, Bilsham Road

Produced by Streetwise Services Ltd.



Channel 2 - Southbound

Average Speed

Week 1

Hr Ending	28/08/2021 Saturday	29/08/2021 Sunday	30/08/2021 Monday	31/08/2021 Tuesday	01/09/2021 Wednesday	02/09/2021 Thursday	03/09/2021 Friday
1	36.8	33.1	41.0	32.3	33.4	37.5	36.8
2	37.7	34.0	43.0	40.5	38.0	38.0	34.2
3	33.0	32.2	38.2	26.3	38.0	43.0	37.4
4	38.0	39.7	28.0	45.5	46.1	41.1	46.3
5	32.0	28.0	30.5	38.0	35.5	31.0	36.3
6	35.9	36.3	35.8	34.3	32.7	34.4	35.5
7	35.0	35.5	35.9	32.9	33.6	34.4	35.9
8	34.6	33.9	36.4	34.9	34.6	34.8	33.5
9	34.9	36.5	35.1	34.0	34.6	35.1	35.0
10	33.9	33.5	33.3	33.8	32.1	34.6	33.8
11	33.2	33.7	35.2	32.1	33.1	33.2	32.1
12	32.7	34.0	34.2	31.9	31.8	33.0	33.4
13	31.3	33.8	33.2	33.6	33.0	31.9	31.7
14	33.7	34.2	33.2	34.1	32.1	33.6	32.2
15	33.3	33.1	32.5	31.7	32.8	32.7	34.0
16	33.6	32.6	33.1	33.6	33.2	32.0	32.7
17	32.3	34.1	33.9	33.9	32.6	34.4	31.3
18	34.0	34.1	33.7	34.0	33.1	34.9	33.4
19	33.6	33.9	33.9	34.1	34.2	32.9	34.4
20	32.8	32.9	34.5	33.7	32.8	33.3	33.6
21	34.6	33.3	35.3	33.6	34.1	33.0	32.1
22	32.5	34.0	35.8	34.4	34.6	32.7	34.0
23	34.0	39.6	37.5	33.8	35.0	35.2	32.4
24	35.1	38.5	38.4	36.4	36.3	34.7	36.5

10-12	33.0	33.8	34.7	32.6	32.3	33.1	32.7
13-15	33.4	33.7	33.8	33.7	33.0	33.3	33.3
0-24	33.5	33.9	34.1	33.5	33.2	33.6	33.3

7 Day Ave 33.6

35th Percentile

Hr Ending	28/08/2021 Saturday	29/08/2021 Sunday	30/08/2021 Monday	31/08/2021 Tuesday	01/09/2021 Wednesday	02/09/2021 Thursday	03/09/2021 Friday
1	43.0	43.4	48.0	33.1	43.5	48.3	48.7
2	48.3	38.3	48.7	48.6	38.2	38.6	38.8
3	43.5	43.3	48.5	38.3	43.2	43.8	55.8
4	43.9	43.2	28.6	48.1	55.8	56.0	86.2
5	43.5	33.5	33.2	43.2	38.8	38.2	43.4
6	48.4	43.2	38.5	38.1	43.1	38.9	43.8
7	38.8	43.6	43.7	38.4	43.5	43.4	43.7
8	43.8	38.4	43.8	44.0	43.8	43.3	43.4
9	43.7	43.9	43.4	38.5	38.8	38.8	43.1
10	38.7	38.5	38.9	38.5	38.3	38.2	38.4
11	39.0	38.2	43.7	39.0	39.0	38.4	38.3
12	38.3	38.7	38.1	38.2	38.8	38.2	38.7
13	38.5	38.7	38.6	38.4	38.7	38.9	38.3
14	38.4	38.6	38.7	38.4	38.9	38.6	38.8
15	38.7	38.8	38.0	38.3	38.9	38.4	38.2
16	38.2	38.2	38.4	38.5	38.4	38.4	38.6
17	38.4	38.8	38.4	38.1	38.1	38.9	39.0
18	38.5	38.2	38.3	38.5	39.0	43.6	38.2
19	38.8	39.0	39.0	44.0	38.8	38.9	43.9
20	38.5	38.1	38.8	43.6	38.7	38.5	38.1
21	43.4	38.1	43.7	38.9	43.4	43.3	39.0
22	38.5	43.8	48.4	43.7	43.0	38.9	38.6
23	38.2	55.9	43.7	43.4	43.2	43.3	38.6
24	43.6	48.5	55.8	43.7	48.2	38.3	48.9

10-12	38.5	38.1	43.4	38.1	38.5	38.2	38.6
13-15	38.7	38.7	38.3	38.3	38.3	38.2	38.7
0-24	38.9	38.2	43.9	38.7	38.1	38.0	38.9

7 Day Ave 38.2

Yapton ATC, Bilsham Road

Produced by Streetwise Services Ltd.



