

Generator Group LLP & Barratt David Wilson Homes

**Copseys Nursery/Manor Farm, Denvilles,
Havant**

Transport Assessment

November 2012

Contents

1	INTRODUCTION.....	1
2	EXISTING CONDITIONS	3
	Site Location	3
	Existing Uses	3
	Site History	3
	Surrounding Highway Network.....	3
	Level Crossing	5
	Existing Traffic Generation	5
	Pedestrian & Cycle Routes.....	6
	Bus Services	7
	Rail Services.....	7
	Accident Analysis	8
	Existing Travel Behaviour	12
3	POLICY REVIEW	14
	National Planning Policy Framework (NPPF)	14
	Regional Guidance	15
	Hampshire Sustainable Community Strategy 2008-2018	15
	Hampshire Local Transport Plan 2011-2031.....	16
	Havant Borough Council Residential Parking and Cycle Provision SPD.....	17
	Section Summary	18
4	DEVELOPMENT PROPOSALS	20
	Access Arrangements	20
	Issues Raised at Public Exhibition/DCF	21
	Parking Requirements	22
	Internal Site Highway Layout	24
	Vehicle Servicing Arrangements.....	24
5	SITE SUSTAINABILITY STRATEGY	26
	Pedestrian Infrastructure	26
	Proposed Pedestrian Footbridge.....	27
	Cycling Links.....	28
	Public Transport Improvements.....	29
	Travel Plan	30
	Conclusion	31
6	TRIP GENERATION & DISTRIBUTION.....	32
	Traffic Generation	32
	Traffic Distribution	34

	Journey Time Surveys.....	35
7	HIGHWAY IMPACT	37
	Development Traffic Impact Upon Level Crossing.....	38
	Detailed Junction Assessments	39
	Additional Junctions – Proportional Impact.....	45
8	OUTLINE CONSTRUCTION METHODOLOGY	49
9	SUMMARY & CONCLUSION	51

Figures

Figure 1	- Site Location – Wider Context.....	6
Figure 2	- Site Location – Local Context	
Figure 5.1	- Pedestrian Links	
Figure 5.2	- Cycle Facilities	
Figure 5.3	- 5km Isochrone Catchment.....	
Figure 5.4	- Local Bus Routes.....	
Figure 6.1	- Northbound/Southbound Route Options	

Appendices

Appendix A	- Level Crossing Queue & Speed Surveys	8
Appendix B	- Accident Data	8
Appendix C	- Census Mode Share Data	8
Appendix D	- Indicative Masterplan	8
Appendix E	- Vehicle Swept Path Analysis	8
Appendix F	- Proposed Footbridge Plans	8
Appendix G	- Travel Plan	8
Appendix H	- Trip Generation - Surveys	8
Appendix I	- TRICS Trip Generation Assessment.....	8
Appendix J	- Census Distribution Analysis.....	8
Appendix K	- Traffic Flow Diagrams.....	8
Appendix L	- PICADY Outputs	8
Appendix M	- LINSIG Outputs.....	8

1 INTRODUCTION

- 1.1 Vectos is retained by Generator Group LLP and Barratt David Wilson Homes to provide traffic and transportation advice in relation to the proposed Residential development at the site known as the Copseys Nursery/Manor Farm site in Denvilles, Havant.
- 1.2 The proposed development will comprise a mix of 191 residential dwellings of which 35% are to be provided as affordable units. **Figure 1** shows the location of the site in a wider context within Hampshire.
- 1.3 The Transport Assessment (TA) will consider the traffic and transport effects of the proposed development and provides supporting evidence for the allocation of this site for housing. This TA is based upon the DfT “Guidance on Transport Assessment” (March 2007) and the scope of TA has been agreed with both the local highway authority, Hampshire County Council and the local planning authority, Havant Borough Council.
- 1.4 Discussions have been held with Havant Borough Council and Hampshire County Council about the allocation of the Copseys nursery/Manor Farm site for housing in the context of the emerging Local Development Framework (LDF) for 191 units. The site is recognised as a potential future housing site in the emerging Draft Local Plan (Allocations). The TA will assume a total of 100 units associated with the Copseys Nursery site and a further 91 units associated with Manor Farm.
- 1.5 The entire site will therefore assess the development impact based upon a total of 191 units. The TA will consider the sites individually and combined.
- 1.6 The TA demonstrates that the site is accessible by non-car modes of transport and that the development will provide facilities for pedestrians, cyclists and public transport users, as well as access for vehicular traffic including servicing vehicles. There are no offsite highway constraints to justify why the proposed site cannot be allocated for housing.
- 1.7 The report will first describe the existing situation and then the relevant transport policy before setting out the development proposals relating to the scheme. In the following sections transport issues including accessibility, trip generation, vehicular access and car parking will be addressed.
- 1.8 The report has therefore been structured in the following format:

- Section 2 provides a description of the existing site situation, the surrounding area and baseline transport data;
- Section 3 details current policy issues relevant to the site;
- Section 4 describes the development proposals including vehicular access requirements and parking provision.
- Section 5 sets out a sustainability strategy for the site;
- Section 6 sets out the traffic generation and distribution associated with the site;
- Section 7 details the site's traffic impact; and
- Section 8 provides a summary and the conclusions to the report.

2 EXISTING CONDITIONS

Site Location

- 2.1 The site is located to the east of Southleigh Road, north of the A27 and is on the eastern side of Havant. It is approximately 1.5km to the north-east of the town centre. The site is currently accessed from a priority junction with Blenheim Gardens, a residential road that connects directly to Southleigh Road to the north via Spindle Close and to the south via Fifth Avenue. There is an existing agricultural access serving the Manor Farm site at the terminus of Hallett Road.
- 2.2 The site is identified in **Figure 2** in a local context.

Existing Uses

- 2.3 The masterplan site comprises two existing sites; Copseys nursery and Manor Farm. Copseys nursery is a now defunct agricultural nursery which was used as a distribution centre for flowers. There is approximately 18,580 sq. m (200,000 sq ft) of glasshouses and industrial packing buildings on the site.
- 2.4 The Manor Farm site consists of agricultural farmland. The combined Copseys Nursery/Manor Farm measures approximately 6 hectares.

Site History

- 2.5 The operation of the nursery required the use of large delivery and service vehicles. The re-development of this site to a residential land use would result in a net increase in car traffic but would remove inappropriate commercial vehicles from the local residential streets.
- 2.6 Due to the need for delivery vehicles to ensure that produce was preserved, refrigerated vehicles were used, drawing complaints from local residents with respect to noise generated as a result of deliveries undertaken at a variety of times throughout the week, particularly during unsociable hours.

Surrounding Highway Network

- 2.7 The site is accessed via Southleigh Road, a two-way single carriageway residential road measuring approximately 7 metres in width, with good quality footways provided on

either side of the road carriageway. Keep clear road markings are located adjacent to the site access junctions with Southleigh Road, although no other on-street parking restrictions apply.

- 2.8 Existing access to the Copseys nursery site is provided via Blenheim Gardens which are in turn connected to Southleigh Road via Spindle Close and Fifth Avenue. Manor Farm is accessed via Hallett Road.
- 2.9 Southleigh Road provides a connection to the A27 to the south for journeys to Portsmouth, Chichester and beyond and to the B2148 to the north to Horndean.
- 2.10 To the north of the site the speed limit on Southleigh Road increases from 30mph to 40mph close to the junction with Eastleigh Road. In order to ascertain the 85th percentile vehicle speeds on Southleigh Road, speed surveys were undertaken adjacent to the junction of Southleigh Road with Rowan Road, which is located approximately 50 metres to the north of the proposed access junction with Spindle Close, and approximately 150 metres to the south of the change in regulatory speed limit from 30mph to 40mph. The speed survey data is contained within **Appendix A** and summarised in **Table 2.1**.

Table 2.1 – Speed Survey on Southleigh Road - 85th percentile Results

	Light Vehicles (Mph)	Heavy Vehicles (Mph)
Northbound	32.9	32.6
Southbound	32.3	29.3

- 2.11 The 85th percentile speeds demonstrate that the speeds are less than 37.5 mph and that vehicle speeds recorded along Southleigh Road are not excessive in relation to the 30mph regulatory speed limit. The application of Manual for Streets design criteria is therefore appropriate at this location.
- 2.12 On the Southbound approach there is an electronic VMS speed limit sign that activates to alert a driver if there speed is recorded above 30mph, which may account for the marginally lower 85th percentile speeds travelling southbound along Southleigh Road.

