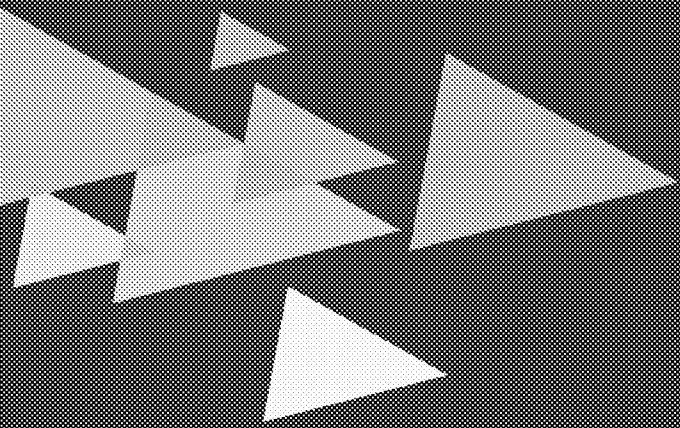




Proposed Residential Development
St Mary's Park, Yapton

Transport Assessment

For

Keith Langmead

Document Control Sheet

Transport Assessment

St Mary's Park, Yapton

Keith Langmead

This document has been issued and amended as follows:

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1.0 Introduction

- 1.1 This Transport Assessment has been prepared on behalf of Keith Langmead to accompany an outline planning application for:

"10.5 hectares of residential development with vehicular access from Ford Lane and pedestrian/cycle and emergency access only onto North End Road (comprising up to 250 dwellings (30% to be affordable) together with ancillary open space and landscaping) and 14.9 hectares of public open space development to be laid out as public parkland and landscaped green corridors."

- 1.2 The site is located approximately 750 metres to the north of Yapton village centre within the administrative boundaries of Arun District Council and West Sussex County Council (WSCC). The local highway network is focused around North End Road, which connects the site with the village centre to the south and the strategic highway network to the north via Yapton Lane and Ford Lane.

- 1.3 At present the site is undeveloped, but is located immediately to the north of the existing built-up area of Yapton. In this regard, the proposals that are assessed in this report form a natural extension to Yapton. The access strategy for the proposed development comprises the construction of two new priority controlled junctions on Ford Lane. In addition to the new vehicular access on Ford Lane, the proposals also make provision for a new pedestrian refuge island that enhances connectivity to Yapton Church of England School. This facility will supplement a pedestrian/cycle access on North End Road, the form and location of which will be fixed at the reserved matters stage having regard to site layout plan.

- 1.4 The site is accessible by the more sustainable modes of travel including, foot, cycle and public transport. Existing footways provided adjacent to North End Road link the site to nearby bus stops that provide connections to the principle towns of the south coast, including Brighton, Worthing, Littlehampton, Bognor Regis and Chichester, along with several of the other Six Village settlements:, Barnham, Eastergate and Westergate. Moreover, it is possible to access rail services that connect the south coast with London from Barnham railway station. The footways that currently comprise the local pedestrian network connect the site with the main commercial area of Yapton village centre, and a range of other community facilities including a school, key local employment centres, a doctor's surgery and local shops.

- 1.5 This report, which has been prepared in accordance with current best practice guidance prepared by the Department for Transport and WSCC, demonstrates that:

- ✧ The site accords with national, regional and local policies relevant to transport;
- ✧ The site is accessible by public transport, walking and cycling;
- ✧ The highway network is not subject to any defects that lead to an abnormally high accident rate;
- ✧ Suitable and appropriate access to the site can be achieved from Ford Lane and North End Road that accords with current best practice guidelines; and,
- ✧ The levels of traffic associated with the proposals will not lead to any demonstrable harm being caused to the existing operation and free flow of traffic on the adjoining highway network.

- 1.6 Following this introduction the Transport Assessment is split into seven sections as follows:

- ✧ Section 2 outlines the transport planning policies that are considered to be pertinent to this application.
- ✧ Section 3 considers the existing use of the site, reviews the accessibility of the site by all modes of transport and assesses local road safety records.
- ✧ Section 4 provides an overview of the proposed development together with the details related to the access, parking and servicing strategies that will be adopted.

-
- » Section 5 assesses the trip generating potential of the proposals by all travel modes, and outlines the likely origin and destinations of the trips associated with the development.
 - » Section 6 presents the likely traffic impact associated with the proposals upon the local highway network.
 - » Section 7 outlines the Heads of Terms for the Residential Travel Plan that will be operated at the proposed development.
 - » Section 8 summarises the key findings and conclusions of the report.

2.0 Transportation Policy Context

Overview

- 2.1 There are a number of documents that contain planning policies relevant to transport. The key policy documents which set the context for the development proposals are as follows:
- » National Planning Policy Framework – March 2012; and,
 - » The Arun District Council Local Development Plan.
- 2.2 It should be noted that The South East Plan was formally revoked on Monday 25th March 2013 under Statutory Instrument No. 427 (2013) and therefore no longer forms part of the development plan for the District. On this basis, no reference is made to these policies within this report.

National Planning Policy Guidance

- 2.3 The National Planning Policy Framework (NPPF) was published on 27th March 2012, and replaces the previous national planning policies that were set out in the various Planning Policy Guidance Notes/Statements. With regard to transport, the NPPF replaces policy contained within PPG13 (Transport).
- 2.4 The NPPF sets out a presumption in favour of sustainable development that recognises the importance of transport policies in facilitating sustainable development, and that planning decisions should have regard to local circumstances. In this regard, paragraph 32 of the NPPF states:

"All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether:

- *The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;*
- *Safe and suitable access to the site can be achieved for all people; and,*
- *Improvements can be undertaken within the transport network that cost effectively limit the impacts of the development."*

- 2.5 In promoting sustainable transport, the document identifies at paragraph 29 that:

"The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel. However, the Government recognises that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban to rural areas."

- 2.6 Moreover, paragraph 30 states that:

"In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport."

- 2.7 Furthermore, paragraph 32 states that:

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

The Arun District Council Local Development Plan

- 2.8 Planning applications within Yapton are assessed against the planning policies that are saved from the adopted Arun District Local Plan (ADLP). The transportation policies that are relevant to the proposed development are as follows:

- ✧ *ADLP Policy GEN8 – Development and the Provision of Infrastructure:* New developments should be appropriate in scale to the local transport infrastructure.
- ✧ *ADLP Policy GEN12 – Parking in New Development:* New developments should also provide adequate levels of parking.
- ✧ *ADLP Policy GEN14 – Public Transport:* Where appropriate, new developments will be expected to make provision for public transport facilities. Contributions may be sought towards the costs of improvements if these are required to make a development acceptable in transportation terms.
- ✧ *ADLP Policy GEN15 – Cycling and Walking:* New developments are required to provide safe and attractive facilities for cyclists and pedestrians that link the site with the surrounding area.

2.9 Having regard to ADLP Policy GEN12, it is noteworthy that car parking requirements within Yapton are calculated on a site-specific basis using a '*Car Parking Demand Calculator*' developed by WSCC. This calculator, which is based upon Census data, takes into account the dwelling size (rooms); unit type (houses or flats); unit tenure (private or local authority/housing association); and the way parking is to be provided (allocated or unallocated).

2.10 In accordance with ADLP Policy GEN12, new developments are also expected to provide an adequate number of cycle parking spaces. With respect to residential developments the WSCC document entitled '*Revised County Parking Standards and Transport Contributions Methodology*' considers that no specific cycle parking spaces are required if a garage of sufficient size is provided. In the absence of a garage, the same guidance notes that one bed dwellings should provide one space, with two or more bedroom dwellings providing two spaces. Visitor parking should be provided at a rate of one space per eight dwellings.

Summary

2.11 On the basis of the above review it is evident that the location of an application site in relation to sustainable modes of transport is a key consideration when assessing the acceptability of a proposed development. Furthermore, developers are required to provide appropriate levels of car and cycle parking that meet anticipated demands and encourage residents to travel by modes other than the private car. Similarly, developers are also required to provide pedestrian links to the wider network to further encourage the use of more sustainable modes of transport.

2.12 The following sections of this report therefore review the accessibility of the site and evaluate whether the development proposals will encourage the use of sustainable modes of transport. In addition to this, a further assessment has been undertaken to establish the impact of the proposals upon the local highway network.

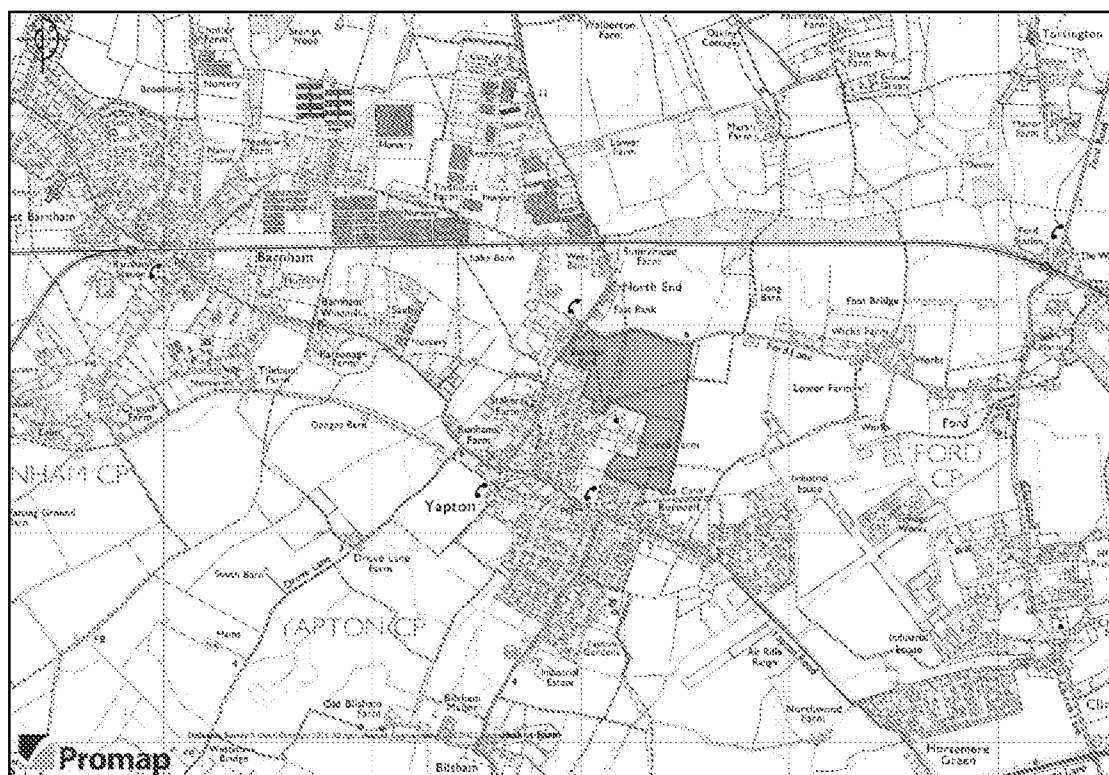
3.0 Baseline Conditions

Overview

- 3.1 So that the context of the site can be established, a detailed review of the study area has been undertaken. The following text provides a summary of the results of this review and makes reference to the location of the site and baseline traffic conditions. It also sets out an overview of the accessibility of the site by a variety of modes of transport and includes a review of road safety records.