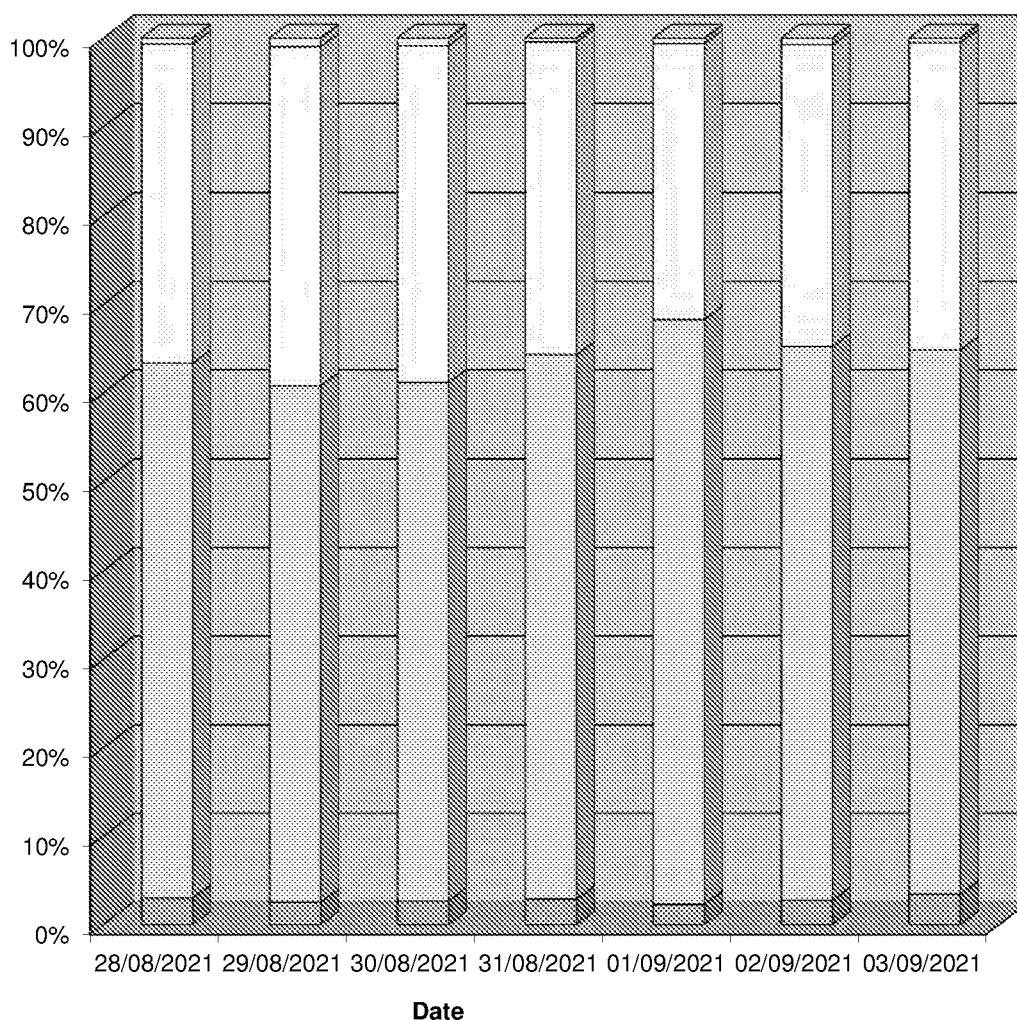
Channel 2 - Southbound

Speed Summary

Week 1

Speed (MPH)	28/08/2021 Saturday	29/08/2021 Sunday	30/08/2021 Monday	31/08/2021 Tuesday	01/09/2021 Wednesday	02/09/2021 Thursday	03/09/2021 Friday
0-20	55	42	43	59	50	59	75
21-35	1104	966	933	1247	1422	1329	1326
36-50	657	633	605	715	670	723	747
51-100	12	16	14	9	13	16	11
TOTAL	1828	1657	1595	2030	2155	2127	2159

Speed Summary (MPH)



Yapton ATC, Bilsham Road

Produced by Streetwise Services Ltd.



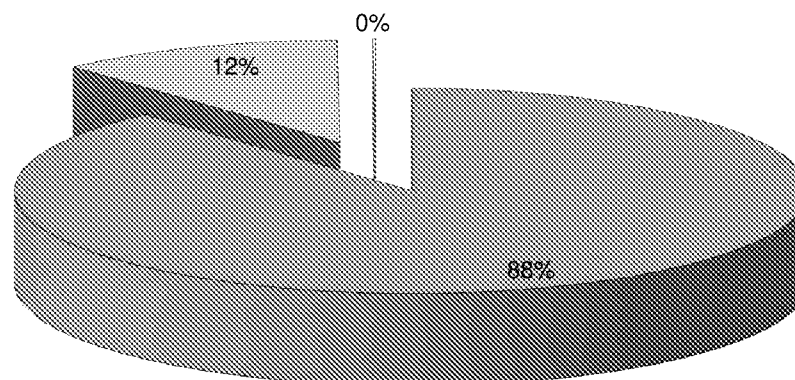
Channel 2 - Southbound

Vehicle Class

Week 1

Classes Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
28/08/2021				
7-19	1344	121	3	1468
6-22	1363	143	4	1707
6-24	1353	143	4	1772
0-24	1675	149	4	1828
29/08/2021				
7-19	1326	98	0	1326
6-22	1445	115	0	1560
6-24	1435	115	0	1602
0-24	1539	118	0	1657
30/08/2021				
7-19	1300	111	4	1315
6-22	1391	128	4	1521
6-24	1383	127	4	1553
0-24	1459	132	4	1595
31/08/2021				
7-19	1436	252	0	1688
6-22	1877	284	1	1962
6-24	1706	288	1	1995
0-24	1735	294	1	2030
01/09/2021				
7-19	1498	269	3	1770
6-22	1765	304	3	2072
6-24	1838	308	3	2111
0-24	1838	314	3	2155
02/09/2021				
7-19	1454	261	1	1716
6-22	1763	288	1	2052
6-24	1755	293	1	2056
0-24	1826	297	2	2127
03/09/2021				
7-19	1499	221	0	1710
6-22	1777	254	3	2034
6-24	1777	253	3	2110
0-24	1887	269	3	2159
Average				
7-19	1378	190	2	1570
6-22	1626	218	2	1844
6-24	1639	219	2	1890
0-24	1709	225	2	1936

Total Vehicle Class Distribution



Stopping Sight Distance Calculations (for Streets where 85th Percentile Speeds are over 60km/h)

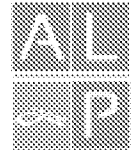
$$SSD = vt + \frac{v^2}{2(d+0.1a)}$$

	Project Number.	A361	
	Project Title.	Lamb Field	
Northbound			
Design Speed (kph) =	61.16	<u>Conversion from mph to kph</u>	
Design Speed (m/s)=	16.99		
Reaction Time (Seconds) =	2.00	Surveyed 85th %ile Speed (mph) =	38.33 mph
		Design Speed in kph =	61.16 kph
<u>Stopping Sight Distance (SSD)</u>			
Distance travelled before reacting (m) =	33.98		
Time taken to decelerate to a stop (0 kph) =	4.62		
Average speed during deceleration (m/s) =	8.49		
Distance required to decelerate to a stop (0 kph) =	39.22		
Stopping Sight Distance (m) =	<u>73.20</u>		
<u>SSD adjusted for bonnet length</u>			
Distance between the Driver and front of vehicle is typically	2.40	metres	
Stopping Sight Distance adjusted for bonnet length(m) =	75.60		