Level Crossing

- 2.13 There is a level crossing on Southleigh Road which crosses the railway line serving Warblington railway station to the south of the site. Warblington station is on the coastal railway line which operates between Portsmouth and Chichester. During peak traffic periods; particularly the PM peak, while the level crossing is closed to allow trains to pass, significant vehicle queues have been observed.
- 2.14 Traffic surveys recording vehicle queue lengths and the length of duration that the level crossing barrier is activated for were undertaken on Thursday 12th May 2011 for the 7am-10am and 3pm-7pm time periods. The results of this survey are presented in **Appendix A**.
- 2.15 The survey results indicate that during the morning period recorded (7am-10am) the average duration to which the level crossing barrier was activated i.e. barriers brought down, was 3 minutes 34 seconds, with a maximum duration of 6 minutes 54 seconds. The maximum northbound queue of vehicles recorded at the crossing was 15 vehicles, with a maximum southbound queue of 33 vehicles.
- 2.16 In the afternoon/evening peak period (3pm-7pm) the average duration to which the level crossing barrier was activated was 2 minutes 38 seconds, with a maximum duration of 7 minutes 39 seconds. The maximum northbound queue of vehicles recorded at the crossing was 60 vehicles, with a maximum southbound queue of 31 vehicles.
- 2.17 A review of the video surveys indicates a typical rate of vehicle discharge from the level crossing of 22 vehicles per minute, indicating that it would take almost 3 minutes for a vehicle queue of 60 vehicles to clear the level crossing once the barriers have been raised. The survey results demonstrate that the operation of the level crossing is a pre-existing issue affecting the free flow of vehicular traffic along Southleigh Road.
- 2.18 Further analysis of the rail level crossing is contained within chapter 6.

Existing Traffic Generation

- 2.19 An issue that has been raised historically on a number of occasions by local residents relates to HGVs parking on Blenheim Gardens as they wait to enter the Copseys Nursery site. These vehicles cause a disturbance for local residents on these residential roads, particularly as it is apparent that many keep their refrigeration units running.

- 2.20 In February 2002 a planning application on the site for a change of use from a nursery to a distribution centre for flowers was refused, mainly because of this concern over the impact of large delivery vehicles on local residents.
- 2.21 In order to quantify the existing traffic generation associated with Copseys Nursery, Automatic Traffic Count (ATC) surveys were undertaken across the entrance access to the nursery in July 2009, as contained within **Appendix B**.
- 2.22 A review of the ATC data is summarised to derive the average existing traffic flows for an average weekday. This is presented within **Table 2.2**.

Table 2.2 – Existing Average Weekday Flows – Copseys Nursery Site

ATC Summary Table – Weekday Average Existing Flows					
	Light Vehicles		Heavy Vehicles		Total Vehicles
	In	Out	In	Out	In/Out Combined
8-9am	3	2	0	0	5
5-6pm	1	2	0	0	3
11pm-7am	5	3	0	1	9
24 hr	38	40	2	2	82

- 2.23 The surveys indicate that vehicular traffic generated as a result of the operation of the nursery are typically low during the AM and PM weekday peak hours, however; delivery traffic was recorded arriving at the site between 4am and 7am and subsequently represented a noise disturbance nuisance to local residents.
- 2.24 One benefit of the re-development of the site for residential units is that while there may be more traffic generated during peak periods than for the existing nursery there would be a significant reduction in the number of larger vehicles to the site with only occasional deliveries being made.

Pedestrian & Cycle Routes

- 2.25 On the Havant Borough Council Cycle Map, Southleigh Road is identified as a cycle network link and on-road cycle lane.

- 2.26 The western footway measures approximately 1.8 metres in width, whilst the eastern footway measures approximately 3 metres in width, of which 1 metre consists of a grass verge. Advisory on-road cycle lanes are provided in both directions along Southleigh Road.
- 2.27 There are no formal pedestrian crossings within the immediate vicinity of the school, however, motorists are encouraged to reduce speeds to 20mph within the vicinity of the school. There is also signage which denotes a shared pedal cycle and pedestrian route.
- 2.28 The National Cycle Route 2 is partially incomplete but is proposed to link the entire south coast between Dover in Kent and St. Austell in Cornwall. The section between South Mundham and Christchurch in Hampshire has an alignment to the south connecting Emsworth to Havant. This section of route 2 is indicated as partly on-road and partly traffic free.

Bus Services

- 2.29 The 27 bus route operates along Southleigh Road to the west of the site and provides a connection to the town centre. The 27/27A serves the Denvilles, Southleigh Road bus stop and is operated by Emsworth & District Buses which operate a number of rural and urban services in Havant and Emsworth.
- 2.30 Bus stops on Southleigh Road typically consists of a bus pole and flag with a bus shelter provided where there is sufficient footway width to do so as the narrow footway and carriageway acts as a physical constraint to providing bus shelters.
- 2.31 The 27 bus route which travels from Rowland's Castle through to Southbourne provides up to 3 services/hour in each direction from Monday to Friday, with 2 services/hour operating on Saturdays.

Rail Services

- 2.32 Approximately 400 metres to the south of the site is Warblington railway station that is on the coastal railway line. Warblington Rail station is operated by Southern Railways (SR) and is staffed on a part-time basis from 07:55 to 9:10 Monday to Friday. The rail station operates unstaffed at weekends.

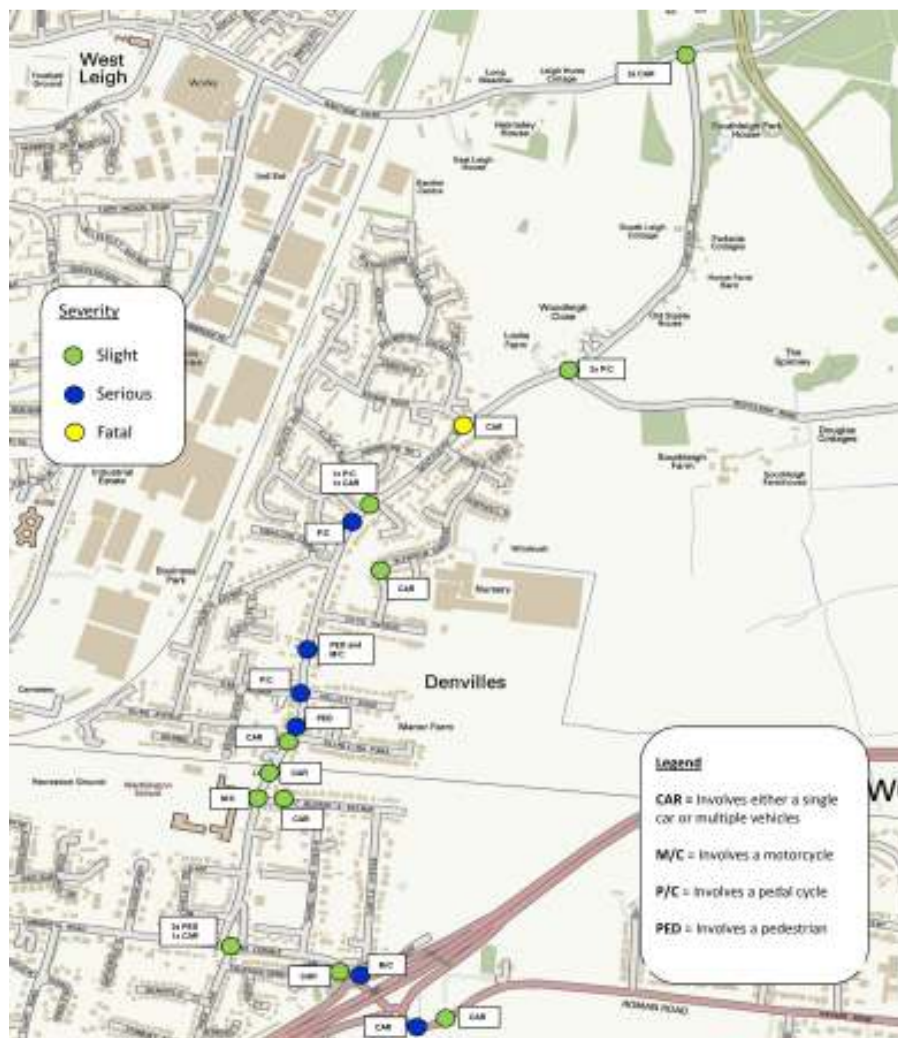
- 2.33 Services typically operate from Littlehampton to Portsmouth & Southsea. Services between Southampton Central and London Victoria/London Bridge operate at a frequency of up to 2 trains per hour.
- 2.34 The Havant Borough Council website provides a summary of the train services at the station as follows:-
- 1 per hour to Southampton (SR)
 - 1 per hour to London Victoria (SR)/London Bridge (weekday peak periods only)
- 2.35 Havant railway station is around 1.5km to the west of the site and is on both the coastal railway line and the line between Portsmouth and London. A summary of the train services available at Havant station is as follows:-
- 3 per hour to London Waterloo (SW)
 - 2 per hour to Brighton (SR, GW)
 - 1 per hour to Littlehampton (SR)
 - 2 per hour to London Victoria (SR)
 - 2 per hour to Southampton (SR)
 - 6 per hour to Portsmouth (SR, SW)
 - Occasional to Great Malvern (GW)

Accident Analysis

- 2.36 A review of personal injury accident (PIA) data has been undertaken for a 5 year period between 1st April 2007 and 31st March 2012. The data covers the following locations:
- Full extent of Southleigh Road;
 - Emsworth Road (between Southleigh Road and the A27); and
 - Full extent of Eastleigh Road.
- 2.37 Over the 5 year period there has been one fatality in the area. There are no significant clusters of accidents with the highest concentration being 3 accidents at the Emsworth Road/Southleigh Road junction and 2 accidents at the junctions of Eastleigh Road with Southleigh Road and Bartons Road. The accident data is contained within **Appendix C**.