Site Details

- 3.2 The site is located adjacent to North End Road and Ford Lane approximately 750 metres to the north of Yapton village centre. A plan showing the location in relation to the local highway network and existing built-up area of Yapton is provided below.



Site Location

- 3.3 At present the site is undeveloped, but is currently in use for agricultural purposes and benefits from two vehicular points of access on Ford Lane. These are broadly located in the centre and north-east corner of the site. The vehicular access that is situated in the centre of the site also forms part of the Public Right of Way network within West Sussex. This footpath (No. 358), which follows a north-south alignment across the site, connects Ford Lane with Church Lane from where it is possible to form onward connections to Yapton village centre via Yapton recreation ground. As is shown at Appendix A, footpath 358 splits into two further footpaths (No. 357 and 359) that form two connections with Ford Lane. The first (No. 357) is located in the north-west corner of the site, with the second (No. 359) being located circa 250 metres to the east of the site.
- 3.4 Whilst the site has most recently been in use for agricultural purposes and that there are further fields located to the north of Ford Lane and east of the site, it is noteworthy that there are also areas of employment and residential land uses to the south. Moreover, planning permission has recently been granted for 173 residential dwellings on land located to the south-east of the site. In this regard, it is considered that the proposals, full details of which are set out in Section 4, form a natural extension to the existing built-up environment.

Highway Network

- 3.5 The local highway network is focused around the B2132 (North End Road) and Ford Lane, which are single carriageway roads. As well as providing a connection to Yapton village centre via the B2233 (Main Road), the B2132 (North End Road/Yapton Lane) also connects the site with the A27 (Arundel Road) to the north. As part of the strategic road network, the A27 provides onward connections to Chichester and Portsmouth in the west. Ford Lane, which broadly follows an east-west alignment to the north of the site, provides a further connection to the A27 via Station Road/Ford Road to the east. Station Road also connects the site with the Rudford Industrial Estate as well as Littlehampton and Worthing via the B2233 and A259 to the south-east. The location of the site in relation to the regional highway network can be seen below.

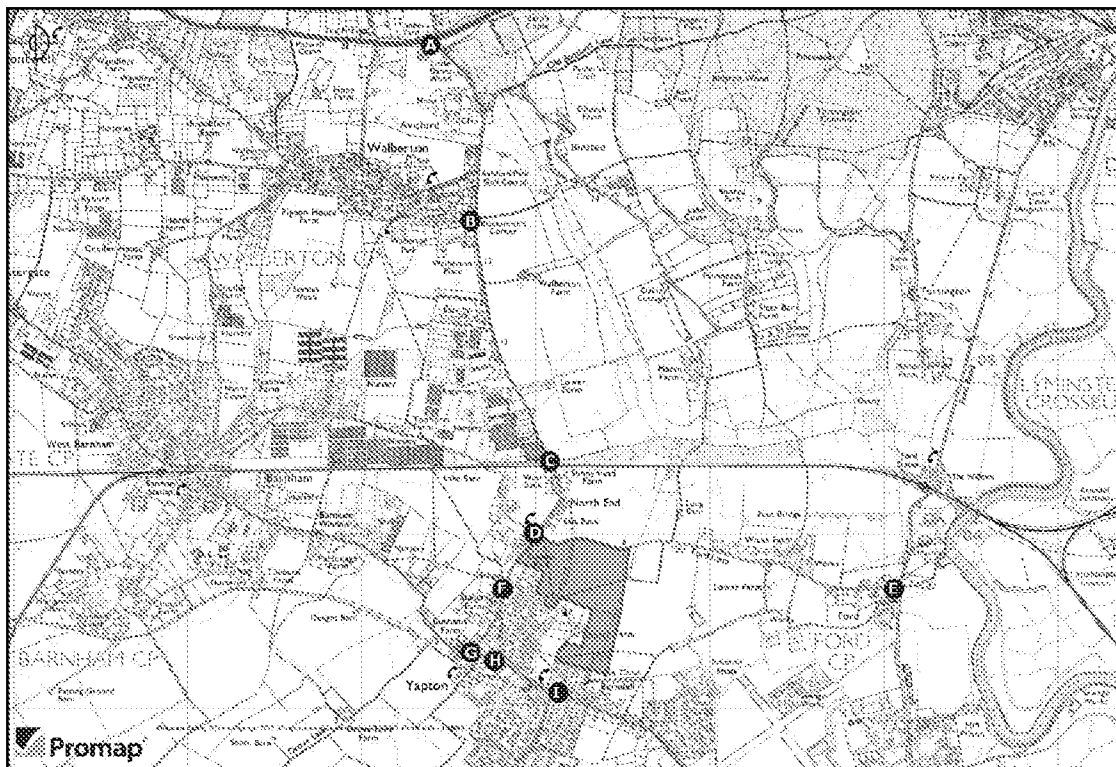


Site in Relation to the Highway Network

- 3.6 When considering the local highway network it is acknowledged that most of the roads between the A27 and A259 cross the south coast railway line at level crossings. As a result there are occasions when the roads approaching the level crossings are subject to periods of congestion. With respect to the study area that forms the basis of this report, details of which are provided below, there are two level crossings within circa two kilometres of the site. These are located on Yapton Lane to the north-west and Station Road in Ford to the east.

Baseline Traffic Flows

- 3.7 When assessing the impacts of a residential development such as that proposed, it is generally accepted that the critical periods in terms of traffic impact are the weekday morning and evening peak hours. It is during these periods that traffic flows associated with the development, and those on the adjacent highway network are likely to be at their greatest. In this regard, it is considered that the focus of the traffic impact assessments associated with the proposals should be during these time periods. Similarly, having regard to the Transport Assessment guidance prepared by West Sussex County, which notes a study area should include all junctions where there is a predicted increase in total entry flows of 30 or more vehicles in any hour, it was considered reasonable that the study area for a scheme of this size be focused upon the junctions that are highlighted on the following plan:



Baseline Traffic Survey Study Area

- 3.8 So that baseline traffic conditions at the above junctions could be ascertained, an independent traffic surveillance company (Benchmark Data Collection) was commissioned to record existing vehicular movements at the junctions outlined above. The existing vehicular movements passing through all the junctions that comprise the study area, with the exception of Yapton Lane/Lake Lane, were recorded on Wednesday 22nd May and Wednesday 25th September 2013 between the hours of 07:30 to 09:30 and 16:30 to 18:30 by way of Manually Classified Turning Counts (MCTC). Copies of the results are provided on the CD provided at Appendix B. For the purposes of this report, traffic flows at the Yapton Lane/Lake Lane junction have been taken from the Transport Assessment that was prepared in support of planning application that was submitted with respect to a proposed redevelopment at Eric Wall Limited in Barnham (Ref: BN/17/10).
- 3.9 The results of the MCTC surveys indicate that the weekday peak traffic flows associated with the local highway network are 07:45 to 08:45 in the morning and 16:45 to 17:45 in the evening. A summary of the traffic movements on the local highway network during these periods are shown at Figures 3.1 and 3.2. Based upon the traffic flows presented at Figures 3.1 and 3.2, it is evident that between 460 and 520 vehicles travel along North End Road and Ford Lane in the peak travel periods.
- 3.10 The survey results presented at Appendix B also contain the results of the queue lengths that Benchmark Data Collection recorded at the survey junctions. The results of the queue length surveys are summarised below at Table 3.1. It should be noted that the Transport Assessment prepared in support of the Eric Wall Limited application did not include any queue length surveys. However, on-site observations have established that this junction is not subject to periods of excessive queuing although it is accepted that the adjacent level crossing does have an effect upon the operation of this junction. Indeed, survey data submitted in support of a further planning application by Eric Wall Limited in July 2012 (Ref: BN/16/12), which is understood to be subject to a planning appeal, indicates that the level crossing at Yapton Lane is closed for approximately 15 minutes 36 seconds per hour during the peak travel periods and that the queues generated typically clear before the barriers close again.

Site	Approach	Morning Peak (07:45-08:45)		Evening Peak (16:45-17:45)	
		Max	Average	Max	Average
A	Arundel Road (WB)	0	0	0	0
	Yapton Lane	0	0	0	0
	Arundel Road (EB)	2	0	13	5
B	Yapton Lane (NB)	0	0	3	0
	The Street	0	0	1	0
	Yapton Lane (SB)	0	0	4	0
D	North End Road (SB)	0	0	0	0
	Ford Lane	7	3	6	2
	North End Road (NB)	5	0	0	0
	Maypole Lane	1	0	1	0
E	Station Road (SB)	0	0	0	0
	Ford Lane	7	1	12	3
	Station Road (NB)	0	0	0	0
F	North End Road (SB)	0	0	0	0
	Church Lane	2	0	1	0
	North End Road (NB)	0	0	0	0
G	North End Road	0	0	6	1
	Main Road	4	0	1	0
	Barnham Road	2	0	0	0
H	Main Road (EB)	0	0	0	0
	Church Lane	1	0	0	0
	Main Road (WB)	0	0	0	0
I	North End Road (EB)	0	0	0	0
	Church Lane	0	0	0	0
	North End Road (WB)	0	0	0	0

Table 3.1 – Queue Lengths at Survey Junctions

- 3.11 On the basis of the above information it is evident that the local highway network is not generally subject to prolonged periods of delay although it is accepted that the Arundel Road eastbound approach to the A27/Yapton Lane junction and Ford Lane experience relatively long queue lengths during the evening peak period. However, these queues were focused upon a five minute period and as such it is not considered that these junctions operate over capacity. Indeed, it is noteworthy that the right turn facility has capacity to accommodate circa 16 vehicles as this demonstrates that even when considering the maximum queue recorded in the evening peak (i.e. 13 vehicles) there is still residual capacity to accommodate further vehicles without causing obstructions to the free flow of traffic along the A27.

Committed Development

- 3.12 At paragraph 4.50 of the Department for Transport's 2007 publication entitled '*Guidance on Transport Assessment*' it is stated that:

"The assessment years should consider person trips from all committed developments that would impact significantly on the transport network, particularly where they substantially overlap, such as at the same junctions and/or on roads as the proposed development. The committed developments will typically include development sites that have extant planning permission as well as development plan allocations in an adopted or approved plan."

- 3.13 For the purposes of this assessment it has been assumed that traffic associated with the following committed developments should be taken into consideration when assessing the cumulative impact of the proposed development during the peak travel periods:

- Land North of Burndell Road, Yapton (Ref: Y/81/10);
- Yapton Industrial Estate (Ref: Y/81/07);
- Eric Wall Limited, Lake Lane, Barnham (Ref: BN/17/10);
- Land East of Goodacres, Barnham (Ref: BN/15/11); and,
- Land North of Yapton Road, East of Garden Crescent, Barnham (Ref: BN/7/12).

- 3.14 Details of how traffic associated with these developments is anticipated to disburse across the study area are provided at Figures 3.9 to 3.12. The information presented on these figures is consistent with data extracted from the Transport Assessments that were prepared in support of the planning applications. However, it should be noted that in those instances where the traffic data presented in support of the above applications did not extend to the study area being considered as part of this assessment it has been distributed in accordance with observed turning proportions. The cumulative traffic flows associated with the committed developments outlined above are shown at Figures 3.13 and 3.14.