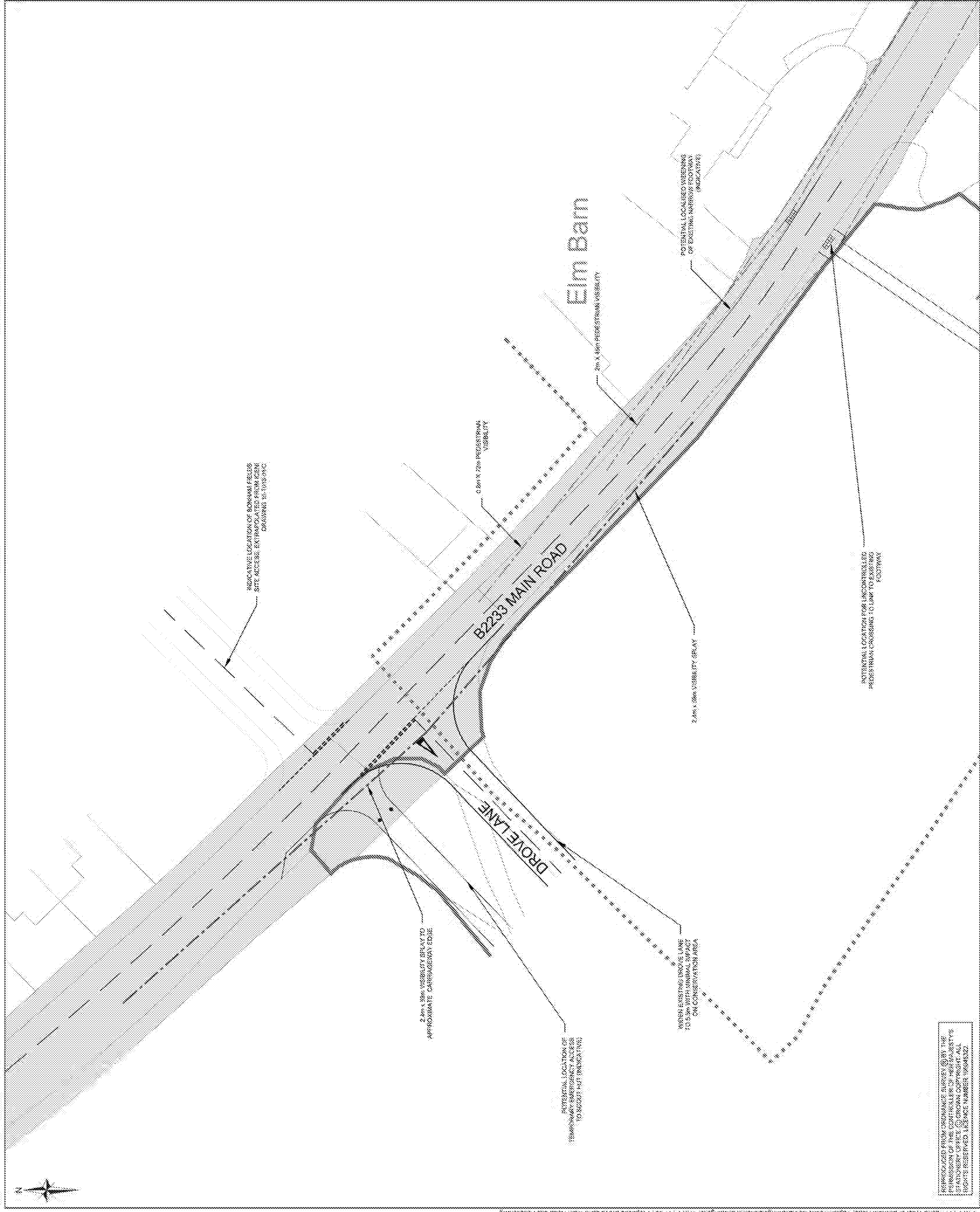
Southbound			
Design Speed (kph) =	61.16	<u>Conversion from mph to kph</u>	
Reaction Time (Seconds) =	2.00		
<u>Stopping Sight Distance (SSD)</u>			
Distance travelled before reacting (m) =	33.98	Surveyed 85th %ile Speed (mph) =	38.33 mph
Time taken to decelerate to a stop (0 kph) =	4.62	Design Speed in kph =	61.16 kph
Average speed during deceleration (m/s) =	8.49		
Distance required to decelerate to a stop (0 kph) =	39.22		
Stopping Sight Distance (m) =	<u>73.20</u>		
<u>SSD adjusted for bonnet length</u>			
Distance between the Driver and front of vehicle is typically	2.40	metres	
Stopping Sight Distance adjusted for bonnet length(m) =	75.60		

Minimum Stopping Sight Distance deduced from $2s+0.375g$

The deceleration rate of 0.375g is for a level road. A 10% gradient will increase (or decrease) the rate by around 0.1g

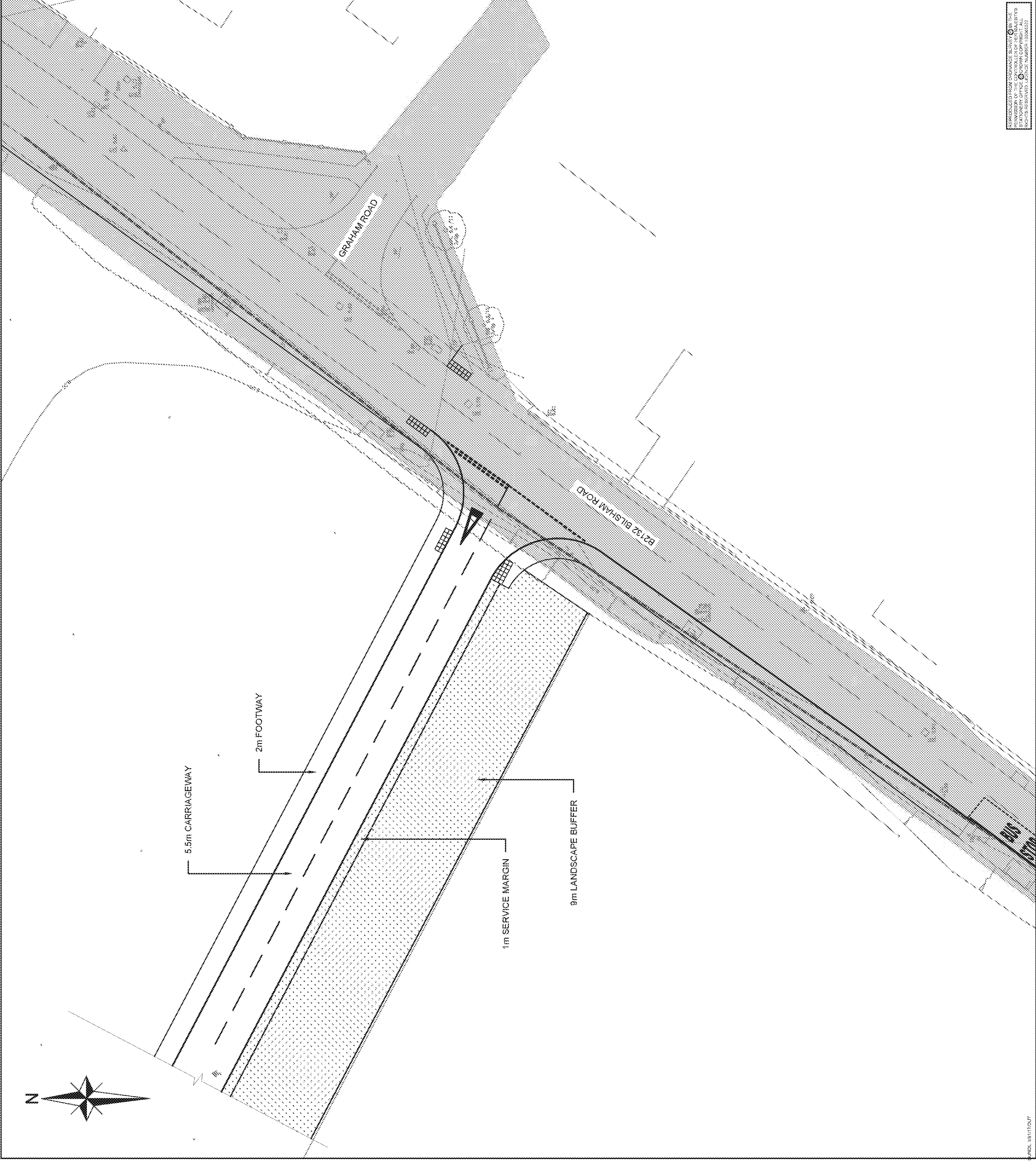


Appendix E – Cycle Link to Drove Lane

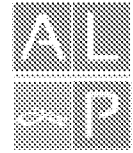


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DATE 08-01-2001 BY 60322 UCBAW/STP

[illegible]







Appendix F - Bus Timetables

MONDAY TO FRIDAY (excluding Bank Holidays)