- 2.38 One accident took place on Blenheim Gardens and there were no recorded accidents on Spindle Close, Fifth Avenue, Hallett Road or Glenleigh Road.
- 2.39 A total of 4 accidents were recorded on Southleigh Road to the north of the level crossing and two to the south; of the accidents on Southleigh Road 4 involved vulnerable road users, i.e. pedestrians, cyclists and/or motorcyclists.
- 2.40 **Figure 2.1** provides a plan showing the location of accidents by road user casualty and severity.

Figure 2.1 – Accident Locations by Severity and Road User



Fatal

- 2.41 One fatality was recorded during the 5 year period. The fatality did not involve any other road users and can be considered an unfortunate anomaly on account of the circumstances which lead to the collision.
- 2.42 This collision involved a car travelling along Rowan Road which failed to stop at the junction with Southleigh Road. The vehicle proceeded over the give way line and left the road straight ahead colliding with a garden wall. The driver was suspected of being affected by alcohol and diminished mental or physical faculties.

Serious

- 2.43 Of the 6 serious accidents recorded, 4 involved vulnerable road users; 2 pedestrians, 1 cyclist and 1 motorcyclist. A further two serious casualties involved vehicle drivers. A summary of each accident is given below.
- 2.44 A serious accident was recorded on Southleigh Rd involving a pedestrian. The pedestrian attempted to cross Southleigh Road between parked cars opposite the junction with Glenleigh Park. The casualty failed to look properly and was hit by the car as they emerged from between parked vehicles.
- 2.45 A further serious casualty involved a pedestrian crossing Southleigh Rd amongst stationary traffic and being hit by a motorcyclist. The pedestrian was reported as stepping into the path of the motorcycle.
- 2.46 A further serious accident involved a cyclist at the junction of Southleigh Rd with Nutwick Road. The car entered the junction and collided with the cyclist who was travelling north-east along Southleigh Rd.
- 2.47 A serious accident was recorded at the roundabout of Emsworth Rd with the A259. The casualty involved a motorcyclist who collided with a car. The car driver was reported to have failed to look properly.
- 2.48 A serious accident was recorded as a result of a cyclist being hit by a car. The cyclist emerged from First Avenue into the path of the car on Southleigh Rd. The report indicates that the cyclist was a slight casualty and car driver was serious.

- 2.49 A final serious accident was recorded on the A2057 Havant Rd. The car driver lost control on a left hand turn which was reported to have been as a result of being impaired by alcohol.
- 2.50 One of the common themes for accident causation is vehicle drivers failing to look properly when undertaking turning manoeuvres from junctions leading out onto Southleigh Road. However, no accidents have occurred at any of the proposed site access junction locations.
- 2.51 Two of the pedestrian casualties are as a result of pedestrians emerging from parked or stationary vehicles. This is likely to be as a result of stationary vehicles queuing along Southleigh Road due to the level crossing being in operation. The two serious casualties were both school children (11 and 14 years old respectively) and occurred at 8.15am and 4.20pm, suggesting pupils travelling to and from Warblington School.
- 2.52 The provision of a central pedestrian refuge island on Southleigh Road to the north of the level crossing or a similar facility to assist pedestrian crossing could be considered to mitigate this type of accident. This is considered in section 5 below.

Slight

- 2.53 A total of 22 slight accidents were recorded, 15 of which involved vehicle occupants. A further 2 pedestrian, 4 cyclist and 1 motorcyclist accident were recorded as slight.
- 2.54 Only one slight accident was recorded in the vicinity of the proposed site access junctions as a result of traffic turning onto Southleigh Road. The slight accident was a result of a vehicle turning right out of Glenleigh Park onto Southleigh Road and colliding with a vehicle travelling northbound on Southleigh Road. The causation factor is described as “disobeying a give way sign” and “reckless/careless driving”. This may be accounted by the driver’s relative inexperience, as the driver was a 17 year old male.
- 2.55 Details of the non-vehicle casualties are summarised below:
- A car emerging from Eastleigh Road fails to notice a cyclist on Southleigh Road travelling north-east. The resulting collision results in a slight injury to the cyclist.
 - Elderly pedestrian walks behind a reversing vehicle causing the pedestrian to fall and sustain slight injuries.

- A slight accident was recorded involving a young motorcyclist on a scooter. The driver undertook a right turn manoeuvre into Warblington School without signalling correctly and collided into a car which was attempting to overtake the scooter.
- A further slight accident was reportedly caused by poor weather conditions and poor judgement. The cyclist, who was travelling southwest along Eastleigh road, enters the junction intending to continue ahead onto Southleigh road. Vehicle 2 (a car) travelling northwest along Southleigh Road pulls into the junction intending to turn left colliding with the cyclist.
- A slight pedestrian casualty resulted from a car reversing from a parking bay without looking at the junction of Southleigh Rd with Emsworth Rd.
- A slight cyclist casualty resulted from a van turning right onto Southleigh Rd from Nutfield Rd, without looking properly before undertaking the manoeuvre.
- One slight accident occurred on Blenheim Gardens and involved two car drivers. This resulted in a low impact collision as one vehicle emerged from behind parked cars and the oncoming vehicle reacted late.

Accident Summary

- 2.56 Whilst accidents have occurred along Southleigh Road, none of been recorded at the proposed site access junctions of Spindle Close, Hallett Road or Fifth Avenue as a result of turning vehicle traffic and only one at the junction with Glenleigh Road. Potential accident mitigation measures that could be implemented are discussed in chapter 5 (paragraphs 5.26-5.27).

Existing Travel Behaviour

- 2.57 In order to establish the existing travel patterns of residents within the Warblington/Denvilles area, census journey to work data has been reviewed based upon the daytime population for the ward within which the site is located, St. Faiths; and for the Havant area as a whole. **Figure 5.1** provides a plan of the local facilities & amenities to the site.
- 2.58 **Table 2.3** provides a breakdown of person trips by mode in percentage terms.

Table 2.3: Journey to work % Mode Share – Daytime Population

Mode	St. Faiths	Havant Borough	Average
Train	7%	3%	5.0%
Bus, minibus or coach	3%	6%	4.5%
Taxi or minicab	0%	1%	0.5%
Driving a car or van	67%	68%	67.5%
Passenger in a car or van	6%	8%	7%
Motorcycle, scooter or moped	1%	1%	1%
Bicycle	5%	4%	4.5%
On foot	10%	8%	9%
Other	1%	1%	1%
total	100%	100%	

- 2.59 The 2001 census data indicates that a relatively high proportion of journey to work trips are made by car, with an average of 74.5% of all trips made by private vehicle. Walking and cycling account for almost 15% of all person trips in St. Faith's, with bus based commuting accounting for 3% of trips.
- 2.60 In terms of distance travelled to work based upon residents of St. Faith's ward, 44% of trips are less than 5km, which is well within the desirable threshold for cycling trips. A further 32% of trips are less than 10km which is also within a distance considered acceptable for commuting purposes by cyclists. The Census data is contained within **Appendix D**.

3 POLICY REVIEW

National Planning Policy Framework (NPPF)

- 3.1 The publication of the NPPF supersedes the majority of the previous national Planning Policy Statement and Planning Policy Guidance. Thus, it now forms the principal national planning policy for development. It sets out the Government's key economic, social and environmental objectives and the planning policies to deliver them.
- 3.2 The NPPF sets out the Government's planning policies for England and how these are expected to be applied. One of the 12 core land-use principles within the NPPF includes:
- "[to] 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."*
- 3.3 The proposed development will ensure that it is accessible by all modes of transport and this complies with the objectives of NPPF.
- 3.4 In relation to transport, the National Planning Policy Framework states that the objectives of transport policy are to:
- 'Facilitate economic growth by taking a positive approach to planning for development; and, support reductions in greenhouse gas emissions and congestion, and promote accessibility through planning for the location and mix of development.'*
- 3.5 The document also states that development should be located and designed so that it:
- *gives priority to pedestrian and cycle movements, and has access to high quality public transport facilities*
 - *creates safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians*
 - *incorporates facilities for charging plug-in and other ultra-low emission vehicles; and, considers the needs of disabled people by all modes of transport.'*
- 3.6 For developments that are likely to generate significant amounts of traffic, the NPPF states that applications should be supported by a Transport Statement or a Transport Assessment.