Sustainable Transport Accessibility and Access to Local Services

- 3.15 It is generally accepted that walking and cycling provide important alternatives to the private car, and should also be encouraged to form part of longer journeys via public transport. Indeed, it is noteworthy that the Institute of Highways and Transportation (IHT) has prepared several guidance documents that provide advice with respect to the provision of sustainable travel in conjunction with new developments. Within these documents it is suggested that:

- The maximum walk distance for commuting is two kilometres (Providing for Journeys on Foot, 2000);
- Reasonably fit people can comfortably cycle eight kilometres (Cycle Friendly Infrastructure, 1996); and,
- Walking distances to bus stops should not exceed 400 metres (Planning for Public Transport in Development, 1999).

- 3.16 In addition to the above, it is noteworthy that Section 6 of the WSCC document entitled '*Transport Assessment Methodology*', states that consideration must be given to the accessibility of a proposed development to key local services, including education, employment, health, and food retailers.

Pedestrian and Cyclist Facilities

- 3.17 As outlined above, two public rights of way that connect Ford Lane with Church Road currently cross the site. However, it is accepted that Ford Lane does not benefit from any footways and that these accesses do not incorporate any pedestrian crossing facilities. Notwithstanding this, it is noteworthy that there are footways provided adjacent to North End Drive that provide onward connections to Yapton Church of England Primary School and Yapton village centre. These footways also connect the site with the bus stops that are located adjacent to the west of the site.

- 3.18 Whilst there are currently no dedicated cycle routes located in the immediate vicinity of the site, the main employment areas of Yapton (i.e. Ford Airfield and Rudford Industrial Estates) are located within five kilometres of the site. This is particularly evident given that Burndell Road, which provides access to these areas, forms part of National Cycle Route 2 (see Appendix C). Similarly, the centre of Barnham where there are further employment opportunities, a secondary school and a railway station are located circa 3.2 kilometres to the west of the site. There is also a further railway station located circa three kilometres to the east of the site at Ford. Given the relatively lightly trafficked nature of the local highway network it is considered that there is the potential for future residents to cycle to these areas for work based trips, and to access the wider regional and national employment markets via the train services that operate from Barnham and Ford railway stations.

Public Transport

- 3.19 There are two bus stops located within the recommended walk distances established by the IHT. These bus stops, which are located on North End Road, are circa 300 metres from the centre of the site and served on average by one service every 90 minutes on weekdays and Saturday. The services that operate from these bus stops follow a circular route that incorporates Barnham, Eastergate, Westergate and Bognor Regis, as well as Barnham railway station from where it is possible to connect with rail services that connect the south coast with London (see [Appendix D](#) for details). A summary of the buses that operate from the bus stops located on North End Road is provided below at Table 3.2.

Service Number	Destinations	Approximate Frequency	
		Mon–Sat	Sun
66	Bognor Regis – Barnham – Walberton – Yapton – Bognor Regis	Approx. every 90 minutes	No service

Table 3.2 – Details of Bus Service in the Vicinity of the Site

- 3.20 Whilst it is accepted that this frequency is less than the desirable half-hourly service WSCC refers to in its Transport Assessment guidance, it is considered that the application site is reasonably well located to an existing public transport network given the relatively rural location of the site. This is particularly evident given that it has been established that Barnham and Ford railway stations are located within the recommended cycling threshold of five kilometres and benefit from secure cycle parking.
- 3.21 Notwithstanding the above, it should be noted that there are further bus stops located on Bilsham Road approximately 1,200 metres to the south of the site, which is considered appropriate to apply to bus stops in a semi-rural location. This is particularly relevant in the Yapton context given that it is considered the 'Coastliner' bus service, which operates between Brighton and Southsea, operates a high frequency service to the major towns along the south coast. A route plan is provided at [Appendix D](#) for completeness, whilst a summary of the main destinations served by the 'Coastliner' bus service is provided at Table 3.3.

Service Number and Route		Approximate Frequency		
		Weekdays	Saturday	Sunday
700	Brighton – Worthing – Littlehampton – Yapton – Bognor Regis – Chichester – Portsmouth – Southsea	30 mins	30 mins	60 mins
	Southsea – Portsmouth – Chichester – Bognor Regis – Yapton – Littlehampton – Worthing – Brighton	30 mins	30 mins	60 mins

Table 3.3 – 'Coastliner' Bus Service Summary

Journey to Work Statistics

- 3.22 In order to assess the relative attractiveness of the sustainable modes of transport that the site has access to, the 2011 Census Data results associated with residents living in the Output Layers *E00160495* and *E00160496*, which incorporates the application site and the nearby residential properties that adjoin North End Road and Church Lane, has been interrogated. Details of the data extracted from the 2011 Census is summarised in Table 3.4 and provided in [Appendix E](#) for completeness.

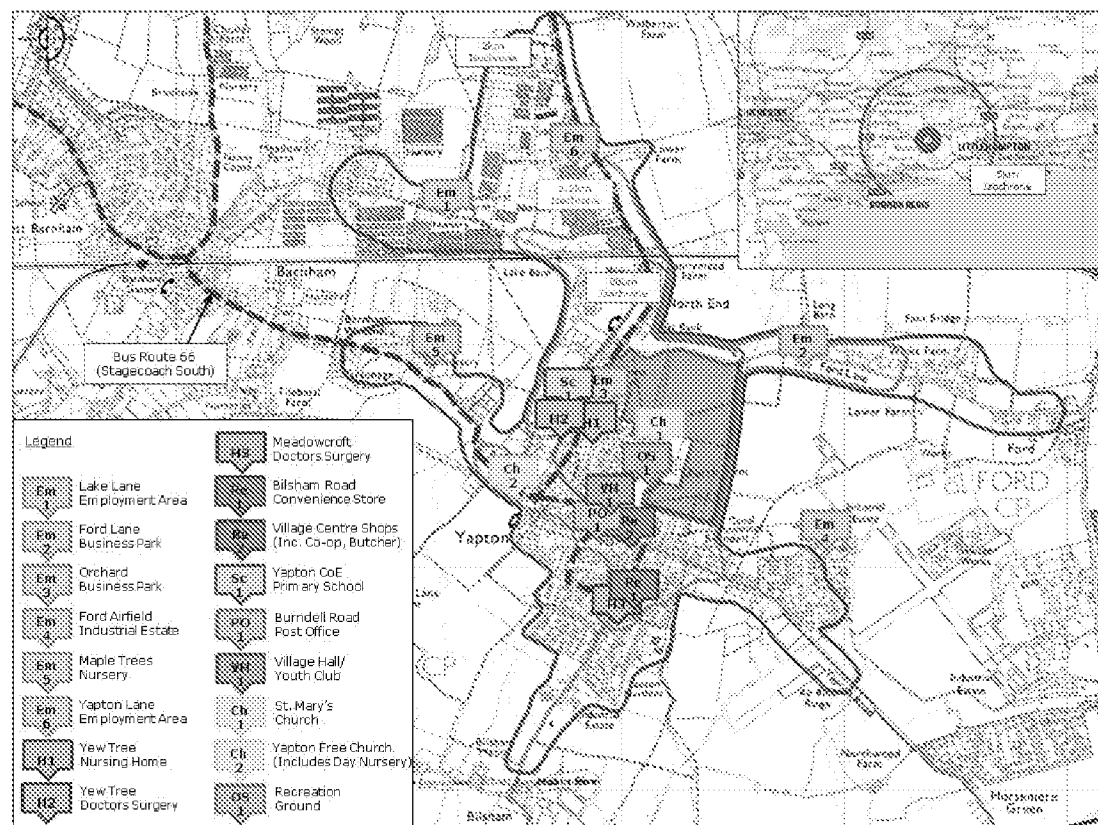
Mode	Output Layer E00160495 & E00160496	Non-Metropolitan District Arun
Public Transport	10.2%	7.6%
• Rail	8.8%	5%
• Bus	1.4%	2.6%
Car/van driver	71%	69%
Car/van passenger	4.6%	6.6%
Taxi	0%	0.4%
Motorcycle	0.5%	1%
Pedal Cycle	4.1%	3.9%
On foot	7.8%	10.8%
Other	1.8%	0.7%
TOTAL	100%	100%

Table 3.4 – Travel to Work Data (2011 Census)

- 3.23 As with the rest of the non-metropolitan district of Arun, Table 3.4 indicates the predominant mode of transport for travelling to work amongst existing residents is the private car. However, it is noteworthy that circa 30% of people travel to work via sustainable modes of transport (i.e. public transport, walking and cycling) and as such it is considered that the sustainable transportation options introduced above provide existing residents of this area of Yapton with a choice of transportation modes for work based trips despite its semi-rural location.

Local Services

- 3.24 Having regard to the above review of sustainable transport options, the following plan has been prepared to demonstrate the proximity of the application site to the key local services that are referred to in the Transport Assessment guidance prepared by WSCC. These include education, employment, retail and health facilities.



Site in Relation to Key Local Amenities

- 3.25 The above plan demonstrates that the application site is well located with respect to a range of the key services identified by WSCC. For example, Yapton Church of England Primary School is located well within two kilometres of the site, which the IHT considers to be the preferred maximum acceptable walk distances to walk to school. Similarly, it is noteworthy that the Lake Lane Industrial Estate is located within the preferred maximum acceptable commuting distance as it provides the opportunity for people to access local work opportunities on foot. Moreover, there are a range of other community facilities within the maximum acceptable walk distance to destinations other than a town centre, including a doctors surgery; recreation ground; the Olive Branch public house; two churches; a day care nursery; and a parade of shops, which reduce the need for people to leave the settlement by car for leisure, recreation, health and retail purposes. This is particularly evident given that the Co-operative convenience store stocks a range of products that would enable a person to prepare at home a nutritionally balanced diet.
- 3.26 In addition to the above, the following table has been prepared to summarise the typical journey times to access local services including those to destinations outside of Yapton. When establishing the walk and cycle journey times shown at Table 3.5, it has been assumed that average walk speeds are 80 metres per minute in accordance with guidance prepared by the IHT and that cycle times are 318 metres per minute in accordance with paragraph 8.2.2 of Local Transport Note 2/08. In addition to this, walk and cycle distances have been taken from the centre of the site.
- 3.27 With respect to the public transport journey times, reference has been made to published rail and bus journey times as well as the walk distances to the North End Road/Bilsham Road bus stops and typical dwell times at Barnham railway station. A further five minutes has been assumed for journeys to and from Bognor Regis, Chichester and Littlehampton railway stations to ensure that the journey times outlined at Table 3.5 take account of the time taken to travel to and from destinations within these towns.