	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
Littlehampton Anchor Springs	-	0520	-	R	-	-	0620	-	-	-	0650	-	0712	-	0732	-	0752	-	0817	-	0842	-	0905	-
Yapton Sparks Corner	-	0530	-	0600	-	-	0630	-	-	-	0702	-	0724	-	0744	-	0804	-	0829	-	0854	-	0917	-
Flansham Park Alfriston Close	-	0537	-	0607	-	0622	0637	-	0652	0702	0710	0722	0732	0742	0752	0802	0812	0822	0837	0852	0902	0915	0925	0935
Felpham Southdowns	-	0540	-	0610	-	0625	0640	-	0655	0705	0715	0727	0737	0747	0757	0807	0817	0827	0842	0857	0907	0920	0930	0940
Bognor Regis High Street [R]	0508	0548	-	0618	-	0633	0648	-	0705	0715	0725	0737	0747	0757	0807	0817	0827	0837	0852	0907	0917	0930	0940	0950
North Bersted Shops	0515	0555	-	0625	-	0643	0658	-	0715	0725	0735	0747	0757	0807	0817	0827	0837	0847	0902	0917	0927	0940	0950	1000
Chichester Bus Station [9] 	0532	0608	0632	0638	0647	0702	0715	0717	0737	0753	0803	0817	0827	0842	0852	0902	0912	0922	0932	0942	0952	1002	1012	1022
Chichester Cathedral [C1]	0535	-	0635	-	0650	0705	cc	0721	0741	0758	cc	0822	cc	0847	cc	0907	cc	0927	cc	0947	cc	1007	cc	1027
Bosham White Swan	0544	-	0644	-	0659	0714	-	0732	0752	0809	-	0833	-	0858	-	0918	-	0938	-	0958	-	1018	-	1038
Southbourne Church	0550	-	0650	-	0705	0720	-	0739	0759	0817	-	0841	-	0905	-	0925	-	0945	-	1005	-	1025	-	1045
Emsworth Square	0554	-	0654	-	0709	0724	-	0744	0804	0823	-	0847	-	0910	-	0930	-	0950	-	1010	-	1030	-	1050
Havant Bus Station [C] 	0605	-	0705	-	0720	0738	-	0758	0818	0837	-	0901	-	0924	-	0944	-	1004	-	1024	-	1044	-	1104
Hilsea Lido [E]	0615	-	0715	-	0730	0749	-	0809	0830	0850	-	0914	-	0934	-	0954	-	1014	-	1034	-	1054	-	1114
North End Junction [G]	0621	-	0721	-	0736	0756	-	0816	0837	0857	-	0921	-	0941	-	1001	-	1021	-	1041	-	1101	-	1121
Portsmouth City Centre [C] 	0631	-	0731	-	0751	0811	-	0831	0851	0911	-	0931	-	0951	-	1011	-	1031	-	1051	-	1111	-	1131
Winston Churchill Ave University	0634	-	0734	-	0754	0814	-	0834	0854	0914	-	0934	-	0954	-	1014	-	1034	-	1054	-	1114	-	1134
Portsmouth The Hard [G] 	0640	-	0740	-	0800	0820	-	0840	0900	0920	-	0940	-	1000	-	1020	-	1040	-	1100	-	1120	-	1140

For

R - Journey starts from Yapton, Rolleston Park approximately 2 minute earlier.

cc - continues to Chichester Cathedral .

MONDAY TO FRIDAY (excluding Bank Holidays)

	700	700	700	700	700		700	700	700	700	700	700		700	700	700	700	700	700	700	700	700		
														Sch										
Littlehampton Anchor Springs	0928	-	0948	-	1010	then at these times each hour	-	30	-	50	-	10	until	1330	-	-	1350	-	1410	-	1430	-	1450	-
Yapton Sparks Corner	0940	-	1000	-	1021		-	41	-	01	-	21		1341	-	-	1401	-	1421	-	1441	-	1501	-
Flansham Park Alfriston Close	0948	0958	1008	1018	1028		38	48	58	08	18	28		1348	-	1358	1408	1418	1428	1438	1448	1458	1508	1518
Felpham Southdowns	0952	1002	1012	1022	1032		42	52	02	12	22	32		1352	-	1402	1412	1422	1432	1442	1452	1502	1512	1522
Bognor Regis High Street [R]	1002	1012	1022	1032	1042		52	02	12	22	32	42		1402	-	1412	1422	1432	1442	1452	1502	1512	1522	1532
North Bersted Shops	1011	1021	1031	1041	1051		01	11	21	31	41	51		1411	-	1421	1431	1441	1451	1501	1511	1521	1531	1541
Chichester Bus Station [9] 	1032	1042	1052	1102	1112		22	32	42	52	02	12		1432	-	1442	1452	1502	1512	1522	1532	1542	1552	1602
Chichester Cathedral [C1]	00	1047	00	1107	00		27	00	47	00	07	00		00	BLS	1447	00	1507	00	1527	00	1547	00	1607
Bosham White Swan	-	1058	-	1118	-		38	-	58	-	18	-		-	1453	1458	-	1518	-	1538	-	1558	-	1618
Southbourne Church	-	1105	-	1125	-		45	-	05	-	25	-		-	1500	1505	-	1525	-	1545	-	1605	-	1625
Emsworth Square	-	1110	-	1130	-		50	-	10	-	30	-		-	1505	1510	-	1530	-	1550	-	1610	-	1630
Havant Bus Station [C] 	-	1124	-	1144	-		04	-	24	-	44	-		-	1513	1524	-	1544	-	1604	-	1624	-	1644
Hilsea Lido [E]	-	1134	-	1154	-		14	-	34	-	54	-		-	-	1534	-	1554	-	1614	-	1634	-	1654
North End Junction [G]	-	1141	-	1201	-		21	-	41	-	01	-		-	-	1541	-	1601	-	1621	-	1641	-	1701
Portsmouth City Centre [C] 	-	1151	-	1211	-		31	-	51	-	11	-		-	-	1551	-	1611	-	1631	-	1651	-	1711
Winston Churchill Ave University	-	1154	-	1214	-	34	-	54	-	14	-	-	-	1554	-	1614	-	1634	-	1654	-	1714		
Portsmouth The Hard [G]	-	1200	-	1220	-	40	-	00	-	20	-	-	-	1600	-	1620	-	1640	-	1700	-	1720		

Sett - Runs on school days only.

SLS - Departs from Bishop Luffa School at 1443.

ce - continues to Chichester Cathedral

MONDAY TO FRIDAY (excluding Bank Holidays)