The document also highlights the importance of producing a Travel Plan for these developments.

3.7 When assessing an application, the NPPF states that decisions should consider 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*
- *Improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Subject to those considerations, development should not be prevented or refused on transport grounds unless the residual impacts of development are severe, and the need to encourage increased delivery of homes and sustainable economic development should be taken into account.*

Regional Guidance

Hampshire Sustainable Community Strategy 2008-2018

- 3.8 The Hampshire Sustainable Community Strategy sets out quality of life issues, key trends that impact on Hampshire and 11 long term ambitions to achieve the vision that *"Hampshire continues to prosper, providing greater opportunity for all without risking the environment."*
- 3.9 Section 3.4 outlines the transport issues which impact upon quality of life, namely;
- 3.10 *"a comprehensive and well-maintained infrastructure of roads and public transport across the county"*
- 3.11 *"high-quality, accessible and local public services providing value for money and responsive to communities' needs"*
- 3.12 Section 5.4 summarises the existing traffic & congestion situation. It notes that the steady long-term national trend of traffic growth is expected to continue, with 30% extra traffic by 2030. It highlights that the plan aspires to minimise private vehicle use in Hampshire:
- 3.13 *"We musty plan for a future with less need to travel and more intelligent use of the transport system"*

- 3.14 Infrastructure and services are developed to support economic and housing growth whilst protecting the environment and quality of life.
- 3.15 Providing modern infrastructure and services (ranging from transport, water and sewerage to business premises, educational facilities, cultural and community facilities, and communications technology) and improving town and country environments will be key to continued economic prosperity.
- 3.16 This will mean that new development must be preceded and underpinned by an adequate level of infrastructure, which is planned and delivered in a way that creates high-quality and safe environments, with good access to local services for all.
- 3.17 Forecasts show that the existing road network cannot accommodate the predicted traffic growth and that our economic ambitions and new-development agenda require new investment in public transport and highways.
- 3.18 Section 7 - Theme C, sets out the long-term priorities and targets in relation to transport issues:
- i) Highways maintenance
 - ii) Improve road safety and reduce casualties
 - iii) Quality of life in rural villages
 - iv) Tackling congestion hot-spots
 - v) Accessibility

Hampshire Local Transport Plan 2011-2031

- 3.19 In February 2011, Hampshire County Council approved a new Local Transport Plan (LTP), which sets out transport policies, objectives and a long term visions for transport in the County. This guidance has been adhered to in the preparation of this Transport assessment.
- 3.20 The LTP will help the county council and developers support “*stronger, safer communities, maximising well-being and enhancing quality of place*”.

- 3.21 The County Council states its aim is to *“provide safe, efficient and reliable ways to get around a prospering and sustainable Hampshire”*.
- 3.22 Chapter 2 states that efforts will be made to minimise adverse impacts on the environment when carrying out work on the highway.
- 3.23 Chapter 7 look at Transport policy for South Hampshire. The vision for South Hampshire is to create:
- “A resilient, cost effective, fully-integrated sub-regional transport network, enabling economic growth whilst protecting and enhancing health, quality of life and environment”*.
- 3.24 The challenges facing South Hampshire identified include maintaining the existing transport network, widening travel choices to offer alternatives to the private car and mitigating the adverse impacts of transport activities on the community.

Havant Borough Council Residential Parking and Cycle Provision SPD

- 3.25 The Havant Borough Council Residential Parking and Cycle Provision document (SPD) was adopted on the 22 March 2010.
- 3.26 It sets out guidance to developers, householders and others on the provision of car parking and cycle space on residential developments in the borough.
- 3.27 The standards for vehicle parking relevant for new development, as stated in the Parking SPD, are outlined in Table 3.1.

Table 3.1 – Allocated Car Parking Standards

Unit Size	Standard Zone	Havant Town Centre	Waterlooville Town centre
1 Bed Unit	1 space	Max 1 space	1 space
2 Bed Unit	2 spaces	Max 1 space	1 space
3 Bed Unit	2 spaces	Max 1 space	1-2 spaces
4+ Bed Unit	3 spaces	Max 2 spaces	1-2 spaces

3.28 The standards for cycle parking, as stated in the SPD, are outlined in Table 3.2.

Table 3.2 – Cycle Parking/Storage Provision

Unit Size	Long Stay	Short Stay
1 Bed Unit	1 space per unit	1 loop/hoop per unit
2 Bed Unit	2 spaces per unit	1 loop/hoop per unit
3 Bed Unit	2 spaces per unit	1 loop/hoop per unit
4+ Bed Unit	2 spaces per unit	1 loop/hoop per unit

3.29 Cycle parking provision will be within the site of each individual unit and again will comply with the standards set out within Hampshire County Council cycle parking standards. Both vehicle and cycle parking will be provided in accordance with the Havant Borough Residential Parking and Cycle Provision SPD, March 2010. The cycle parking spaces will be safe, secure and weather protected.

Havant Borough Council Core Strategy

3.30 Policy CS9 Housing states that, *“Planning permission will be granted for housing proposals that will contribute to achieving a net total of 6,300 new dwellings between 2006 and 2026, and deliver on average 30-40% affordable housing on sites of 15 dwellings (gross) or more and secure a suitable contribution.”*

3.31 Policy CS20 Transport and Access Strategy states that, *“development will be permitted that (a) improves accessibility to goods, services and employment and promotes equality in the transport system. (b) Maintains or improves the range of transport modes accessible to the users of the development site with specific emphasis on public transport, especially high quality/frequency buses and includes walking and cycling where appropriate.”*

Section Summary

3.32 In summary national, regional and local policies promote the provision of measures to encourage use of non-car modes to access development. As will be described in subsequent

sections of this report, the proposals make provision for improved pedestrian and cycle access to the site as well as facilitating access by bus services.

4 DEVELOPMENT PROPOSALS

- 4.1 The proposed development will constitute 191 residential units, consisting of a mix of 1, 2, 3, 4 and 5 bedroom units. The roads around the site are of a suitable standard to accommodate the level of traffic that would be associated with the re-development of the site.
- 4.2 The 191 units will consist of the following breakdown by dwelling type.

Table 4.1: Residential Units by Size and Tenure Type

Site	Unit Size	Open Market	Affordable	Total
Copseys Nursery (Generator Group)	2 bed	7	11	18
	3 bed	27	19	46
	4 bed	22	5	27
	5 bed	9		9
	Total	65	35	100
Manor Farm (Barratts David Wilson Homes)	1 bed		6	6
	2 bed		9	9
	3 bed	12	17	29
	4 bed	38		38
	5 bed	9		9
	Total	59	32	91
Overall Total		124	67	191

- 4.3 Following discussions with Havant Borough Council, a demand to provide space for allotments within the borough has been identified. The indicative masterplan subsequently includes a total of 32 allotments each measuring 75 sqm with 12 associated parking spaces.
- 4.4 The indicative masterplan is contained within **Appendix E**.

Access Arrangements

Pedestrian/Cyclist Access

- 4.1 Footways measuring at least 1.8 metres in width will be provided adjacent to the access road carriageway throughout the site. The internal streets have been designed to provide footways, whereas the private driveways have been designed in accordance with home zone principles with pedestrians and cyclists sharing the carriageway with a limited number of

vehicles accessing parking courts, mews, and off-street parking spaces. The private drives are designed for vehicle speeds of <10 mph.

- 4.2 In linking the two development sites, two timber footbridges and pedestrian footpaths will connect the Copseys Nursery site to the Manor Farm site. The footbridges will provide north-south pedestrian legibility in crossing the drainage ditch that separates the sites.

Vehicular Access

- 4.3 The existing access to the site via Blenheim Gardens will be utilised and designed in accordance with the guidance given in the DfT's Manual for Streets design guidance and Hampshire's Companion Guide.
- 4.4 In addition, three further accesses will be created to link the development via Hallett Road, Glenleigh Park and Fifth Avenue, forming a total of four access points allowing vehicular traffic to access the site via Southleigh Road.
- 4.5 The access via Blenheim Gardens will utilise the existing access into the Copseys Nursery site. The access has been widened to a width of 5.5 metres to allow for two-way vehicular access.
- 4.6 The three existing cul-de sac streets of Fifth Avenue, Glenleigh Park and Hallett Road will be amended to form through routes with the site, allowing direct access to the site from these streets.
- 4.7 In order to extend and connect the terminus of Hallett Road to the site, it is necessary to widen the existing vehicular access route to 5.5 metres. It is not proposed to remove the mature tree at the southern terminus of Hallett Road. Detailed design work has been undertaken to allow an adequate vehicular access into the development to be constructed without adversely affecting the tree which is protected by a TPO (tree preservation order).
- 4.8 Access to the site was originally proposed from Blenheim Gardens, Fifth Avenue and Glenleigh Park. A vehicular access is now also proposed from Hallett Road following the comments made during the public exhibition and the Development Control Forum (DCF).