Destination	Distance (metres)	Typical Journey Times (minutes)		
		Foot	Cycle	Bus/Train
Public Transport Interchanges				
North End Road Bus Stops	300	4	1	N/A
Bilsham Road Bus Stops	1,200	15	4	N/A
Barnham Railway Station	3,200	40	10	15
Community Facilities				
St Mary’s Church	360	5	1	N/A
Village Hall/Youth Centre (incl. Recreation Ground)	750	9	2	N/A
Health Facilities				
Yew Tree Doctor’s Surgery	800	10	3	N/A
Dentist, Walberton	2,500	31	8	N/A
Local Employment Opportunities				
Orchard Business Park	520	7	2	N/A
Lake Lane Employment Area	1,750	22	6	N/A
Ford Airfield Industrial Estate	2,400	30	8	N/A
Rudford Industrial Estate	4,000	N/A	13	N/A
Education Facilities				
Yapton C of E Primary School	610	8	2	N/A
Yapton Free Church and Nursery	1,100	14	4	N/A
Phillip Howard Catholic High School	3,720	N/A	12	17
Westergate Community School	5,700	N/A	18	24
Local Retail Outlets				
Village Centre Shops (incl. Co-op)	800	10	3	N/A
Olive Branch Public House	950	12	3	N/A
Lee Side Tool Shop	1,050	13	3	N/A
Bilsham Stores	1,200	15	4	N/A
Key Local Centres				
Littlehampton (by bus from Bilsham Road)	7,100	N/A	22	30
Bognor Regis (by bus from Bilsham Road)	9,200	N/A	29	35
Bognor Regis (by bus from North End Road and train from Barnham)	9,201	N/A	29	38
Chichester (by bus from North End Road and train from Barnham)	16,000	N/A	50	36

Table 3.5 – Typical Journey Times to Key Local Services

- 3.28 Table 3.5 demonstrates that it is possible to access two secondary schools by public transport, and a range of local employment centres are within the maximum acceptable journey times that are referred to by WSCC and the IHT for cyclists. In addition to this, Table 3.5 also indicates that the key regional settlements of Bognor Regis, Chichester and Littlehampton are all accessible by public transport well within 60 minutes. This is particularly noteworthy given that the census data provided at Appendix F for Yapton, shows these towns to be the main destinations for work. Moreover, it should also be acknowledged that these towns benefit from a wide range of retail outlets and other commercial uses. Indeed, it should be noted that the bus stops on North End Road are also served once a week by the T1 bus service that operates to and from the Tesco store in Littlehampton, and that the Bersted retail area of Bognor Regis can be accessed within less than 30 minutes by the buses that operate along Route 66.

- 3.29 On the basis of the information presented above it is considered that despite the semi-rural location of the site it is well located with respect to a range of community facilities that can be accessed by a range of transportation modes. It is therefore considered that the location of application has the potential to reduce reliance upon the private car in accordance with the guiding principles of the NPPF. Indeed, it is noteworthy that the Inspector who presided over the planning appeal (Ref: APP/C3810/A/AA/2155343) with respect to the Land North of Burndell Road committed development (Ref: Y/81/10), stated at paragraph 35 of his decision that:

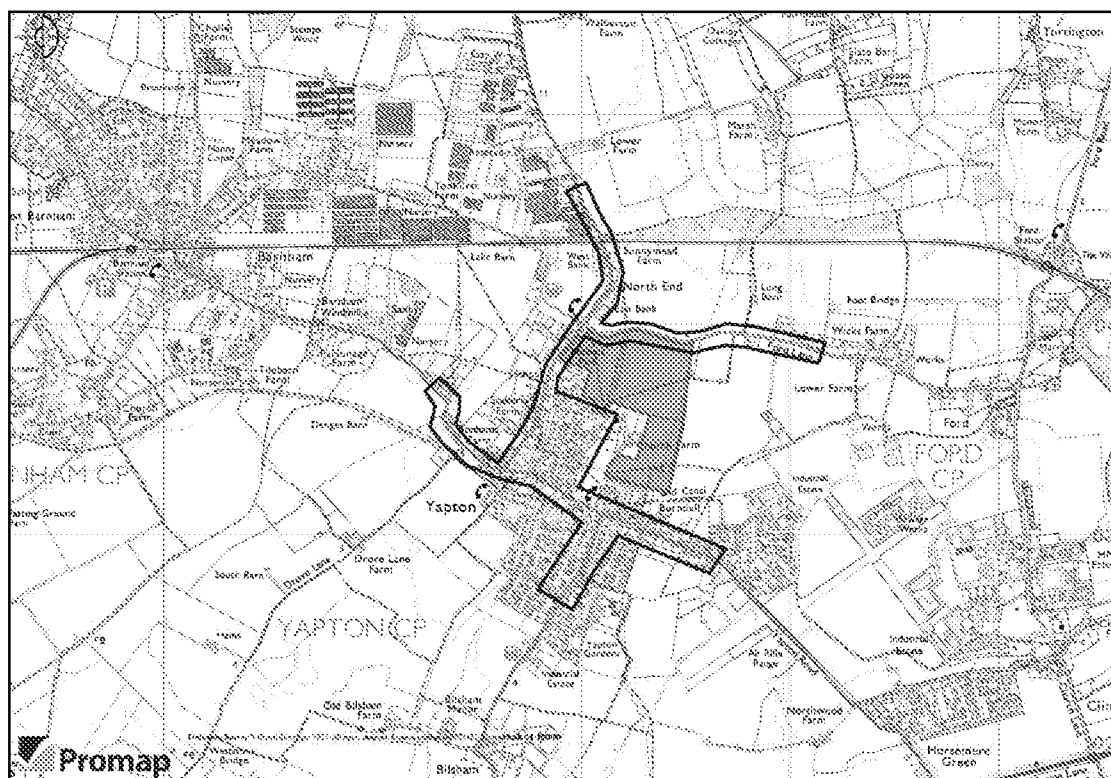
"To my mind, Yapton has a reasonable range of essential facilities and employment opportunities. In addition it is quite well served by public transport. Given the connectivity there would be to and from the appeal site, I regard the site as occupying a sustainable location".

Road Safety

- 3.30 At paragraph 3.3 of the Department for Transport publication entitled 'Guidance on Transport Assessment' it is recommended that a Transport Assessment should include:

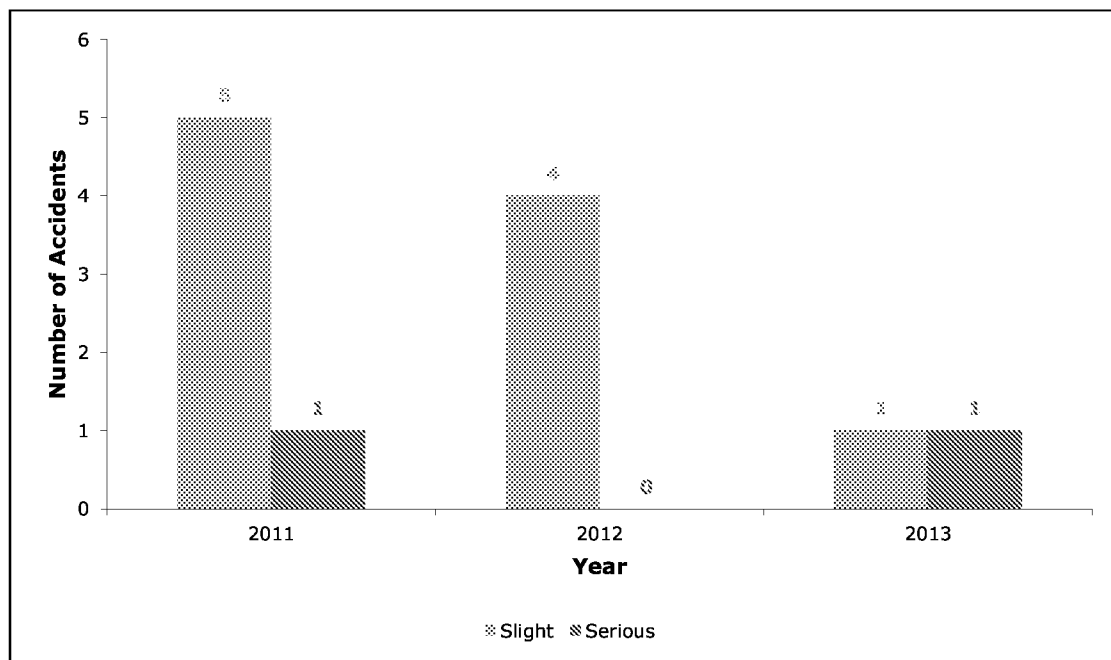
"an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent three-year period, or five-year period if the proposed site has been identified as within a high accident area."

- 3.31 With this in mind, accident statistics have been obtained from Sussex Constabulary for the latest available three-year period, which covers the period 31/07/2010 to 01/08/2013. For the purposes of this report, the study area includes the following roads and junctions:



Road Safety Study Area

- 3.32 The information received from Sussex Constabulary indicates that there were 12 accidents recorded within the study area during the defined period. Graph 3.1 illustrates the severity of these accidents over the three-year study period, whilst detailed information pertaining to each of the 12 accidents is contained within Appendix G.



Graph 3.1 – Personal Injury Accident Records (2010 to 2013)

- 3.33 Graph 3.1 demonstrates that of the 12 accidents recorded in the study area during the assessment period, 10 (83%) were classified as being slight and two (17%) were deemed to be serious; there were no fatalities recorded. A summary of the causation factors attributed to the two serious accidents is provided at Table 3.6

Accident Ref	Date	Time	Location	Causation Factors
11035451	06/09/2011	16:03	B2132 Bilsham Road (south of Bilsham Lane)	Failed to look properly.
1203332	07/01/2013	18:18	B2233 Yapton Road (west of Drove Road)	Poor turn or manoeuvre; exceeding speed limit.

Table 3.6 – Summary of serious accidents

- 3.34 On the basis of the evidence presented above it is evident that the two serious accidents occurred as a result of driver error rather than defects associated with the highway. This assumption is considered reasonable given that the data provided by Sussex Constabulary at Appendix G does not make any reference to problems associated with the geometry of the road, defective road surfaces or inadequate signage. Indeed, following a detailed review of all the accidents recorded in the assessment period it is apparent that the overriding factors associated with all accidents is driver/pedestrian/cyclist error rather than any problems related to highway geometry. For example, Sussex Constabulary notes that one accident (Ref: 1106455) involved a cyclist that was not displaying lights colliding with a vehicle at night, whilst another (Ref: 1105747) occurred as a result of a motorcyclist colliding with a loose dog that had entered the carriageway. To this end, it is considered that the local highway network does not suffer from any significant defect that is likely to result in an abnormally high accident rate.

Summary of Baseline Conditions

- 3.35 The above review demonstrates that despite its relatively rural location, the application site is readily accessible by a variety of modes of transport that have the potential to reduce reliance upon the private car. In this regard, it is considered that the location of application site accords with the guiding principles of the NPPF.
- 3.36 In addition to this, it has shown between 460 and 520 vehicles pass the site on North End Road and Ford Lane during the AM and PM peak periods. It has also been shown through reference to accident data that the local highway network does not suffer from any significant defects that results in there being an above average accident rate.

4.0 Development Details

Overview

- 4.1 The following text outlines details of how the site could be developed, and summarises how it will be accessed along with providing details of the associated parking and servicing strategies.

Development Proposals

- 4.2 As outlined at Section 1, the applicant is seeking outline planning permission for the construction of 10.5 hectares of C3 (Residential) floorspace with associated vehicular access and landscape enhancements. For the purposes of this assessment it has been assumed that the proposals will comprise up to 250 dwellings, 30% of which will be affordable, and that all of the dwellings will be houses as this will ensure a worst case scenario is assessed from a traffic generation perspective. Details of the calculations that have been undertaken with respect to traffic generation are provided at Section 5.