	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
Littlehampton Anchor Springs	1510	-	1530	-	1550	-	1610	-	1630	-	1653	-	1715	-	1735	-	1755	-	1815	1835	1855	-	1934	2004
Yapton Sparks Corner	1521	-	1541	-	1601	-	1621	-	1641	-	1704	-	1726	-	1746	-	1806	-	1826	1846	1906	-	1943	2013
Flansham Park Alfriston Close	1528	1538	1548	1558	1608	1618	1628	1638	1648	1700	1712	1724	1734	1744	1754	1803	1813	1823	1833	1853	1913	1934	1949	2019
Felpham Southdowns	1532	1542	1552	1602	1612	1622	1632	1642	1652	1704	1716	1727	1737	1747	1757	1806	1816	1826	1836	1856	1916	1936	1951	2021
Bognor Regis High Street [R]	1542	1552	1602	1612	1622	1632	1642	1652	1702	1714	1726	1737	1747	1757	1806	1814	1824	1834	1844	1904	1924	1944	1959	2029
North Bersted Shops	1551	1601	1611	1621	1631	1641	1651	1701	1711	1723	1735	1745	1755	1805	1813	1821	1831	1841	1851	1911	1931	1951	2006	2036
Chichester Bus Station [9]	1612	1622	1632	1642	1652	1702	1712	1722	1732	1744	1754	1804	1814	1820	1829	1838	1848	1908	1904	1924	1944	2008	2021	2049
Chichester Cathedral [C1]	cc	1627	cc	1647	cc	1707	cc	1727	cc	1748	cc	1808	cc	-	-	1842	cc	1912	-	-	-	2012	cc	-
Bosham White Swan	-	1638	-	1658	-	1718	-	1738	-	1758	-	1818	-	-	-	1851	-	1921	-	-	-	2021	-	-
Southbourne Church	-	1645	-	1705	-	1725	-	1745	-	1805	-	1825	-	-	-	1857	-	1927	-	-	-	2027	-	-
Emsworth Square	-	1650	-	1710	-	1730	-	1750	-	1810	-	1830	-	-	-	1902	-	1932	-	-	-	2032	-	-
Havant Bus Station [C]	-	1704	-	1724	-	1744	-	1804	-	1820	-	1840	-	-	-	1914	-	1940	-	-	-	2040	-	-
Hilsea Lido [E]	-	1714	-	1734	-	1754	-	1814	-	-	-	-	-	-	-	1924	-	-	-	-	-	-	-	-
North End Junction [G]	-	1721	-	1741	-	1801	-	1821	-	-	-	-	-	-	-	1931	-	-	-	-	-	-	-	-
Portsmouth City Centre [C]	-	1731	-	1751	-	1811	-	1831	-	-	-	-	-	-	-	1941	-	-	-	-	-	-	-	-
Winston Churchill Ave University	-	1734	-	1754	-	1814	-	1834	-	-	-	-	-	-	-	1944	-	-	-	-	-	-	-	-
Portsmouth The Hard [G]	-	1740	-	1800	-	1820	-	1840	-	-	-	-	-	-	-	1950	-	-	-	-	-	-	-	-

For

cc - continues to Chichester Cathedral.

5555 - Connections available to Portsmouth on service 23.

MONDAY TO FRIDAY (excluding Bank Holidays)

	700	700	700	700	700	700
Littlehampton Anchor Springs	-	2034	-	2134	2234	-
Yapton Sparks Corner	-	2043	-	2143	2243	-
Flansham Park Alfriston Close	2034	2049	2134	2149	2249	0003
Felpham Southdowns	2036	2051	2136	2151	2251	0005
Bognor Regis High Street [R]	2044	2059	2144	2159	2259	0013
North Bersted Shops	2051	2106	2151	2206	2306	0020
Chichester Bus Station [9]	2108	2121	2208	2221	2321	0033
Chichester Cathedral [C1]	2112	cc	2212	cc	cc	-
Bosham White Swan	2121	-	2221	-	-	-
Southbourne Church	2127	-	2227	-	-	-
Emsworth Square	2132	-	2232	-	-	-
Havant Bus Station [C]	2140	-	2240	-	-	-
Hilsea Lido [E]	-	-	-	-	-	-
North End Junction [G]	-	-	-	-	-	-
Portsmouth City Centre [C]	-	-	-	-	-	-
Winston Churchill Ave University	-	-	-	-	-	-
Portsmouth The Hard [G]	-	-	-	-	-	-

SATURDAYS

	700	700	700	700	700	700	700	700	700	700
Littlehampton Anchor Springs	-	-	-	-	-	-	0655	-	0725	-
Yapton Sparks Corner	-	0609	-	-	0649	-	0706	-	0736	-
Flansham Park Alfriston Close	-	0616	-	-	0656	-	0713	0728	0743	0758
Felpham Southdowns	-	0619	-	-	0659	-	0717	0732	0747	0802
Bognor Regis High Street [R]	0558	0628	-	-	0708	-	0727	0742	0757	0812
North Bersted Shops	0606	0636	-	-	0716	-	0736	0751	0806	0821
Chichester Bus Station [9]	0627	0650	0657	0727	0732	0752	0757	0812	0827	0842
Chichester Cathedral [C1]	0630	cc	0700	0730	cc	0755	cc	0817	cc	0847
Bosham White Swan	0639	-	0709	0739	-	0804	-	0828	-	0858
Southbourne Church	0645	-	0715	0745	-	0810	-	0835	-	0905
Emsworth Square	0649	-	0719	0749	-	0814	-	0840	-	0910
Havant Bus Station [C]	0700	-	0730	0800	-	0825	-	0854	-	0924
Hilsea Lido [E]	0709	-	0739	0809	-	0834	-	0904	-	0934
North End Junction [G]	0714	-	0744	0814	-	0841	-	0911	-	0941
Portsmouth City Centre [C]	0723	-	0753	0823	-	0851	-	0921	-	0951
Winston Churchill Ave University	0726	-	0756	0826	-	0854	-	0924	-	0954
Portsmouth The Hard [G]	0730	-	0800	0830	-	0900	-	0930	-	1000

For

cc - continues to Chichester Cathedral.

5555 - Connections available to Portsmouth on service 23.

SATURDAYS

	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
Littlehampton Anchor Springs	0755	-	25	-	55	1555	-	1625	-	1655	-	1730	1755	-	1834	1904	-	1934	-	2034	-		
Yapton Sparks Corner	0806	-	36	-	06	1606	-	1636	-	1706	-	1741	1806	-	1843	1913	-	1943	-	2043	-		
Flansham Park Alfriston Close	0813	28	43	58	13	1613	1628	1643	1658	1713	1728	1748	1813	1834	1849	1919	1934	1949	2034	2049	2134		
Felpham Southdowns	0817	32	47	02	17	1617	1632	1647	1702	1717	1732	1752	1816	1836	1851	1921	1936	1951	2036	2051	2136		
Bognor Regis High Street [R]	0827	42	57	12	27	1627	1642	1657	1712	1727	1742	1802	1825	1844	1859	1929	1944	1959	2044	2059	2144		
North Bersted Shops	0836	51	06	21	36	1636	1651	1706	1721	1736	1751	1811	1833	1851	1906	1936	1951	2006	2051	2106	2151		
Chichester Bus Station [9]	0857	12	27	42	57	1657	1712	1727	1742	1757	1812	1828	1846	1908	1921	1949	2008	2021	2108	2121	2208		
Chichester Cathedral [C1]	cc	17	cc	47	cc	cc	1717	cc	1747	cc	1817	-	-	1912	cc	-	2012	cc	2112	cc	2212		
Bosham White Swan	-	28	-	58	-	-	1728	-	1758	-	1828	-	-	1921	-	-	2021	-	2121	-	2221		
Southbourne Church	-	35	-	05	-	-	1735	-	1805	-	1835	-	-	1927	-	-	2027	-	2127	-	2227		
Emsworth Square	-	40	-	10	-	-	1740	-	1810	-	1840	-	-	1932	-	-	2032	-	2132	-	2232		
Havant Bus Station [C]	-	54	-	24	-	-	1754	-	1829	-	1854	-	-	1940	-	-	2040	-	2140	-	2240		
Hilsea Lido [E]	-	04	-	34	-	-	1804	-	-	-	1904	-	-	-	-	-	-	-	-	-	-		
North End Junction [G]	-	11	-	41	-	-	1811	-	-	-	1911	-	-	-	-	-	-	-	-	-	-		
Portsmouth City Centre [C]	-	21	-	51	-	-	1821	-	-	-	1921	-	-	-	-	-	-	-	-	-	-		
Winston Churchill Ave University	-	24	-	54	-	-	1824	-	-	-	1924	-	-	-	-	-	-	-	-	-	-		
Portsmouth The Hard [G]	-	30	-	00	-	-	1830	-	-	-	1930	-	-	-	-	-	-	-	-	-	-		

SATURDAYS

	700	700	700
Littlehampton Anchor Springs	2134	2234	-
Yapton Sparks Corner	2143	2243	-
Flansham Park Alfriston Close	2149	2249	0003
Felpham Southdowns	2151	2251	0005
Bognor Regis High Street [R]	2159	2259	0013
North Bersted Shops	2206	2306	0020
Chichester Bus Station [9]	2221	2321	0033
Chichester Cathedral [C1]	cc	cc	-

Key

cc - continues to Chichester Cathedral.