Issues Raised at Public Exhibition/DCF

- 4.9 Following several public exhibitions and Development Consultation Forums (DCF), several issues have been raised by members of the public. One of which is in relation to the junction

turning radii of Hallett Road/Southleigh Road and the other access junctions with Southleigh Road.

- 4.10 Drawing **110029/AT/18** demonstrates that a large car can perform a turning manoeuvre from all access junctions with Southleigh Road onto Southleigh Road without the risk of vehicle incursion into the oncoming carriageway lane.
- 4.11 A further drawing – **110029-SK-12** demonstrates that all of the four access junctions with Southleigh Road conform to Manual for Streets guidelines in terms of visibility requirements. These guidelines being the appropriate design standards to use for Southleigh Road in line with Hampshire County Council's guidance given the speed of traffic along the road.
- 4.12 First Avenue which will not form one of the access junctions, does not meet the required visibility standards to the south, however it is considered that this could be remedied by cutting back existing vegetation. The drawings are contained within **Appendix F**.

Parking Requirements

- 4.13 A review of paragraphs 4.1 to 4.11 & Table 2 of *the Havant Borough Residential Parking & Cycle provision - SPD, March 2010*, identifies a methodology for determining appropriate car parking allocation.
- 4.14 The document indicates that by applying a car ownership calculation based on 2001 census ward data and then applying a 34% growth to account for increased future demand; an average level of car ownership based upon dwelling size could be calculated. **Table 4.2** applies the car ownership levels for St. Faiths in relation to the proportion of dwellings by size to determine an average car parking provision.

Table 4.2 - Calculation of Car Parking Provision based upon St. Faith's ward data

	1 bedroom Unit	2 bedroom Unit	3 bedroom Unit	4+ bedroom Unit	Total
St. Faith's Ward Avg. car parking requirement	0.88	1.33	1.92	2.37	
Number of units	6	27	75	83	191
Total parking demand	5.3	36	144	196.7	382
Total Average (382/191)					2

- 4.15 The table shows that based upon the mix of dwellings proposed for the site in relation to car ownership levels within the St. Faith's ward, the application of an average of 2 parking spaces per unit would be required.
- 4.16 Table 4 of the SPD refers to the Hampshire County Council maximum parking standards provision of 1 space per 1 bedroom unit, 2 per 2/3 bedroom unit and 3 per 4+ bedroom unit. This would correspond to a maximum total of 459 spaces equating to a parking ratio of 2.4 spaces per unit on average. These standards are identified as maximum standards with a 50% reduction factor applicable for sites situated in sustainable locations.
- 4.17 The development will provide an average of 2.05 on-plot vehicle parking spaces per unit, with a total of 391 parking spaces provided.
- 4.18 An average parking ratio of 2.05 corresponds to >85% of the maximum Hampshire County Council parking standards. This level of provision complies with the Havant Borough Council and Hampshire County Council standards and will ensure that any future anticipated parking demand will be met.
- 4.19 The Hampshire County Council and Havant Borough Council standards indicate a provision of 1 cycle parking space per 1 bedroom dwelling and 2 cycle parking spaces per 2+ bedroom dwellings.
- 4.20 Cycle parking will be provided within the curtilage of each property within a garage or equivalent to ensure that the cycle parking standards are met.

Internal Site Highway Layout

- 4.21 The internal layout has been designed to be consistent with the principles of the DfT's Manual for Streets design guide and with Hampshire County Council's Companion document to Manual for Streets.
- 4.22 The internal layout ensures that the proposed scheme would not be dominated by cars, but has been designed to accommodate refuse vehicles, emergency vehicles and service vehicles as appropriate. **Appendix F** contains vehicle swept paths for the large refuse vehicle that is used by HBC, for fire tenders, pantechicon and, where relevant, for large saloon cars.
- 4.23 As such, the main access road that connects through to the site has been designed to a width of 5.5 metres with tight junction radii to encourage low vehicle speeds. In addition to the main access road, private mews courts have been provided and private drives measuring between 4.5-4.8 metres in width.
- 4.24 In addition to the swept path analysis, plans contained in **Appendix E** show the visibility splays at the junctions on the site and forward visibility at bends to demonstrate that the site accords with the relevant design standards. The design layout principles are to encourage low speeds of <20 mph on the main access routes through the site, with the minor access roads and private drives designed for speeds of <10 mph. Visibility splays are shown which accord to Manual for Streets design standards for this category of street arrangement.
- 4.25 Pedestrians would be able to enter and exit the site via footpaths located alongside the vehicular routes onto Southleigh Road.

Vehicle Servicing Arrangements

- 4.26 Drawing **110029-AT-06** demonstrates how a large refuse vehicle would access the proposed private driveway. The maximum distance within which a refuse vehicle must be able to access a property (55 metres in accordance with Manual for Streets); can be undertaken by utilising the turning head facilities provided. This is categorised in Manual for Streets as *"residents should not be required to carry waste more than 30 m to the storage point, and that waste collection vehicles should be able to get to within 25 m of the storage point"*.
- 4.27 Drawing **110029-SK-16** and **110029-SK-17** demonstrate the visibility splays achieved at the site access junction with Blenheim Gardens based upon the MfS standards for a 30 mph

road. For the internal accesses to mews courts forward visibility splays of 17 metres have been generally applied based on a design speed of up to 15mph.

5 SITE SUSTAINABILITY STRATEGY

- 5.1 This section of the report assesses the suitability of the site for the proposed development with regard to the accessibility of local facilities and the links by public transport, walking and cycling.

Pedestrian Infrastructure

- 5.2 Walking is an important mode of transport at all levels, forming part of a journey with other modes or as a mode in itself for single local trips. Good integration with the existing facilities and neighbouring areas will encourage walking to, from and within the development.
- 5.3 A person's willingness to walk is dependent on a number of factors such as convenience, safety, quality of the route, directness of the route, fitness and the purpose of the trip.
- 5.4 The Institution of Highways and Transportation (now the Chartered Institution of Highways and Transportation, CIHT) in their document '*Guidelines for Providing for Journeys on Foot*' state that, "*walking accounts for over a quarter of all journeys and four fifths of journeys of less than one mile*".
- 5.5 The document suggests preferred acceptable walking distances for different journey purposes. The preferred maximum walking distance for a shopping based trip to town centres is suggested as 800 metres whereas the maximum walking distance for commuting or travel to school is 2000 metres.
- 5.6 **Figure 5.1** shows the primary pedestrian links to education, healthcare, leisure and employment destinations as well as the rail station. A 2000m catchment area has also been plotted to show the urban area that could be reached within a reasonable journey on foot.
- 5.7 Footpaths within the site will be designed to a minimum width of 1.8 metres, with a longitudinal gradient of no greater than 8%.
- 5.8 Dropped kerbs and tactile paving will be provided at all uncontrolled crossing points within the site and at any changes to the existing highway. **Drawing 110029/A/01** contained within **Appendix G** identifies the main pedestrian desire lines and shows the proposed location for where road markings could be used to provide a visual 450mm build-out in encouraging reduced vehicle speeds. The location of the build out on Southleigh Road would provide a

direct crossing point from the level crossing to the proposed Warblington School footpath/cycleway and Warblington High School. The implementation of this facility will need to be discussed and agreed with Hampshire County Council.

- 5.9 In addition, corduroy warning paving may be required to notify people with visual impairments of any points where a standard footway meets a shared use pedestrian and cycle footway.

Proposed Pedestrian Footbridge

- 5.10 The issues associated with the operation of the existing level crossing are well documented and have been discussed with both Havant Borough and Hampshire County Council officers in detail. This is the main existing issue on the highway network in the vicinity of the site. The existing queuing that occurs is caused by the length of time that the level crossing is sometimes closed for traffic.
- 5.11 A second existing problem identified is that schoolchildren and other pedestrians are often ignoring the gates starting to close and are still crossing the track, leading to delays in the operation of the crossing. When the gates open, pedestrians mixing with traffic crossing the track further serves to restrict vehicle flow and increase delays.
- 5.12 The “*Havant Borough Transport Statement*” sets out the transport objectives and delivery priorities for Havant Borough Council up to 2026.
- 5.13 The document sets out a couple of schemes located within the ‘St Faith’s Ward’, which the development site is located within. These are set out below:
- *New footbridge with cycle gully over railway at Warblington Station on Southleigh Road.* The cost of the scheme has been estimated at £1,500,000, with funding to be provided via developers. It also notes that funding has yet to be identified. This is set as a “long term” scheme (more than 10 years); and
 - *Warblington School path - Southleigh Road to Hayling Billy Trail along railway - Cycle path 3m wide, with lighting and fencing.* The cost of the scheme has been estimated at £200,000, and states that feasibility of the route is complete with planning permission obtained. It also notes that the scheme will be funded by developers. This scheme is listed as being short-term (within 5 years).