Access and Movement Strategy

- 4.3 It is intended that access to the proposed development will be achieved via the creation of two new junctions on Ford Lane. The vehicular access strategy associated with the proposed development is illustrated on Motion Drawings 130431-02a and 130431-03a at Appendix H. When considering the proposed vehicular access strategy, it is important to note that it has been designed with reference to guidance contained within TD42/95 of the Design Manual for Roads and Bridges (DMRB). Furthermore, the proposed junctions have been subject to a Stage 1 Road Safety Audit in accordance with national and local guidelines. Further details of this are provided below.
- 4.4 It is intended that the internal roads will be designed in accordance with national (*Manual for Streets*) and local (*WSCC Local Design Guide*) guidance and have regard to the swept path of vehicles that are likely to access the site on a regular basis, including refuse and emergency vehicles. However, as this application is outline in nature the internal road layout will be subject to further design at the reserved matters stage. That said, it should be noted that the layout will be designed in such a way so as to not require any diversions of the existing public rights of way that traverse the site. Similarly, it is intended that internal footways will connect with North End Road and Church Lane so that residents benefit from excellent connections to the local amenities located in the village centre.
- 4.5 Notwithstanding this, the applicant is also committed to upgrading the existing footpaths that cross the site and is willing to work with WSCC to identify a suitable mitigation package that ensures the route between the site and Yapton recreation ground, including Church Road, is attractive for pedestrians. With respect to Church Road, it is noteworthy that the traffic flows provided at Figures 3.1 and 3.2 show circa 100 vehicles were recorded entering and exiting this road in the peak travel periods; as *Manual for Streets* notes, shared surfaces are likely to work well across small distances and in those locations where peak traffic flows total 100 per hour.
- 4.6 In addition to the vehicular accesses that will be provided on Ford Lane, a third point of access to the site is proposed on North End Road. However, it should be noted that the location of this access will be fixed at the reserved matters stage having regard to site layout plan. This access will be reserved for pedestrians and cyclists, and in this regard will supplement the existing public rights of way that cross the site and ensure that residents are able to access the bus stops, the Ford Airfield and Rudford industrial estates for potential employment opportunities and Yapton Primary School via the proposed pedestrian refuge island shown on Drawing 130431-04.
- 4.7 The pedestrian/cycle access on North End Road could also be used by emergency vehicles in the unlikely event that both of the proposed accesses on Ford Lane are blocked. In this regard, it will be designed to accommodate the swept path of fire tenders and ambulances and incorporate retractable bollards, or other similar device, to ensure non-emergency vehicles are deterred from using this access.

- 4.8 As part of the Stage 1 Road Safety Audit (details of which are provided below) reference was made to the fact that the northbound bus stop on North End Road was subject to some limitations that have the potential to reduce the attractiveness of using the buses that serve this stop. On this basis, it is intended that the existing bus stops that are located on North End Road will be relocated as is shown on Drawing 130431-05 at Appendix I. When identifying the location of these stops reference has been made to the potential desire lines for future residents and the availability of highway land to accommodate bus shelters.

Stage 1 Road Safety Audit

- 4.9 At paragraph 4.93 of the Department for Transport publication entitled 'Guidance on Transport Assessment' it is stated that, "*Road Safety Audits may be required for any development-related highway works and, when produced, should be conducted in compliance with the relevant standards*". In this regard, the proposed vehicular access strategy and associated offsite highway works has been subject to a Stage 1 Road Safety Audit. This audit, which is provided at Appendix I, includes some minor observations about the proposed design. A Designer's Response has been prepared in response to these observations, which is also provided within Appendix I. On the basis of the Stage 1 Road Safety Audit it is considered that the access proposals will not lead to any increased risk of road traffic accidents in this location.

Parking Strategy

- 4.10 On the basis that this application is being made with the intention of securing an outline planning permission, it is not possible at this stage to provide a definitive breakdown of the parking strategy associated with the proposed redevelopment of this site for residential purposes. However, it is intended that the development will provide a level of parking that is in keeping with the guiding principles of the NPPF and the adopted parking standards, which are summarised at Section 2.
- 4.11 Cycle parking will be provided in accordance with the adopted standards outlined at Section 2. These will be provided in garages, or cycle storage boxes or sheds in the rear gardens of those dwellings that do not benefit from a garage. Cycle parking for residents of the flats will be accommodated in secure cycle stores.

Sustainable Transport Access Strategy

- 4.12 In accordance with national, regional and local transport planning policies, the applicant is committed to encouraging the use of more sustainable modes of transport, and has incorporated the following sustainable transportation measures:
- » Car parking that is consistent with the principles of the parking standards adopted by WSCC, as well as those set out in the NPPF;
 - » Secure cycle parking that accords with the adopted parking standards;
 - » The inclusion of new improved pedestrian links that connect the site with the bus stops located on North End Road and the Village Centre that can be accessed via Church Lane and Yapton Recreation Ground; and,
 - » A Residential Travel Plan that will encourage future residents to use more sustainable modes of transport when travelling to work. Further details of how this document will operate are provided in Section 7 of this report.

5.0 Trip Generation and Distribution

Overview

- 5.1 The following text outlines the levels of trips that are likely to be generated by the proposed development during the peak travel periods, together with an overview of how this is anticipated to be distributed onto the local highway network.

Trip Attraction – Vehicle Trips

- 5.2 Guidance prepared by the Department for Transport in March 2007 notes that when establishing the levels of trips associated with a proposed development, that:

“trip generation assessments are based on the identification of suitable (person or vehicle) trip rates, having regard to industry standard databases such as TRICS, GENERATE and TRAVL. These trip rates should be derived on the basis of site-specific details of the proposed development – for example, proposed gross floor area, number of dwelling units...” (DfT, 2007, paragraph 4.61).

- 5.3 With this in mind, the TRICS (2013b) database has been interrogated in order to quantify the levels of traffic flows that are likely to be associated with the proposed development. For the purposes of this assessment the following search parameters have been used on the basis that they most closely resemble the proposed uses:

- ✧ Land Use – Residential (Mixed Private Houses, Mixed Affordable Houses).
- ✧ Regions – England (excluding Greater London).
- ✧ Number of Units – +/- 50% of the number of proposed units.
- ✧ Date Range – 2000 Onwards.
- ✧ Count Type – Manual.
- ✧ Selected Days – Weekdays.
- ✧ Car ownership rates – Above 1.1 (where possible).
- ✧ Selected Locations – Edge of Town, Suburban areas.

- 5.4 The results of the TRICS interrogation are provided at [Appendix K](#), whilst summaries of the vehicle movements that are anticipated to be generated by 175 privately owned residential dwellings and 75 affordable dwellings are provided in Tables 5.1 and 5.2 respectively. The combined traffic generating potential of the proposed development is set out at Table 5.3. Please note that the numbers in italics related to HGV activity.

Time Period	Trip Rates (per unit)			Trip Attraction (175 Units)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Weekday Morning (07:45–08:45)	0.166 (0.002)	0.451 (0.003)	0.617 (0.005)	29 (0)	79 (1)	108 (1)
Weekday Evening (16:45–17:45)	0.413 (0.001)	0.242 (0.001)	0.655 (0.002)	72 (0)	42 (0)	114 (0)
Daily (07:00–19:00)	2.628 (0.039)	2.753 (0.038)	5.381 (0.077)	460 (7)	482 (7)	942 (14)

Table 5.1 – Traffic Attraction for 175 Privately Owned Houses/Flats

Time Period	Trip Rates (per unit)			Trip Attraction (75 Units)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Weekday Morning (07:45–08:45)	0.168 (0.009)	0.333 (0.006)	0.501 (0.015)	13 (2)	25 (1)	38 (3)
Weekday Evening (16:45–17:45)	0.376 (0)	0.265 (0)	0.641 (0)	28 (0)	20 (0)	48 (0)
Daily (07:00–19:00)	2.643 (0.044)	2.662 (0.044)	5.305 (0.088)	198 (8)	200 (8)	398 (16)

Table 5.2 – Traffic Attraction for 75 Affordable Houses/Flats

Time Period	Arrivals	Departures	Total
Weekday Morning (07:45–08:45)	42 (2)	104 (2)	146 (4)
Weekday Evening (16:45–17:45)	100 (0)	63 (0)	163 (0)
Daily (07:00–19:00)	658 (15)	682 (15)	1,340 (30)

Table 5.3 – Traffic Attraction for 250 Residential Dwellings

- 5.5 Table 5.3 indicates that the proposed development is likely to attract between circa 140 and 170 vehicle movements in the weekday morning and evening peaks, and up to 1,350 movements across a typical day. This level of vehicular activity equates to average two-way vehicular trip rates of 0.584 (AM), 0.652 (PM) and 5.360 (Daily) per residential unit.
- 5.6 These trip rates have been compared with those referred to in the Transport Assessments that have been prepared in support of the committed developments introduced at Section 3. The results of this analysis are presented at Table 5.4.

Scheme	AM Peak	PM Peak	Daily
Burndell Road, Yapton (Ref: Y/81/10)	0.551	0.662	5.037
Bisham Road, Yapton (Ref: Y/37/07)	0.613	0.560	5.640
Yapton Road, Barnham (Ref: BN/17/12)	0.583	0.662	5.526
Goodacres, Barnham (Ref: BN/15/11)	0.611	0.544	5.276
<i>Committed Development Averages</i>	<i>0.590</i>	<i>0.607</i>	<i>5.370</i>
Ford Lane Proposals	0.584	0.652	5.360

Table 5.4 – Two-way trip rate comparisons

- 5.7 Table 5.4 indicates that the trip rates extracted from TRICS are consistent with those that have been assessed by the committed developments. On this basis, it is considered that the traffic flows presented at Table 5.3 provide a robust basis upon which to assess the effects of the proposed development.

Multi Modal Trip Generation

- 5.8 In order to establish the person trips that the proposed development is likely to generate, the vehicular trip generations outlined in Table 5.3 above have been factored using the mode split data for the 2011 Census Output Layer *E00160495* and *E00160496* presented in Section 3.

Mode		AM Peak		PM Peak		Daily	
		Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
Public Transport	10.2%	6	14	14	9	95	99
• Rail	8.8%	5	12	12	8	82	85
• Bus	1.4%	1	2	2	1	13	14
Car/van driver	71%	42	104	100	63	658	682
Car/van passenger	4.6%	3	7	6	4	42	44
Motorcycle	0.5%	0	1	1	0	5	5
Pedal Cycle	4.1%	2	6	6	4	38	39
On foot	7.8%	5	11	11	7	72	75
Other	1.8%	1	3	3	2	17	17
TOTAL	100%	59	146	141	89	927	961

Table 5.5 – Proposed Development Person Trips

- 5.9 Based upon the information presented in Table 5.5, it is evident that the proposals have the potential to attract circa 200 and 230 person trips in the AM and PM peak travel periods respectively. Daily person trips are likely to equate to circa 1,900 movements.

Vehicular Trip Distribution

- 5.10 The Department for Transport's Guidance on Transport Assessment notes that when establishing the distribution of development traffic reference can be made to, analyses of census data, gravity models or existing traffic flows. For the purposes of this assessment, it has been assumed that development traffic will be distributed equally between the two site accesses and that once on the local highway network that it will disperse in accordance with data extracted from the *Nomis* website. Copies of the data extracted from the *Nomis* website are provided at Appendix 1, whilst a summary of the distribution profiles are presented at Figures 5.1 and 5.2.
- 5.11 Figures 5.3 and 5.4 detail the routes that development-related trips are likely to follow. A summary of the increases in traffic at the junctions that were surveyed within the study area is provided at Table 5.6.