0000 - Connections available to Portsmouth on service 23.

SUNDAYS (Including Bank Holidays)

	700	700	700	700	700	700	700	700	700	700		700	700	700	700		700	700	700	700
Littlehampton Anchor Springs	-	-	-	-	-	-	-	-	0745	-	0815	-	45	-	15	-	-	1445	-	1515
Yapton Sparks Corner	-	-	-	-	-	-	-	-	0755	-	0825	-	55	-	25	-	-	1455	-	1525
Flansham Park Alfriston Close	-	-	-	-	-	-	0732	-	0802	-	0832	-	02	-	32	-	-	1502	-	1532
Felpham Southdowns	-	-	-	-	-	-	0736	-	0806	-	0836	-	06	-	36	-	-	1506	-	1536
Bognor Regis High Street [R]	-	-	-	-	-	-	0746	-	0816	-	0846	-	16	-	46	-	-	1516	-	1546
North Bersted Shops	-	-	-	-	-	-	0754	-	0824	-	0854	-	24	-	54	-	-	1524	-	1554
Chichester Bus Station [9]	-	0710	-	0740	0800	0813	0830	0843	0900	0913		30	43	00	13		1530	1543	1600	1613
Chichester Cathedral [C1]	-	0714	-	0744	0805	cc	0835	cc	0905	-		35	cc	05	cc		1535	cc	1605	cc
Bosham White Swan	-	0724	-	0754	0816	-	0846	-	0916	-		46	-	16	-	until	1546	-	1616	-
Southbourne Church	-	0730	-	0800	0823	-	0853	-	0923	-		53	-	23	-		1553	-	1623	-
Emsworth Square	-	0735	-	0805	0828	-	0858	-	0928	-		58	-	28	-		1558	-	1628	-
Havant Bus Station [C]	0718	0744	0748	0818	0842	-	0912	-	0942	-		12	-	42	-		1612	-	1642	-
Hilsea Lido [E]	0727	-	0757	0827	0852	-	0922	-	0952	-		22	-	52	-		1622	-	1652	-
North End Junction [G]	0733	-	0803	0833	0859	-	0929	-	0959	-		29	-	59	-		1629	-	1659	-
Portsmouth City Centre [C]	0741	-	0811	0841	0909	-	0939	-	1009	-		39	-	09	-		1639	-	1709	-
Winston Churchill Ave University	0744	-	0814	0844	0912	-	0942	-	1012	-		42	-	12	-		1642	-	1712	-
Portsmouth The Hard [G]	0748	-	0818	0848	0918	-	0948	-	1018	-		48	-	18	-		1648	-	1718	-

cc - continues to Chichester Cathedral .

SUNDAYS (Including Bank Holidays)

	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
Littlehampton Anchor Springs	1545	-	1615	1645	-	1715	1745	-	1815	1835	1855	-	1955	-	2055
Yapton Sparks Corner	1555	-	1625	1655	-	1725	1755	-	1825	1845	1904	-	2004	-	2104
Flansham Park Alfriston Close	1602	-	1632	1702	-	1732	1802	-	1832	1852	1911	-	2011	-	2111
Felpham Southdowns	1606	-	1636	1706	-	1736	1806	-	1836	1856	1914	-	2014	-	2114
Bognor Regis High Street [R]	1616	-	1646	1716	-	1746	1816	-	1846	1906	1922	-	2022	-	2122
North Bersted Shops	1624	-	1654	1724	-	1754	1824	-	1854	1914	1930	-	2030	-	2130
Chichester Bus Station [9]	1643	1700	1713	1743	1800	1813	1843	1900	1913	1929	1945	2000	2043	2100	2143
Chichester Cathedral [C1]	cc	1705	cc	cc	1805	cc	cc	1904	cc	-	cc	2004	-	2104	-
Bosham White Swan	-	1716	-	-	1816	-	-	1913	-	-	-	2013	-	2113	-
Southbourne Church	-	1723	-	-	1823	-	-	1919	-	-	-	2019	-	2119	-
Emsworth Square	-	1728	-	-	1828	-	-	1924	-	-	-	2024	-	2124	-
Havant Bus Station [C]	-	1742	-	-	1842	-	-	1939	-	-	-	2039	-	2139	-
Hilsea Lido [E]	-	1752	-	-	1852	-	-	-	-	-	-	-	-	-	-
North End Junction [G]	-	1759	-	-	1859	-	-	-	-	-	-	-	-	-	-
Portsmouth City Centre [C]	-	1809	-	-	1909	-	-	-	-	-	-	-	-	-	-
Winston Churchill Ave University	-	1812	-	-	1912	-	-	-	-	-	-	-	-	-	-
Portsmouth The Hard [G]	-	1818	-	-	1918	-	-	-	-	-	-	-	-	-	-

- continues to Chichester Cathedral.

cc - Connections available to Portsmouth on service 23.

	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
												Sch									
Portsmouth The Hard [G]	-	-	-	-	-	-	-	-	-	-	0627	-	-	0647	-	0707	-	0727	-	0752	-
Winston Churchill Ave University	-	-	-	-	-	-	-	-	-	-	0631	-	-	0652	-	0712	-	0732	-	0757	-
Portsmouth City Centre [D]	-	-	-	-	-	-	0555	-	0615	-	0635	-	-	0658	-	0718	-	0738	-	0803	-
North End Junction [C]	-	-	-	-	-	-	0603	-	0623	-	0643	-	-	0708	-	0728	-	0748	-	0813	-
Hilsea Lido [C]	-	-	-	-	-	-	0609	-	0629	-	0649	-	-	0714	-	0734	-	0754	-	0819	-
Havant Bus Station [H]	-	-	-	-	0600	-	0620	-	0640	-	0700	0715	-	0728	-	0748	-	0808	-	0834	-
Emsworth By-Pass	-	-	-	-	0608	-	0628	-	0648	-	0708	0723	-	0737	-	0757	-	0817	-	0843	-
Southbourne Church	-	-	-	-	0613	-	0633	-	0653	-	0713	0728	-	0742	-	0802	-	0822	-	0848	-
Bosham White Swan	-	-	-	-	0620	-	0640	-	0700	-	0720	0735	-	0750	-	0810	-	0830	-	0855	-
Chichester Cathedral [P]	-	-	-	-	0630	-	0650	-	0713	0723	0733	ELS	-	0805	0815	0825	0835	0845	0857	0909	0919
Chichester Bus Station [8]	0520	0551	0611	0626	0636	0646	0656	0706	0721	0731	0741	-	0756	0813	0823	0833	0843	0853	0905	0917	0927
North Bersted Shops	0533	0605	0625	0641	0652	0702	0713	0723	0738	0748	0758	-	0813	0830	0840	0850	0900	0910	0922	0934	0944
Bognor Regis High Street [C]	0543	0615	0635	0651	0703	0713	0724	0734	0749	0759	0809	-	0824	0841	0851	0901	0911	0921	0933	0945	0955
Felpham Southdowns	0550	0622	0642	0658	0710	0720	0732	0742	0757	0807	0817	-	0832	0849	0859	0909	0919	0929	0941	0953	1003
Flansham Park Alfriston Close	0553	0625	0645	0702	F	0724	F	0746	F	0811	F	-	0836	F	0903	F	0922	F	0944	F	1006
Yapton Sparks Corner	0600	0632	0652	0710	-	0732	-	0755	-	0820	-	-	0845	-	0912	-	0931	-	0953	-	1014
Littlehampton Anchor Springs	0610	0642	0702	0722	-	0745	-	0810	-	0835	-	-	0900	-	0923	-	0943	-	1005	-	1025

8 - Continues to Flansham Park.