- 5.14 There is the potential for S106 highways and transport contributions associated with the proposed development to be utilised towards the delivery of the footbridge, although the commensurate allocation of funding towards schemes set out in the Havant Borough Transport Statement would be decided by the local planning authority.
- 5.15 The implementation of the footbridge, funded partially or wholly by the S106 contributions derived from the proposed development site would bring the implementation date forward by several years from that indicated within the Havant Borough Transport Statement. This would not only provide improved pedestrian/cyclist infrastructure for the future residents of the development but would also provide benefit to existing local residents.
- 5.16 The footbridge will improve safety at the level crossing by providing both pedestrians and cyclists a safe crossing and the ability to cross the railway line when the level crossing is closed. This will also allow the level crossing to be operated more efficiently. Through discussions with Network Rail and the two Councils and after undertaking on-site observations it is apparent that pedestrians and cyclists are preventing the level crossing being closed as quickly as it could be by passing under the barrier as it closed. Additionally with the pedestrians and cyclists then mixing with the vehicular traffic when the barriers open it prevents vehicles from driving through the crossing when it re-opens, until the pedestrians and cyclists have dispersed.
- 5.17 A plan showing the latest engineering design layout of the bridge is contained within **Appendix G**. An illustrative layout plan of the appearance of the bridge is also presented within **Appendix G**.
- 5.18 At the time of writing this report, a planning application for the proposed footbridge is awaiting determination. The principle of implementing the footbridge having been agreed with Network Rail and the two Councils before the planning application for the bridge was submitted.

Cycling Links

- 5.19 The Department for Transport (DfT) in their Transport Statistics on Cycling in Great Britain state that the average length of a cycle journey is 3.84km (2.4 miles). PPG13 "A Guide to Better Practice" (2001) (which is now superseded but of which principles still apply) identifies that people are prepared to cycle up to 8km (5 miles).

- 5.20 The DfT's 'Cycle Infrastructure Design' (October 2008) states that *"in common with other modes, many utility cycle journeys are under three miles (4.8km), although, for commuter journeys, a trip distance of over five miles (7.2km) is not uncommon. Novice and occasional leisure cyclists will cycle longer distances where the cycle ride is the primary purpose of their journey... Experienced cyclists will often be prepared to cycle longer distances for whatever journey purpose"*. It is therefore considered that a distance of 4km represents a reasonable cycling distance and that 8km is a maximum realistic range for cycle trips.
- 5.21 Central Government research has shown that cycling has the potential to replace short car trips, particularly those under 5 kilometres. It also states that people are generally willing to cycle to work up to a distance of 5 kilometres.
- 5.22 **Figure 5.2** shows the cycle links to and from the site which shows that Havant Town Centre would be a convenient cycle trip and an attractive mode of transport for work, shopping and leisure trips. This figure also identifies that Havant Rail Station can be reached by cycle.
- 5.23 **Figure 5.3** shows the 5 kilometre catchment from the centre of the application site which illustrates that a large proportion of the urban area of Havant, Emsworth and Hayling Island is within 5km of the site.

Public Transport Improvements

- 5.24 The CIHT document '*Planning for Public Transport in Developments*' states that *"new developments should be located so that public transport trips involve a walking distance of less than 400m from the nearest bus stop"*.
- 5.25 **Figure 5.4** shows the bus routes within the vicinity of the site, indicating that there is presently one bus service past the site on Southleigh Road. This service (number 27) operates with a frequency of 20 minutes. At present, there are three sets of bus stops within 400 metres of the site, situated adjacent to Spindle Close, Hallett Road and 50 metres north of the junction with Fifth Avenue. The service provides a link between Rowland's Castle through to Southbourne via Havant Town Centre.
- 5.26 **Figure 5.5** provides an audit summary of the present condition of the bus infrastructure on Southleigh Road. The presence of residential frontages, crossovers, and residential side roads has influenced the location of bus stops on Southleigh Road. Each bus stop typically consists

of a bus pole and flag with a bus shelter provided where there is sufficient footway width to do so as the narrow footway and carriageway acts as a physical constraint to providing bus shelters.

- 5.27 The southbound (towards Havant) bus stop which is situated opposite the junction with Fourth Avenue consists of a bus stop post and flag, with a bench positioned within the grass verge, which is set back behind the footway. There is the potential to provide a bus shelter within the area of grass verge which is within the highway boundary, should Hampshire County Council wish to seek a contribution towards improving the existing public transport infrastructure.

Travel Plan

- 5.28 The Framework Residential Travel Plan's associated with the 191 dwellings to be provided within the site masterplan, set's out a strategy for managing multi-modal access to and from the site and promoting access by sustainable modes.
- 5.29 A Residential Travel Plan would need to be prepared to encourage travel by sustainable modes. The primary objective of the Travel Plan will be to set out a long term strategy to facilitate and encourage modes of travel by means other than the private car, which reflects current central and local government policy. The Framework Residential Travel Plan is contained within **Appendix H**.
- 5.30 The strategy needs to be long term as changing travel habits takes time and will only occur through a combination of incentives, improved facilities, government initiatives and changes in individual attitudes.
- 5.31 The initiatives and measures are a mixture of 'hard' and 'soft' measures. The hard measures include the provision of facilities such as safe and secure cycle parking. The 'soft' measures include initiatives such as providing information on public transport services, walking and cycling connections. This can be achieved through the provision of this information as part of the "Welcome Pack" given to new residents.
- 5.32 The Travel Plan would be finalised and agreed prior to the occupation of the proposed development.

- 5.33 The land is accessible by non-car modes of transport for potential residents and would be fully integrated into the town. Furthermore, the production and implementation of a Travel Plan will ensure that future residents are aware of their travel options, and encouraged to choose the sustainable travel modes.

Conclusion

- 5.34 Overall, the site is well located by means of public transport, being close to Warblington station with a local bus service operating along Southleigh Road.
- 5.35 The site is within 1.5km of Havant Rail Station and Town Centre and there is the potential for a large proportion of trips associated with the development to be made by public transport, cycling or walking, particularly following the implementation of the pedestrian footbridge and shared footpath/cycle path to the north of the Warblington School which will serve to provide a direct route, segregated from vehicular traffic between the site and Havant Town Centre.

6 TRIP GENERATION & DISTRIBUTION

Traffic Generation

- 6.1 The development proposals consist of 100 residential units on the Copseys Nursery site and 91 residential units on the Manor Farm site. In determining the existing and anticipated level of vehicle traffic generated by the site, two approaches have been adopted.

Surveyed Traffic Movements

- 6.2 The first methodology examines the traffic turning count surveys undertaken at each of the four junctions with Southleigh Road. This allows the calculation of a trip rate per dwelling based upon a fixed existing number of dwellings which utilise the specific roads to gain access onto Southleigh Road and the wider highway network.
- 6.3 Hallett Road and Glenleigh Park are cul-de sacs and provide the only access point for dwellings located upon them. Spindle Close and Fifth Avenue offer two access points for the dwellings located on Blenheim Gardens, Bladon Close, Chartwell Drive, Spindle Close and Fifth Avenue. The total number of dwellings which utilise the respective roads for access is as follows:
- Glenleigh Park = 40 dwellings;
 - Hallett Road = 25 dwellings; and
 - Spindle Close & Fifth Avenue serve a total of 146 dwellings.
- 6.4 The traffic survey analysis presented in **Appendix I** provides an AM & PM Peak trip rate based upon the recorded vehicle movements averaged over a 2/3 day period. A distribution proportion via each of the accesses is also presented.
- 6.5 **Table 6.1** provides a summary of the AM and PM Peak trip rates based on each of the access points and as a collective trip rate for comparison.

Table 6.1 – Existing Vehicle Trip Generation based on Traffic Count Surveys

	Two-way Trip Rates			
	Glenleigh Road	Hallett Road	Fifth Avenue/Spindle Close	Total Combined Average
AM Peak	0.5	0.48	0.53	0.521
PM Peak	0.425	0.56	0.63	0.581

6.6 The survey flows demonstrate a trip rate of just over 0.5 trips per unit based upon 211 existing dwellings that currently gain access from Fifth Avenue, Spindle Close, Hallett Road and Glenleigh Park.