Junction	Morning Peak	Evening Peak
A27/Yapton Lane	34	46
Yapton Lane/The Street	34	46
Yapton Lane/Lake Lane	40	52
North End Road/Ford Lane/Maypole Lane	85	102
Ford Lane/Station Road	61	60
North End Lane/Church Lane	45	50
North End Road/Yapton Road/Main Road	45	50
Main Road/Church Lane	39	43
Main Road/Burndell Road/Bilsham Road	39	43
Western Site Access/Ford Lane	115	132
Eastern Site Access/Ford Lane	104	111

Table 5.6 – Summary of Traffic Increases within the Study Area

- 5.12 When considering the above, it should be noted that paragraph 10.5.1 of the 'Transport Assessment Methodology' guidelines prepared by WSCC states:

"Generally the study area will include all junctions where there is a predicted increase in total entry flows of 30 or more vehicles in any hour - or if the junction already experiences peak period congestion an increase of 10 or more vehicles - as a result of the development proposals"

- 5.13 In this regard, the subsequent traffic impact assessment presented in Section 6 has considered the effects of the proposed development upon each of these junctions.

6.0 Highway Impact

Overview

- 6.1 The following text summarises the impacts that the traffic generation associated with the proposed development will have upon the junctions that comprise the study area.

Traffic Growth

- 6.2 When assessing the impact of a proposed development upon the local highway network, paragraph 4.47 of the Department for Transport publication 'Guidance on Transport Assessment' states:

"For the local transport network, a development should be assessed with regard to the LDF, and for a period of no less than five years after the date of registration of a planning application."

- 6.3 With respect to the strategic road network, the same guidance states at paragraph 4.48 that:

"...the future assessment year should normally be ten years after the date of registration of a planning application for the development, in line with the forward horizon of the RTS".

- 6.4 In this regard, the TEMPRO database has been interrogated to establish growth rates that can be applied to the traffic flows shown at Figures 3.1 and 3.2 to establish baseline conditions in 2018 so that the effects of the proposed development upon the local highway network can be identified. Copies of the TEMPRO output files that relate to the 'Westergate/Barnham/Yapton' study area are provided at Appendix M, whilst a summary of the growth rates that have been used to forecast traffic flows in the morning and evening peak periods are summarised in Table 6.1.

Time Period	Growth Rate
Morning Peak Hour	1.0602
Evening Peak Hour	1.0627

Table 6.1 – TEMPRO Growth Rates for Westergate/Barnham/Yapton (2013 to 2018)

- 6.5 In accordance with the requirements of the Highways Agency, the TEMPRO database has also been interrogated to establish growth rates for a 2023 future year so that the effects of the development upon the strategic road network can be assessed ten years after the registration date of the planning application. The results of this assessment are also provided at Appendix M for completeness, and summarised below in Table 6.2.

Time Period	Growth Rate
Morning Peak Hour	1.1469
Evening Peak Hour	1.1545

Table 6.2 – TEMPRO Growth Rates for Westergate/Barnham/Yapton (2013 to 2023)

- 6.6 When considering the above it is important to acknowledge that the growth rates established by TEMPRO are based upon the assumption that between 2013 and 2018 there will be an increase of 243 households in the Westergate/Barnham/Yapton study area. TEMPRO also assumes that between 2013 and 2023 there will be a further 244 households built. Given that the residential proposals that have been assumed to represent the locally committed developments, namely those related to applications Y/81/10, Y/37/07, BN/15/11 and BN/7/12, will deliver 351 new homes it is evident that the application of these rates in conjunction with the traffic flows shown at Figures 3.3 to 3.10 is robust as it will incorporate a significant element of double counting. Moreover, no allowances have been made for the fact that a Travel Plan will be operated. In this regard, the results generated by the junction models that are summarised below represent a worst case scenario that is unlikely to be replicated in practice.

Assessment Scenarios

6.7 When evaluating the impacts of the proposed development the following scenarios have been considered for the purposes of this assessment:

- » 2013 Base Year;
- » 2018 'Without Development';
- » 2018 'With Development';
- » 2023 'Without Development'; and,
- » 2023 'With Development'.

6.8 As outlined in Section 3, the 2013 Base Year traffic flows are shown at Figures 3.1 and 3.2, whilst vehicular activity associated with the future scenarios is presented at Figures 6.1 to 6.8 respectively. When establishing the 'without development' traffic flows shown at Figures 6.1 to 6.4, the growth rates outlined above have been applied to the traffic flows presented at Figures 3.1 and 3.2. It should be noted that the 'without development' flows (Figures 6.1 to 6.4) also make allowances for the levels of traffic associated with the committed developments outlined at Section 3. For completeness, Figures 3.13 and 3.14 show the numbers of vehicles that are associated with the committed developments that were introduced in Section 3.

6.9 So that the effects of the proposed development can be considered, the development trips shown at Figures 6.3 and 6.4 have been combined with the corresponding 'without development' traffic flows shown at Figures 6.1 to 6.4 to establish the 'with development' scenarios. In this regard, the traffic flows shown at Figures 6.5 to 6.8 represent the net change in vehicular activity associated with the application site.

Highway Impact

6.10 The traffic flows presented at Figures 6.5 to 6.8 have been compared with the corresponding values associated with the traffic conditions in the 'without development' scenarios (Figures 6.1 to 6.4) in order to establish how traffic flows will change at the assessment junctions in the future. The results of this comparison are provided in Tables 6.3 and 6.4 below. It should be noted that only the A27/Yapton Lane junction has been assessed in the 2023 future year in accordance with the requirements of the Highways Agency as set out in guidance prepared by the Department for Transport in March 2007 entitled 'Guidance on Transport Assessments'.

Junction	Morning Peak		Evening Peak	
	Without Development	With Development	Without Development	With Development
A27/Yapton Lane	3064	3098 (+1%)	2897	2942 (+1.6%)
Yapton Lane/The Street	936	970 (+3.6%)	932	977 (+4.9%)
Yapton Lane/Lake Lane	929	969 (+4.3%)	831	883 (+6.3%)
North End Road/Ford Lane/Maypole Lane	994	1077 (+8.6%)	1012	1113 (+10%)
Ford Lane/Station Road	978	1001 (+6.2%)	1074	1118 (+5.6%)
North End Lane/Church Lane	637	680 (+7.1%)	580	629 (+8.6%)
North End Road/Yapton Road/Main Road	1474	1517 (+3.1%)	1291	1340 (+3.9%)
Main Road/Church Lane	1384	1421 (+2.8%)	1226	1268 (+3.5%)
Main Road/Burdell Road/Bilsham Road	1486	1523 (+2.6%)	1319	1361 (+3.3%)

Table 6.3 – Junction Impacts in 2018

Junction	Morning Peak		Evening Peak	
	Without Development	With Development	Without Development	With Development
A27/Yapton Lane	3309	3343 (+1%)	3143	3188 (+1.5%)

Table 6.4 – Junction Impacts in 2023

- 6.11 The above Tables indicate that traffic flows at the A27/Yapton Lane junction is anticipated to increase by 34 and 46 vehicles in the respective assessment periods. As these increases equate to less than one additional vehicle per minute, it is considered highly unlikely that the proposed development will have a material effect upon the operation of the A27/Yapton Lane junction. This is particularly evident given that the anticipated increases are likely to be consistent with existing fluctuations in day-to-day traffic flows and that they are well below the 5% threshold that is generally accepted as being representative of a material increase in traffic. In this regard, it is considered the proposals will not have an adverse effect upon the strategic road network.
- 6.12 Notwithstanding this, the Transport Research Laboratory TRL has confirmed that PICADY is not able to accurately model the A27/Yapton Lane junction on the basis that the formulae that it refers to assumes that vehicles waiting to exit a minor arm are stationary; whereas in this situation, vehicles emerging from Yapton Lane benefit from a long merge lane that allows them to judge when to join the main carriageway whilst accelerating. For completeness an email from TRL confirming this is provided at Appendix N. On this basis, this junction has not been subject to any detailed junction modelling for the purposes of this assessment.
- 6.13 With regards the local highway network, it is accepted that the North End Road/Ford Lane/Maypole Lane and Ford Lane/Station Road junctions are expected to experience a significant increase in vehicular activity. This is as to be expected given that all development-related traffic will need to pass through these junctions when travelling to and from the proposed vehicular accesses located on Ford Lane. However, it should be noted that whilst these increases, which equate up to circa 10%, are relatively large it is important to reiterate that the queue length surveys summarised in Section 3 have shown the local highway network is not subject to excessive periods of congestion. Indeed, the queue length surveys provided at Appendix B indicate there were very few occasions when queues occurred and when they did they were for relatively short periods of time. In this regard, it is considered that the increases associated with these junctions, or for that matter those that comprise the rest of the study area, are unlikely to result in a severe impact upon the performance of the local highway network.
- 6.14 In order to test the conclusions that the proposed development will not have a servere impact upon the operation of the priority controlled junctions and roundabouts that comprise the study area, reference has been made to the industry standard computer modelling software packages PICADY 5 and ARCADY 6. The results of these analyses are summarised in the following paragraphs.

Base Year Traffic Conditions – Junction Modelling

- 6.15 Both of ARCADY and PICADY, which are produced by TRL, express the relationship between traffic flow and the capacity of a junction as a ratio, referred to as the Ratio of Flow to Capacity (RFC). Based upon these results it also predicts the anticipated queue lengths (Q). The results of the various baseline capacity assessments, which are based upon the traffic flows presented at Figures 3.1 and 3.2, are presented on the CD that is provided at Appendix O of this report. In addition to the results presented in Appendix O, summaries of how each of the assessment junctions currently operates are provided at Tables 6.5 to 6.12 below.

- 6.16 It should be noted that it is generally acknowledged that ARCADY is subject to limitations when assessing the performance of some mini-roundabouts. As a result there are occasions when the results returned by ARCADY do not reflect how a junction operates in practice. For example, the results of some initial tests at the North End Road/Yapton Road/Main Road and Burndell Road/Main Road roundabouts generated queue lengths that were not consistent with those recorded on-site. On this basis, site-specific intercept corrections have been applied at these junctions having regard to the queue length surveys that were summarised at Section 3.

	AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue
Yapton Lane North	0.255	0	0.567	1
Yapton Lane South	0.674	2	0.314	1
The Street	0.198	0	0.200	0
Delay	0.16 (Mins/veh) 10 seconds		0.13 (Mins/veh) 8 seconds	

Table 6.5 – Yapton Lane/The Street Mini-roundabout (2013 Operation)

	AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue
Lake Lane (Left Turn)	0.058	0	0.072	0
Lake Lane (Right Turn)	0.097	0	0.201	0
Yapton Lane (Right Turn)	0.067	0	0.077	0
Delay	0.01 (Mins/veh) 1 second		0.02 (Mins/veh) 1 second	

Table 6.6 – Yapton Lane/Lake Lane Junction (2013 Operation)

	AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue
Ford Lane (Left Turn, Ahead)	0.145	0	0.103	0
Ford Lane (Right Turn, Ahead)	0.616	2	0.471	1
North End Road	0.221	1	0.086	0
Maypole Lane (Left Turn, Ahead)	0.011	0	0.026	0
Maypole Lane (Right Turn, Ahead)	0.007	0	0.034	0
Yapton Lane	0.009	0	0.086	0
Delay	0.12 (Mins/veh) 7 seconds		0.05 (Mins/veh) 3 seconds	

Table 6.7 – North End Road/Ford Lane/Maypole Lane Crossroads (2013 Operation)

	AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue
Church Lane (Left Turn)	0.032	0	0.014	0
Church Lane (Right Turn)	0.100	0	0.039	0
North End Road (Right Turn)	0.077	0	0.053	0
Delay	0.02 (Mins/veh) 1 second		0.01 (Mins/veh) 1 second	

Table 6.8 – North End Road/Church Lane Junction (2013 Operation)

	AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue
Yapton Road	0.490	1	0.608	2
North End Road	0.155	0	0.549	1
Main Road	0.784	3	0.446	1
Delay	0.17 (Mins/veh) 10 seconds		0.14 (Mins/veh) 8 seconds	

Table 6.9 – North End Road/Main Road Mini-roundabout (2013 Operation)

	AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue
Main Road	0.466	1	0.629	2
Burndell Road	0.543	1	0.388	1
Bilsham Road	0.572	1	0.314	0
Delay	0.13 (Mins/veh) 8 seconds		0.12 (Mins/veh) 7 seconds	

Table 6.10 – Burndell Road/Main Road Mini-roundabout (2013 Operation)

	AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue
Ford Lane (Left Turn)	0.081	0	0.179	0
Ford Lane (Right Turn)	0.384	1	0.726	4
Station Road (Right Turn)	0.077	0	0.074	0
Delay	0.04 (Mins/veh) 2 seconds		0.14 (Mins/veh) 8 seconds	

Table 6.11 – Ford Lane/Station Road Junction (2013 Operation)

	AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue
Church Lane (Left Turn)	0.034	0	0.025	0
Church Lane (Right Turn)	0.085	0	0.081	0
Main Road (Right Turn)	0.179	0	0.081	0
Delay	0.01 (Mins/veh) 1 second		0.01 (Mins/veh) 1 second	

Table 6.12 – Main Road/Church Lane Junction (2013 Operation)

- 6.17 When considering the above results it is important to note that when an RFC of one is recorded by ARCADY and PICADY it indicates that a junction is at capacity, whilst an RFC of less than 0.85 is generally accepted as being representative of a junction operating under free-flow conditions. As the results presented above indicate that the maximum RFC currently associated with the assessment junctions is shown to be 0.784, it is evident that the local highway network is not currently subject to any capacity constraints that lead to prolonged periods of congestion. This is as to be expected given that queue length surveys presented in Section 3 demonstrate that very few queues were recorded at the assessment junctions on the day that the traffic surveys were undertaken.
- 6.18 Notwithstanding this, WSCC also refers to queue length and delay thresholds that are introduced in Section 10 of its 'Transport Assessment Methodology' guidelines when assessing the performance of a junction. Given that the queues outlined above are not long enough to block another junction or traffic stream and delays are all less than 90 seconds, it is considered that this provides further evidence the junctions that comprise the study area are not subject to prolonged periods of congestion as they all operate within thresholds WSCC has determined to be acceptable.

2018 Future Year Traffic Conditions – Junction Modelling

- 6.19 The traffic flows presented at Figures 5.1 to 5.8 have been assessed using the junction models that were developed to review the operation of the assessment junctions in the baseline position. In addition to this the proposed access strategy has also been assessed using PICADY. It should be noted that only the western access has been assessed on the basis that Figures 5.3 and 5.4 show this junction will be subject to higher traffic flows than the eastern site access. This is considered a reasonable approach given that the drawings presented at Appendix H show the geometries of these accesses will be consistent.
- 6.20 The results of detailed junction modelling analyses that take into account the increases in traffic associated with the proposed development are provided at Appendix P, with summaries provided below in Tables 6.13 to 6.21.

	Without Development				With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue
Yapton Lane North	0.287	0	0.649	2	0.299	0	0.686	2
Yapton Lane South	0.757	3	0.357	1	0.782	3	0.372	1
The Street	0.221	0	0.217	0	0.225	0	0.219	0
Delay	0.20 (Mins/veh) 12 seconds		0.14 (Mins/veh) 8 seconds		0.21 (Mins/veh) 13 seconds		0.15 (Mins/veh) 9 seconds	

Table 6.13 – Yapton Lane/The Street Mini-roundabout (2018 Operation)

	Without Development				With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue
Lake Lane (Left Turn)	0.061	0	0.092	0	0.067	0	0.092	0
Lake Lane (Right Turn)	0.115	0	0.255	0	0.115	0	0.265	0
Yapton Lane (Right Turn)	0.083	0	0.093	0	0.084	0	0.123	0
Delay	0.01 (Mins/veh) 1 second		0.03 (Mins/veh) 2 seconds		0.01 (Mins/veh) 1 second		0.03 (Mins/veh) 2 seconds	

Table 6.14 – Yapton Lane/Lake Lane Junction (2018 Operation)

	Without Development				With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue
Ford Lane (Left Turn)	0.170	0	0.118	0	0.305	0	0.167	0
Ford Lane (Right Turn)	0.685	2	0.524	1	0.773	3	0.601	1
North End Road	0.252	1	0.098	0	0.285	1	0.161	0
Maypole Lane (Left Turn)	0.012	0	0.028	0	0.013	0	0.029	0
Maypole Lane (Right Turn)	0.008	0	0.038	0	0.008	0	0.039	0
Yapton Lane	0.009	0	0.027	0	0.009	0	0.028	0
Delay	0.13 (Mins/veh) 8 seconds		0.06 (Mins/veh) 4 seconds		0.18 (Mins/veh) 11 seconds		0.07 (Mins/veh) 4 seconds	

Table 6.15 – North End Road/Ford Lane/Maypole Lane Crossroads (2018 Operation)

	Without Development				With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue
Church Lane (Left Turn)	0.034	0	0.015	0	0.035	0	0.015	0
Church Lane (Right Turn)	0.111	0	0.044	0	0.113	0	0.045	0
North End Road (Right Turn)	0.089	0	0.056	0	0.091	0	0.057	0
Delay	0.02 (Mins/veh) 1 second		0.01 (Mins/veh) 1 second		0.02 (Mins/veh) 1 second		0.01 (Mins/veh) 1 second	

Table 6.16 – North End Road/Church Lane Junction (2018 Operation)

	Without Development				With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue
Yapton Road	0.552	1	0.678	2	0.558	1	0.691	2
North End Road	0.177	0	0.658	2	0.231	0	0.683	2
Main Road	0.880	6	0.510	1	0.891	7	0.540	1
Delay	0.25 (Mins/veh) 15 seconds		0.17 (Mins/veh) 10 seconds		0.26 (Mins/veh) 16 seconds		0.17 (Mins/veh) 10 seconds	

Table 6.17 – North End Road/Main Road Mini-roundabout (2018 Operation)

	Without Development				With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue
Main Road	0.514	1	0.720	3	0.544	1	0.734	3
Burndell Road	0.655	2	0.475	1	0.668	2	0.503	1
Bilsham Road	0.646	2	0.370	1	0.655	2	0.385	1
Delay	0.15 (Mins/veh) 9 seconds		0.14 (Mins/veh) 8 seconds		0.16 (Mins/veh) 10 seconds		0.15 (Mins/veh) 9 seconds	

Table 6.18 – Main Road/Burndell Road Mini-roundabout (2018 Operation)

	Without Development				With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue
Ford Lane (Left Turn)	0.099	0	0.224	0	0.161	0	0.325	0
Ford Lane (Right Turn)	0.412	1	0.784	3	0.455	1	0.821	4
Station Road (Right Turn)	0.085	0	0.081	0	0.111	0	0.117	0
Delay	0.04 (Mins/veh) 2 seconds		0.17 (Mins/veh) 10 seconds		0.05 (Mins/veh) 3 seconds		0.19 (Mins/veh) 11 seconds	

Table 6.19 – Ford Lane/Station Road Junction (2018 Operation)

	Without Development				With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue	Max RFC	Queue
Church Road (Left Turn)	0.038	0	0.028	0	0.038	0	0.028	0
Church Road (Right Turn)	0.098	0	0.093	0	0.101	0	0.096	0
Main Road (Right Turn)	0.212	1	0.088	0	0.218	1	0.090	0
Delay	0.01 (Mins/veh) 1 second		0.01 (Mins/veh) 1 second		0.01 (Mins/veh) 1 second		0.01 (Mins/veh) 1 second	

Table 6.20 – Main Road/Church Road Junction (2018 Operation)

	AM Peak		PM Peak	
	Max RFC	Queue	Max RFC	Queue
Site Access (Left Turn)	0.044	0	0.028	0
Site Access (Right Turn)	0.046	0	0.025	0
Ford Lane (Right Turn)	0.021	0	0.049	0
Delay	0.01 (Mins/veh) 1 second		0.01 (Mins/veh) 1 second	

Table 6.21 – Western Site Access/Ford Lane Junction (2018 Operation)

- 6.21 The above results also demonstrate that the cumulative effects of the proposed and committed developments are not anticipated to result in the following junctions operating over capacity as the maximum RFC recorded for these junctions is 0.782.

- ✧ Main Road/Church Road;
 - ✧ Ford Lane/Station Road;
 - ✧ North End Road/Church Lane;
 - ✧ North End Road/Ford Lane/Maypole Lane;
 - ✧ Yapton Lane/Lake Lane;
 - ✧ Yapton Lane/The Street; and,
 - ✧ Main Road/Burndell Road/Bilsham Road.
- 6.22 It is accepted that Tables 6.17 and 6.18 indicate that the North End Road/Yapton Road/Main Road mini-roundabout is likely to operate with a maximum RFC slightly in excess of the 0.85 design threshold that is typically referred to. It is also accepted that the queues that are predicted to accumulate at the North End Road/Yapton Road/Main Road mini-roundabout is likely to extend back passed the junction that provides access to a small number of residential dwellings. However, it is important to reiterate that the analyses presented above are representative of a worst case scenario given that it has been shown above that the growth rates extracted from TEMPRO assume an increase of 243 households in the Westergate/Barnham/Yapton study area up to 2018, whereas our analyses includes traffic associated with committed developments for circa 350 new homes. In this regard, the queues predicted by ARCADY are unlikely to be realised in practice and it is considered that the proposals will not lead to any demonstrable harm upon the performance of the local highway network.
- 6.23 Notwithstanding this, it is noteworthy that the results presented above demonstrate that the maximum period of delay would be within the 90 seconds threshold that WSCC refers to when assessing the performance of a junction. Indeed, the results generated by ARCADY suggest that periods of delay will only be subject to maximum increases of up to three seconds when comparing the 'without' and 'with' development scenarios. This is considered to provide further evidence that the development will not have a material impact upon the performance of the local highway network.
- 6.24 Similarly, it has been shown that the indicative site access junctions presented at Appendix H are anticipated to operate with maximum RFC values that are within normal design thresholds. In this regard, it is considered that it is possible to construct vehicular access points on Ford Lane that will not lead to any disruption to the free flow of traffic along Ford Lane. However, the applicant accepts that further analyses will need to be undertaken at the reserved matters stage.

Impacts at Yapton and Ford Level Crossings

- 6.25 Having regard to Figures 5.3 and 5.4 the following table summarises the likely increases in traffic at the Yapton and Ford level crossings.