MONDAY TO FRIDAY (excluding Bank Holidays)

	700	700	700	700		700	700	700	700	700	700		700	700	700	700	700	700	700	700	700
Portsmouth The Hard [G]	0812	-	0832	-	then at these times each hour	52	-	12	-	32	-	until	1552	-	1612	-	1632	-	1652	1712	-
W.Churchill Ave University	0817	-	0837	-		57	-	17	-	37	-		1557	-	1617	-	1637	-	1657	1717	-
Portsmouth City Centre [D]	0823	-	0843	-		03	-	23	-	43	-		1603	-	1623	-	1643	-	1703	1723	-
North End Junction [C]	0833	-	0853	-		13	-	33	-	53	-		1613	-	1633	-	1653	-	1713	1733	-
Hilsea Lido [C]	0839	-	0859	-		19	-	39	-	59	-		1619	-	1639	-	1659	-	1719	1739	-
Havant Bus Station [H]	0854	-	0914	-		34	-	54	-	14	-		1634	-	1654	-	1714	-	1734	1752	-
Emsworth By-Pass	0903	-	0923	-		43	-	03	-	23	-		1643	-	1703	-	1723	-	1743	1800	-
Southbourne Church	0908	-	0928	-		48	-	08	-	28	-		1648	-	1708	-	1728	-	1748	1805	-
Bosham White Swan	0915	-	0935	-		55	-	15	-	35	-		1655	-	1715	-	1735	-	1755	1811	-
Chichester Cathedral [P]	0929	0939	0949	0959		09	19	29	39	49	59		1709	1719	1729	1739	1749	1759	1809	1821	1825
Chichester Bus Station [8]	0937	0947	0957	1007		17	27	37	47	57	07		1717	1727	1737	1747	1757	1807	1817	1824	1832
North Bersted Shops	0954	1004	1014	1024		34	44	54	04	14	24		1734	1744	1754	1804	1814	1824	1834	-	1846
Bognor Regis High Street [C]	1005	1015	1025	1035		45	55	05	15	25	35		1745	1755	1805	1815	1825	1835	1844	-	1854
Felpham Southdowns	1013	1023	1033	1043		53	03	13	23	33	43		1753	1803	1813	1823	1833	1843	1851	-	1900
Flansham Park Alfriston Close	F	1026	F	1046		F	06	F	26	F	46		F	1806	F	1826	F	1846	F	-	1903
Yapton Sparks Corner	-	1034	-	1054		-	14	-	34	-	54		-	1814	-	1834	-	1854	-	-	1910
Littlehampton Anchor Springs	-	1045	-	1105		-	25	-	45	-	05		-	1825	-	1845	-	1905	-	-	1920

F - Continues to Flansham Park.

MONDAY TO FRIDAY (excluding Bank Holidays)

	700	700	700	700	700	700	700	700	700	700	700
Portsmouth The Hard [G] 	1732	1752	-	1812	-	1852	-	1952	-	-	-
W.Churchill Ave University	1737	1756	-	1816	-	1856	-	1956	-	-	-
Portsmouth City Centre [D] 	1743	1800	-	1820	-	1900	-	2000	-	-	-
North End Junction [C]	1753	1809	-	1829	-	1909	-	2009	-	-	-
Hilsea Lido [C]	1759	1814	-	1834	-	1914	-	2014	-	-	-
Havant Bus Station [H] 	1811	1826	-	1846	-	1926	-	2026	-	-	-
Emsworth By-Pass	1819	1834	-	1854	-	1934	-	2034	-	-	-
Southbourne Church	1824	1839	-	1859	-	1939	-	2039	-	-	-
Bosham White Swan	1830	1845	-	1905	-	1945	-	2045	-	-	-
Chichester Cathedral [P]	1840	1855	1855	1915	1925	1955	2025	2055	2125	2225	2325
Chichester Bus Station [8] 	1847	1858	1902	1918	1932	2002	2032	2102	2132	2232	2332
North Bersted Shops	1901	-	1916	-	1946	2016	2046	2116	2146	2246	2346
Bognor Regis High Street [C]	1909	-	1924	-	1954	2024	2054	2124	2154	2254	2354
Felpham Southdowns	1915	-	1930	-	2000	2030	2100	2130	2200	2300	2400
Flansham Park , Alfriston Close	F	-	1933	-	2003	F	2103	F	2203	F	F
Yapton , Sparks Corner	-	-	1940	-	2010	-	2110	-	2210	-	-
Littlehampton , Anchor Springs	-	-	1950	-	2020	-	2120	-	2220	-	-

F -

F - Continues to Flansham Park.

SATURDAYS

	700	700	700	700	700	700	700	700	700	700	700	700	700		700	700	700	700		700	700
Portsmouth The Hard [G]	-	-	-	-	-	-	0632	-	-	-	0712	-	0742	then at these times each hour	-	12	-	42	until	-	1612
W.Churchill Ave University	-	-	-	-	-	-	0635	-	-	-	0717	-	0747		-	17	-	47		-	1617
Portsmouth City Centre [D]	-	-	-	-	-	-	0639	-	-	-	0723	-	0753		-	23	-	53		-	1623
North End Junction [C]	-	-	-	-	-	-	0647	-	-	-	0733	-	0803		-	33	-	03		-	1633
Hilsea Lido [C]	-	-	-	-	-	-	0652	-	-	-	0739	-	0809		-	39	-	09		-	1639
Havant Bus Station [H]	-	-	0609	-	0639	-	0704	-	-	-	0754	-	0824		-	54	-	24		-	1654
Emsworth By-Pass	-	-	0618	-	0648	-	0713	-	-	-	0803	-	0833		-	03	-	33		-	1703
Southbourne Church	-	-	0623	-	0653	-	0718	-	-	-	0808	-	0838		-	08	-	38		-	1708
Bosham White Swan	-	-	0629	-	0659	-	0724	-	-	-	0815	-	0845		-	15	-	45		-	1715
Chichester Cathedral [P]	-	-	0639	0654	0709	-	0734	0744	-	0814	0829	0844	0859		14	29	44	59		-	1714
Chichester Bus Station [B]	0602	0632	0647	0702	0717	0732	0742	0752	0807	0822	0837	0852	0907	22	37	52	07	-	1722	1737	
North Bersted Shops	0616	0646	0701	0716	0731	0746	0759	0809	0824	0839	0854	0909	0924	39	54	09	24	-	1739	1754	
Bognor Regis High Street [C]	0626	0656	0711	0726	0741	0756	0810	0820	0835	0850	0905	0920	0935	50	05	20	35	-	1750	1805	
Felpham Southdowns	0633	0703	0718	0733	0748	0803	0818	0828	0843	0858	0913	0928	0943	58	13	28	43	-	1758	1813	
Flansham Park Alfriston Close	0636	0706	F	0736	F	0806	F	0831	F	0901	F	0931	F	01	F	31	F	-	1801	F	
Yapton Sparks Corner	0643	0713	-	0743	-	0813	-	0839	-	0909	-	0939	-	09	-	39	-	-	1809	-	
Littlehampton Anchor Springs	0653	0723	-	0753	-	0823	-	0850	-	0920	-	0950	-	20	-	50	-	-	1820	-	

F -

F - Continues to Flansham Park.