6.7 The traffic survey analysis also identifies the assignment of traffic from each of the junctions with Southleigh Road with a cumulative traffic assignment proportion of 54.6% assigning north and 45.4% assigning south.

TRICS Assessment

6.8 The second methodology in estimating the traffic generation of the proposed residential units is through the application of the nationally approved TRICS database, with comparable sites selected in terms of location, public transport services and housing types. Based upon the 191 residential dwellings, the trip rates derived from TRICS are summarised in **Table 6.2**.

Table 6.2 –Proposed Site Trip Generation based on TRICS 2012b Survey Data

	Arrivals		Departures		Totals	
Time Range	Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips
07:00-08:00	0.089	17	0.321	61	0.41	78
08:00-09:00	0.152	29	0.445	85	0.597	114
09:00-10:00	0.171	33	0.238	45	0.409	78
10:00-11:00	0.151	29	0.206	39	0.357	68
11:00-12:00	0.198	38	0.177	34	0.375	72
12:00-13:00	0.204	39	0.193	37	0.397	76
13:00-14:00	0.182	35	0.186	36	0.368	70
14:00-15:00	0.19	36	0.188	36	0.378	72
15:00-16:00	0.344	66	0.236	45	0.58	111
16:00-17:00	0.346	66	0.214	41	0.56	107
17:00-18:00	0.403	77	0.228	44	0.631	121
18:00-19:00	0.31	59	0.232	44	0.542	104
Daily Trip Rates:	2.74	523	2.864	547	5.604	1070

- 6.9 The database indicates that there will be **114** vehicle movements during the morning peak hour (0800-0900) made up from **29** arrivals and **85** departures, and **121** vehicle movements during the evening peak hour (1700-1800) made up from **77** arrivals and **44** departures. The TRICS data is contained within **Appendix J**.

Summary

- 6.10 Traffic surveys undertaken at the Spindle Close and Fifth Avenue junction with Southleigh Road indicate that the traffic movements per household assumed from the TRICS assessment are higher than that of existing housing in the area. As a consequence, the trip rates applied are likely to be at the upper end of actual traffic generation and are robust.

Traffic Distribution

- 6.11 It is projected that traffic associated with the Copseys Nursery Site will arrive and depart via either Spindle Close or Fifth Avenue, whilst traffic associated with the Manor Farm site will arrive and depart via Glenleigh Park and Hallett Road.
- 6.12 To determine where future residents on the site would travel to, information has been used from the national census data website (nomis) to determine where existing residents in the area travel to. This data is contained within **Appendix K**.
- 6.13 The AA journey planner has subsequently been used to identify the routes that residents would take. A review of census workplace destinations for those travelling by car is presented in **Table 6.3**.

Table 6.3 – Existing Journey to work destination analysis – St. Faiths ward origin

Area of Workplace	Car Driver (All People) Numbers	Car Driver (All People) %
Arun	24	1%
Chichester	232	10%
East Hampshire	103	4%
Eastleigh	42	2%
Fareham	99	4%
Gosport	27	1%
Havant	860	38%
Portsmouth	682	30%
Southampton	42	2%
Winchester	80	3%

Other East	130	5%
Total	2,321	100%

- 6.14 **Table 6.3** indicates the main work destinations for existing residents in St. Faiths. Based upon this distribution, development trips have been assigned via the local highway network and the A27, as presented within **Appendix K**.
- 6.15 The routes drivers take are not usually the shortest distance, but the shortest journey times. Due to the queues and delays at the level crossing on Southleigh Road, the existing proportion of traffic assigning south is 45.4%.
- 6.16 The cumulative existing north (54.6%) /south (45.4%) distribution of traffic has been applied in assessing the impact of the development on the local highway network. Journey time surveys provide further evidence in terms of influencing driver decision making in relation to the crossing.

Journey Time Surveys

- 6.17 The morning survey focused on journey times to Havant town centre and the A27. Whilst the evening peak focused on journey times from the town centre and A27. **Figure 6.1** identifies the potential route alignment selections available, whilst **Tables 6.4 & 6.5** indicates the journey times taken to travel via the four route alignment options.

Table 6.4: Morning Peak Hour Journey Times

Northbound To Town	Southbound To Town	Northbound To A27	Southbound To A27
6 mins 55 secs	6 mins 35 secs	7 mins 5 secs	3 mins 57 secs
9 mins 35 secs* (broken down car delayed journey)	2 mins 55 secs	6 mins 5 secs	-

Table 6.5: Evening Peak Hour Journey Times

Northbound From Town	Southbound From Town	Northbound From A27	Southbound From A27
7 mins 15 secs	3 mins 20 secs	6 mins 45 secs	6 mins 25 secs
-	6 mins 40 secs	-	3 mins 35 secs
Northbound To Town	Southbound To Town	Northbound To A27	Southbound To A27
7 mins 25 secs	5 mins 25 secs	-	6 mins 50 secs
7 mins 39 secs	-	-	-

- 6.18 The journey time results presented in **Tables 6.4** and **6.5**, demonstrate that when the barriers at the level crossing are in operation, the subsequent delay determines that the journey times from the site to either Havant Town Centre or the A27 junction are comparable whether you travel south (via the level crossing) or the longer (by distance), albeit more reliable route via the north of Southleigh Road.
- 6.19 **Table 6.6** below demonstrates the percentage increases in traffic flow projected in both a northbound and southbound direction. It can be seen that these projections only envisage a 6.5%-11.6% increase in traffic flow during peak hours. It should be noted that this impact will be even less at other times of the day.

Table 6.6 – Impact of Development Traffic on Level Crossing Queuing

Period	Northbound			Southbound		
	Existing	Dev. Traffic	% Increase	Existing	Dev. Traffic	% Increase
AM Peak	200	13	6.5%	376	38	10.1%
PM Peak	302	35	11.6%	219	20	9.1%

- 6.20 In order to further encourage future residents to travel north, rather than passing over the level crossing, information will be provided in the “Welcome Pack” for their new home on local bus services and driving routes to key destinations.

7 HIGHWAY IMPACT

7.1 A number of traffic surveys have been undertaken to include turning count survey information at the following junctions and during the following dates:

- Southleigh Road Level Crossing – 12th May 2011, and 11th-15th June 2012
- Southleigh Road/Spindle Road -12th May 2011, 11th – 15th June 2012, 16th-18th July 2012;
- Southleigh Road/Fifth Avenue - 12th May 2011, 9th May 2012, 11th – 15th June 2012, 16th-18th July 2012;
- Southleigh Road/First Avenue/Hallett Road - 9th - 10th May 2012, 9th May 2012, 11th – 15th June 2012;
- Southleigh Road/Emsworth Road -12th May 2011; and
- Southleigh Road/Glenleigh Park - 12th May 2011, 11th – 15th June 2012.

7.2 Following the Development Consultation Forums and public exhibition, the survey results were uploaded onto YouTube to allow local residents to view snapshots of the video surveys.

7.3 The impact of traffic associated with the proposed housing at the level crossing is considered first in this section followed by junction assessments at the following locations that have been agreed following discussions with Hampshire County Council:

- Southleigh Road/Spindle Road;
- Southleigh Road/Fifth Avenue; and
- Southleigh Road/Emsworth Road.

7.4 From discussions with Hampshire County Council Highways, a commentary of the anticipated development impact at the following junctions has also been undertaken:

- Southleigh Road/Horndean Road;
- Southleigh Road/Eastleigh Road; and
- Impact upon the A27 junction with A259.

7.5 The time periods for assessment have been identified as:-

- AM weekday peak hour (0800 - 0900)
- PM weekday peak hour (1700 - 1800)

7.6 These time periods were chosen as being the busiest combined periods of traffic on the existing network and where the volume of traffic associated with the development will be greatest.

7.7 In order to assess the impact of development, three scenarios have been undertaken for each peak period:

- 2012 Base;
- 2017 Base & TEMPRO growth; and
- 2017 factored flows & development flows

7.8 TEMPRO growth factors were applied to account for background growth between 2012 and 2017 in line with GTA guidance which states that, *“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”*. The future year assessment year has been agreed with Hampshire County Council.

7.9 The TEMPRO growth factors are contained within Appendix K and are as follows:

- Weekday AM Peak - 1.0423
- Weekday PM Peak - 1.0445

Development Traffic Impact upon Level Crossing

7.10 The assignment of development traffic based on the existing distribution is presented in **Table 7.1**.

Table 7.1 – North/South Assignment of Development Traffic

	AM Peak		PM Peak	
	Arrivals	Departures	Arrivals	Departures
Total Traffic	29	85	77	44
45.4% Southbound Assigned Traffic	13	38	35	20
54.6% Northbound Assigned Traffic	16	47	42	24

7.11 The impact of the development in terms of additional queuing along Southleigh Road when the level crossing barriers have been brought down is detailed within **Appendix A**. This has

been calculated using the assumption of a standard rate of arrivals/departures to the new housing during each hour.