Level Crossing	Morning Peak			Evening Peak		
	Northbound	Southbound	Total	Northbound	Southbound	Total
Yapton	28	12	40	17	31	48
Ford	35	14	49	21	25	46

Table 6.22 – Level Crossing Impacts

- 6.27 The above table indicates that two-way traffic flows are anticipated to increase at the Yapton and Ford level crossings by between 40 and 50 vehicles in the peak travel periods. Given that these increases equate to less than one additional vehicle per minute it is considered that the proposed development would not lead to a material impact at these locations. This is particularly evident when considering the fact that the survey data collected in relation to the July 2012 planning application submitted by Eric Wall Limited established that the barriers at Yapton crossing were closed on average for approximately 15 minutes during the peak travel periods. In this regard, the barriers would directly affect just 25% of the development-related traffic summarised at Table 6.22 at this location (i.e. ten two-way movements in the morning and 12 two-way movements in the evening).

- 6.28 With this in mind the following table has been prepared to demonstrate the rate at which vehicles will arrive at the level crossings in conjunction with the times when the barriers will be closed. It should be noted that the number of barrier closures for the Yapton crossing are consistent with that collected in relation to the Eric Wall Limited application (Ref: BN/16/12). On the basis that the Ford level crossing is located on the same train line, the same data has been used for this crossing. However, to reflect the fact there is a railway station at Ford that is likely to increase the length of time barriers remain closed for at this location, it has been assumed that the barriers at this location will be closed for 20 minutes during the peak travel periods and thus directly affect 20% of the development-related traffic (i.e. ten two-way movements in the morning and 13 two-way movements in the evening).

Level Crossing	Morning Peak			Evening Peak		
	Gates Closed	Northbound	Southbound	Gates Closed	Northbound	Southbound
Yapton	Once every 4 minutes	1 per 9 minutes	1 per 20 minutes	Once every 5 minutes	1 per 15 minutes	1 per 8 minutes
Ford	Once every 4 minutes	1 per 9 minutes	1 per 20 minutes	Once every 5 minutes	1 per 15 minutes	1 per 8 minutes

Table 6.23 – Average Vehicle Arrival Rates at Yapton and Ford Level Crossing

- 6.29 On the basis of the information presented at Table 6.23 it is anticipated that average queue lengths on the northbound approaches to the Yapton and Ford level crossing during the morning peak are likely to increase by one vehicle every other closure, whilst southbound queues may increase by one vehicle every five cycles. Similarly, during the evening peak period it is considered that average queues will increase by one vehicle every three cycles on the northbound approaches to the level crossings, with southbound queues increasing by one vehicle every one to two closures. Given that the data collected in support of the Eric Wall Limited planning application show the queues generated by the barriers at the Yapton level crossing typically clear before the barriers close again, and that on-site observations at the Ford level crossing have confirmed this to be the case at that location, it is considered that increases of this magnitude would not have a severe effect upon the capacity of the level crossings.
- 6.30 The anticipated increases in queue lengths outlined above are also unlikely to lead to a material increase in delays that drivers incur. This is particularly relevant at the Yapton level crossing as it is considered that the additional time drivers will have to spend waiting for the barriers to close and open is not sufficient to result in drivers using the opposing lane to circumvent the queues that occur on Yapton Lane and Lake Lane. Notwithstanding this, it should be noted that the survey data collected with respect to the Eric Wall Limited application indicated just four drivers jumped the queues that are currently generated by the barriers at the Yapton level crossing to turn right into Lake Lane in the survey periods. Similarly, there were no recorded incidences of drivers jumping the queues on Lake Lane to turn left onto Yapton Lane. On this basis, it would suggest that the current delays are not significant enough to encourage this behaviour and as a result this location is not subject to any inherent road safety concerns that the development will exacerbate.

Highway Impact Summary

- 6.31 The above analyses have established that the indicative site accesses, Main Road/Church Road, Ford Lane/Station Road, North End Road/Church Lane, North End Road/Ford Lane/Maypole Lane, Yapton Lane/Lake Lane, Yapton Lane/The Street and Main Road/Burdell Road/Bilsham Road junctions are not subject to any capacity constraints that are likely to lead to unacceptable periods of delay.

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- 6.32 Whilst ARCADY has recorded RFC values that exceed the design capacity of 0.85 for the North End Road/Yapton Road/Main Road mini-roundabout, it should be noted that these results are representative of a worst case scenario that includes a significant amount of double counting of traffic attributed to locally committed developments. As such, the conditions predicted by ARCADY are unlikely to be realised in the future. Notwithstanding this, it has been shown that these junctions will not be subject to periods of delay that WSCC deems to be representative of a junction operating outside acceptable thresholds.
- 6.33 It has also been established that the increases in traffic associated with the development will not have a material impact upon either the Yapton or Ford level crossings. Indeed, it has been shown that increases in queue lengths will be imperceptible when compared with the current situation, with maximum increases equating to just one additional vehicle queuing during those occasions when the barriers are closed.
- 6.34 On this basis, it is considered that the proposed development will not result in any adverse disruption to the free flow of traffic on the local highway network, and certainly not lead to a severe impact as is outlined in the NPPF. With respect to the level crossings, it is also considered that the increases in traffic will not result in an adverse effect upon current road safety levels. It is therefore concluded that the proposals are consistent with national and local transportation policies with respect to traffic impact.

7.0 Promoting Smarter Choices via Travel Plans

Overview

- 7.1 The NPPF published in March 2012 indicates that developments generating significant traffic movements should provide a Travel Plan. Further to this, guidance contained within the Department for Transport's 2009 publication entitled '*Good Practice Guidelines: Delivering Travel Plans through the Planning Process*' outlines the thresholds above which Travel Plans would normally be expected. With reference to local policy, the West Sussex Local Transport Plan requires all major planning applications to be accompanied by a Travel Plan.
- 7.2 To accord with national and local planning policy, a Residential Travel Plan (RTP) shall be produced prior to initial occupation of the development. The Heads of Terms of the RTP are provided below to support the planning application.

Residential Travel Plan Heads of Terms

- 7.3 The main objective of the RTP will be to provide a long-term strategy for encouraging residents and visitors to reduce their dependency on travelling as single occupancy car drivers in favour of more sustainable modes such as public transport, car sharing, walking and cycling.
- 7.4 At this stage, and in recognition of the site's location, it is likely that the main RTP target will be to achieve a 10% reduction in daily vehicle trips before the fifth anniversary of the development becoming fully occupied. However, to assess the appropriateness of applying this trip rate target, it is envisaged that the final targets will be established having regard to a baseline household travel survey that will be undertaken within six months of 90% occupation of the site. Following this, an independent company will be appointed to conduct TRICS Standard Assessment Methodology (SAM) surveys in years one, three and five after the baseline survey. This will be funded by the developer.
- 7.5 Prior to the development becoming occupied, a Travel Plan Coordinator will be appointed by the developer to oversee the implementation of a range of 'hard' and 'soft' measures specified in the RTP. This is likely to include providing the potential for all dwellings to install broadband so that residents are able to work from home and to carry out online shopping, the preparation of travel packs containing information on local walk/cycle routes, public transport services, the car sharing website www.westsussexcarshare.com and potential initiatives including 'bus taster' tickets and discounts with local cycle retailers. The contact details of the Travel Plan Coordinator will be supplied to the West Sussex County Council's Travel Plan Officer as well as being contained in the travel packs for the benefit of new residents.

Summary

- 7.6 In summary, the RTP will seek to influence a reduction in single occupancy, private car usage in favour of a more sustainable travel behaviour pattern amongst residents and visitors. The objectives of the Travel Plan Statement are intended to complement central Government Policy in respect of transport and to accord with WSCC's Guidance for Travel Plans and Transport Assessments. In this regard, it will contain the following elements:
- » The developer will appoint a Travel Plan Coordinator to develop and implement the Travel Plan measures in conjunction with the WSCC Travel Plan officer;
 - » The Travel Plan Coordinator will promote the use of alternative modes of transport for trips to and from the development;
 - » The Travel Plan Statement will set out modal split targets with associated measures to promote the use of sustainable modes of transport;
 - » A Travel Pack that provides information regarding travel to and from the site will be issued to residents upon initial occupation of each dwelling;
 - » Details of the West Sussex Car Share scheme will be made available to residents; and,
 - » A monitoring and review program will be set out.

8.0 Summary and Conclusions

- 8.1 This Transport Assessment has been prepared on behalf of Keith Langmead to accompany an outline planning application for the development of:

"10.5 hectares of residential development with vehicular access from Ford Lane and pedestrian/cycle and emergency access only onto North End Road (comprising up to 250 dwellings (30% to be affordable) together with ancillary open space and landscaping) and 14.9 hectares of public open space development to be laid out as public parkland and landscaped green corridors."

- 8.2 On the basis of the evidence provided in this report it has been established that the site benefits from access to a good network of pedestrian and cycle links, which connect the site to the existing sustainable transport networks that serve the local area and a range of local facilities. On this basis, it is considered that the proposed development is ideally located to provide people with a real choice of modes of transport in accordance with the guiding principles of the NPPF and ADLP Policy GEN15. Moreover, the applicant intends to deliver a package of improvements that will include enhancing the current footpaths that cross the site, the introduction of a new footway along Ford Lane and a new pedestrian refuge island on North End Road.
- 8.3 Notwithstanding this, it has been shown that the proposals are unlikely to have a material impact upon the local transport networks. Indeed, the results of our various analyses indicate that the proposals would not lead to any demonstrable harm to the operation of the local highway network during the peak travel periods. As a result it is evident that the proposals are appropriate in scale to the local transport infrastructure in accordance with ADLP Policy GEN8.
- 8.4 It has also been established that it is possible to implement a vehicular access strategy that is consistent with current best practice guidelines. In this regard, it is considered that the proposals will not introduce a road safety problem or have an adverse effect upon the free flow of traffic along Ford Lane. Similarly, it should be noted that as parking will be provided in accordance with adopted standards the potential for the displacement of parking onto surrounding roads will be minimised, whilst also encouraging the use of bicycles. In this regard, it is considered that the proposals also accord with ADLP Policy GEN12.
- 8.5 Notwithstanding this, it is noteworthy that the proposals include measures to reduce reliance upon the private car. For example, pedestrian and cycle links will be incorporated into the access strategy to ensure that residents are able to access a range of community facilities and employment opportunities in the local area. In addition to this, a Residential Travel Plan will be developed. This will provide details of the transportation options that are available in the local area and how these can be utilised to access key local services, together with potential incentives (including preferential public transport tickets and cycle vouchers). As a result it is considered that the proposals are also consistent with ADLP Policies GEN14 and GEN15, as they will encourage the use of alternative modes of transport.
- 8.6 In summary, the report demonstrates the following:
- ✧ The location of the site accords with the relevant national and local transport planning policies;
 - ✧ The site benefits from access to a sustainable transport network that provides alternatives to the private car;
 - ✧ An analysis of personal injury accident data records has identified no significant issues associated with the local highway network that are detrimental to road safety levels;
 - ✧ Appropriate provision can be made for access, parking and servicing in accordance with relevant guidance and standards;
 - ✧ The increases in vehicular activity will not have a material impact on the operation of the local highway network; and,
 - ✧ By operating a Residential Travel Plan at the proposed development, the use of more sustainable modes of transport will be actively encouraged.

- 8.7 On the basis of the above, it is concluded that the proposals accord with national and local transport related policies and can be accommodated without detriment to the operating capacity of the local transport networks. As such, we see no reason why the proposals should be resisted on traffic or transportation grounds.