SATURDAYS

	700	700	700	700	700	700	700	700	700	700	700	700	700
Portsmouth The Hard [G] 	-	1642	-	1712	1742	1812	-	1852	-	1952	-	-	-
W.Churchill Ave University	-	1647	-	1717	1747	1817	-	1856	-	1956	-	-	-
Portsmouth City Centre [D] 	-	1653	-	1723	1753	1823	-	1900	-	2000	-	-	-
North End Junction [C]	-	1703	-	1733	1803	1833	-	1909	-	2009	-	-	-
Hilsea Lido [C]	-	1709	-	1739	1809	1839	-	1914	-	2014	-	-	-
Havant Bus Station [H] 	-	1724	-	1754	1824	1854	-	1926	-	2026	-	-	-
Emsworth By-Pass	-	1733	-	1803	1833	1903	-	1934	-	2034	-	-	-
Southbourne Church	-	1738	-	1808	1838	1908	-	1939	-	2039	-	-	-
Bosham White Swan	-	1745	-	1815	1845	1915	-	1945	-	2045	-	-	-
Chichester Cathedral [P]	1744	1759	1819	1829	1855	1925	1925	1955	2025	2055	2125	2225	2325
Chichester Bus Station [8] 	1752	1807	1827	1837	1902	1928	1932	2002	2032	2102	2132	2232	2332
North Bersted Shops	1809	1824	1842	1852	1916	-	1946	2016	2046	2116	2146	2246	2346
Bognor Regis High Street [C]	1820	1835	1852	1902	1924	-	1954	2024	2054	2124	2154	2254	2354
Felpham Southdowns	1828	1843	1859	1908	1930	-	2000	2030	2100	2130	2200	2300	2400
Flansham Park Alfriston Close	1831	F	1902	F	F	-	2003	F	2103	F	2203	F	F
Yapton Sparks Corner	1839	-	1909	-	-	-	2010	-	2110	-	2210	-	-
Littlehampton Anchor Springs	1850	-	1920	-	-	-	2020	-	2120	-	2220	-	-

F -

F - Continues to Flansham Park.

SUNDAYS (Including Bank Holidays)

	700	700	700	700	700	700	700	700	700	700		700	700	700	700		700	700	700	700	700
Portsmouth The Hard [G]	-	-	-	-	-	-	-	0730	-	0800	then at these times each hour	-	30	-	00	until	-	1530	-	1600	-
W.Churchill Ave University	-	-	-	-	-	-	-	0735	-	0805		-	35	-	05		-	1535	-	1605	-
Portsmouth City Centre [D]	-	-	-	-	-	-	-	0741	-	0811		-	41	-	11		-	1541	-	1611	-
North End Junction [C]	-	-	-	-	-	-	-	0751	-	0821		-	51	-	21		-	1551	-	1621	-
Hilsea Lido [C]	-	-	-	-	-	-	-	0757	-	0827		-	57	-	27		-	1557	-	1627	-
Havant Bus Station [H]	-	-	-	0718	-	0748	-	0812	-	0842		-	12	-	42		-	1612	-	1642	-
Emsworth By-Pass	-	-	-	0727	-	0757	-	0821	-	0851		-	21	-	51		-	1621	-	1651	-
Southbourne Church	-	-	-	0731	-	0801	-	0826	-	0856		-	26	-	56		-	1626	-	1656	-
Bosham White Swan	-	-	-	0737	-	0807	-	0833	-	0903		-	33	-	03		-	1633	-	1703	-
Chichester Cathedral [P]	-	-	-	0747	-	0817	0822	0847	0852	0917		22	47	52	17		1622	1647	1652	1717	1722
Chichester Bus Station [8]	0640	0710	0740	0751	0800	0821	0830	0851	0900	0921		30	51	00	21		1630	1651	1700	1721	1730
North Bersted Shops	0654	0724	0754	-	0816	-	0846	-	0916	-		46	-	16	-		1646	-	1716	-	1746
Bognor Regis High Street [C]	0702	0732	0802	-	0829	-	0859	-	0929	-	59	-	29	-	1659	-	1729	-	1759		
Felpham Southdowns	0709	0739	0809	-	0837	-	0907	-	0937	-	07	-	37	-	1707	-	1737	-	1807		
Flansham Park, Alfriston Close	0712	0742	0812	-	0840	-	0910	-	0940	-	10	-	40	-	1710	-	1740	-	1810		
Yapton Sparks Corner	0719	0749	0819	-	0848	-	0918	-	0948	-	18	-	48	-	1718	-	1748	-	1818		
Littlehampton Anchor Springs	0729	0759	0829	-	0859	-	0929	-	0959	-	29	-	59	-	1729	-	1759	-	1829		

SUNDAYS (Including Bank Holidays)

	700	700	700	700	700	700	700	700	700
Portsmouth The Hard [G] 	1630	-	-	1730	-	-	1830	-	1930
W.Churchill Ave University	1635	-	-	1735	-	-	1835	-	1935
Portsmouth , City Centre [D] 	1641	-	-	1741	-	-	1841	-	1941
North End Junction [C]	1651	-	-	1751	-	-	1851	-	1951
Hilsea Lido [C]	1657	-	-	1757	-	-	1857	-	1957
Havant Bus Station [H] 	1712	-	-	1812	-	-	1912	-	2012
Emsworth By-Pass	1721	-	-	1821	-	-	1921	-	2021
Southbourne Church	1726	-	-	1826	-	-	1926	-	2026
Bosham White Swan	1733	-	-	1833	-	-	1933	-	2033
Chichester Cathedral [P]	1747	1752	1822	1847	1852	1922	1947	1952	2047
Chichester Bus Station [8] 	1751	1800	1830	1851	1900	1930	1951	2000	2051
North Bersted Shops	-	1814	1844	-	1914	1944	-	2014	-
Bognor Regis High Street [C]	-	1824	1854	-	1924	1954	-	2024	-
Felpham Southdowns	-	1830	1900	-	1930	2000	-	2030	-
Flansham Park Alfriston Close	-	1833	1903	-	1933	2003	-	2033	-
Yapton Sparks Corner	-	1839	1909	-	1939	2009	-	2039	-
Littlehampton Anchor Springs	-	1849	YRP	-	1949	YRP	-	2049	-

Key

YRP - Journeys continue to Yapton, Rollaston Park arriving approx 2 minutes later.