- 7.12 The mean average period for the level crossing to be activated is 3 minutes 34 seconds and 2 minutes 38 seconds during the AM (7am-10am) and PM (3pm-7pm) periods respectively. The maximum period for the level crossing to be activated is 6 minutes 52 seconds and 7 minutes 39 seconds during the AM (7am-10am) and PM (3pm-7pm) periods respectively. **Table 7.2** summarises the effect that development site traffic would have on the vehicle queue lengths at the level crossing.

Table 7.2 – Impact of Development Traffic on Level Crossing Queuing

	Average Time Level Crossing Activated		Maximum Time Level Crossing Activated	
	Additional Queuing Vehicles		Additional Queuing Vehicles	
	Northbound	Southbound	Northbound	Southbound
AM Peak	1	2	2	4
PM Peak	2	1	4	3

- 7.13 The results of **Table 7.2** demonstrate that the maximum increase in existing queuing at the level crossing would be **4** vehicles during the peak hour period assuming the crossing is activated for **7 minutes 39 seconds**. During more typical periods, an additional 2 vehicles would be added to the back of the observed surveyed level crossing queues.

Detailed Junction Assessments

Southleigh Road/Spindle Road

- 7.14 This priority junction forms the most northerly access to the proposed development. **Table 7.3** provides a summary of the operation of the existing junction using 2012 base traffic flows. **Tables 7.4 & 7.5** assesses the 2017 with and without development scenarios.

Table 7.3: 2012 AM & PM Peak Operation

	2012 AM Peak (08:00-09:00)		2012 PM Peak (17:00-18:00)	
	RFC (%)	Queue	RFC (%)	Queue
Spindle Close left out	0.024	0.02	0.005	0
Spindle Close right out	0.064	0.07	0.041	0.04
Southleigh Rd Right Turn	0.005	0.01	0.031	0.03

7.15 The results demonstrate that the junction operates currently well within capacity.

Table 7.4: 2017 AM Peak Operation - With and Without Development Scenarios

	Without Development (08:00-09:00)		With Development (08:00-09:00)	
AM Peak	RFC (%)	Queue	RFC (%)	Queue
Spindle Close left out	0.026	0.03	0.041	0.04
Spindle Close right out	0.068	0.07	0.097	0.11
Southleigh Rd Right Turn	0.005	0.01	0.011	0.01

Table 7.5: 2017 PM Peak Operation - With and Without Development Scenarios

	Without Development (08:00-09:00)		With Development (08:00-09:00)	
AM Peak	RFC (%)	Queue	RFC (%)	Queue
Spindle Close left out	0.005	0	0.013	0.01
Spindle Close right out	0.044	0.05	0.062	0.07
Southleigh Rd Right Turn	0.033	0.03	0.049	0.05

7.16 **Tables 7.4 and 5** above illustrates that the junction will operate within capacity with development flows added with a queue of less than 1 vehicle on all approaches in all scenarios.

7.17 This assessment will be undertaken at the proposed site access and the junctions around the site as agreed with Havant BC and Hampshire CC.

Southleigh Road/Fifth Avenue

7.18 This priority junction forms the most northerly access to the proposed development. **Table 7.6** provides a summary of the operation of the existing junction using 2012 base traffic flows. **Tables 7.7 & 7.8** assesses the 2017 with and without development scenarios.

Table 7.6: 2012 AM & PM Peak Operation

	2012 AM Peak (08:00-09:00)		2012 PM Peak (17:00-18:00)	
	RFC (%)	Queue	RFC (%)	Queue
Fifth Ave Left Out	0.034	0.04	0.032	0.03
Fifth Ave Right Out	0.024	0.02	0.017	0.02
Southleigh Rd Right Turn	0.018	0.02	0.032	0.03

7.19 The results demonstrate that the junction operates currently well within capacity.

Table 7.7: 2017 AM Peak Operation - With and Without Development Scenarios

	Without Development (08:00-09:00)		With Development (08:00-09:00)	
AM Peak	RFC (%)	Queue	RFC (%)	Queue
Fifth Ave Left Out	0.034	0.04	0.05	0.05
Fifth Ave Right Out	0.024	0.02	0.345	0.52
Southleigh Rd Right Turn	0.018	0.02	0.026	0.03

Table 7.8: 2017 PM Peak Operation - With and Without Development Scenarios

	Without Development (17:00-18:00)		With Development (17:00-18:00)	
PM Peak	RFC (%)	Queue	RFC (%)	Queue
Fifth Ave Left Out	0.032	0.03	0.033	0.03
Fifth Ave Right Out	0.017	0.02	0.035	0.04
Southleigh Rd Right Turn	0.034	0.04	0.05	0.05

7.20 **Table 7.7 & 7.8** above illustrates that the junction will operate well within capacity with development flows added, with a queue of less than 1 vehicle on Fifth Avenue during the AM Peak.

7.21 The analysis does not fully take into account the impact of vehicles queuing back from the level crossing (when activated) onto Southleigh Road; however, the provision of “KEEP CLEAR” markings will ensure the satisfactory operation of these junctions.

Southleigh Road/Emsworth Road/Pook Lane

7.22 Signal timing data was obtained from Hampshire County Council at this signalised staggered four arm junction. From discussions with Hampshire County Council Highways, it is apparent that the junction is operated under MOVA.

7.23 It has been reported by Hampshire County Council that the junction underwent remedial safety measures in July 2004 consisting of anti-skid surfacing and lining. Additional traffic signal works were also reported to have been carried out in September 2004 which led to a 50% reduction in the accident rate.

- 7.24 In relation to the operation of the signalised junction in highway capacity terms **Table 7.9** provides a summary of the junction capacity analysis for the AM Peak base and future year scenarios.

Table 7.9 – AM Peak LINSIG Junction Analysis – Southleigh Road/Emsworth Road/Pook Lane

	2012 AM Peak		2017 AM Peak		2017 AM Peak & Development	
Link	Degree of Sat (%)	Mean Max Queue	Degree of Sat (%)	Mean Max Queue	Degree of Sat (%)	Mean Max Queue
Emsworth Rd (W) L/R/A	73.8	10	76.6	10	81.3	11
Southleigh Rd L/R/A	71.5	5	74.4	6	80.7	7
Emsworth Rd (E) A/ L/R	62.5	8	65	8	67.6	9
Pook Lane L/A/R	37.5	2	38.9	2	38.9	2
Southleigh Rd A/R	3.6	0	3.6	0	3.6	0
Practical Reserve Capacity	22%		17.5%		10.8%	

*L – Left, R – Right, A - Ahead

- 7.25 A review of observed vehicle queue lengths (see **Appendix L**) indicates maximum queue lengths of 14/15 PCU at the junction during the AM Peak which demonstrates that the modelling validates reasonably well in relation to observed conditions. The junction operates under MOVA with the signal timings varying throughout the day in response to fluctuating traffic movement demands. The junction has been modelled under a 90 second cycle time to minimise pedestrian delay.
- 7.26 **Table 7.9** indicates that the junction operates with a maximum degree of saturation of 81.3% in the 2017 base & development scenario, demonstrating that there is reserve capacity at the junction allowing for additional traffic growth to be accommodated within the highway network.

Table 7.10 – PM Peak LINSIG Junction Analysis – Southleigh Road/Emsworth Road/Pook Lane

	2012 PM Peak		2017 PM Peak		2017 PM Peak & Development	
Link	Degree of Sat (%)	Mean Max Queue	Degree of Sat (%)	Mean Max Queue	Degree of Sat (%)	Mean Max Queue
Emsworth Rd (W) L/R/A	74.2	11	77.5	12	80	12
Southleigh Rd L/R/A	71.3	5	74.4	6	80.3	6
Emsworth Rd (E) A/ L/R	59.7	6.	64.8	7	73.9	7
Pook Lane L/A/R	14.4	1	15	1	15	1
Southleigh Rd A/R	4.9	0	5.1	0	5.1	0
Practical Reserve Capacity	21.2%		16.2%		12.1%	

*L – Left, R – Right, A – Ahead

7.27 In the PM Peak scenarios shown within **Table 7.10**, the junction also operates well within design capacity with a degree of saturation below 90% on all links in all scenarios and a practical reserve capacity of 12.1%.

7.28 There is no significant impact associated with traffic from the proposed housing on the operation of this junction during either peak period.

Impact of Level Crossing

7.29 Whilst the junction modelling indicates that the signalised junction can accommodate additional development traffic without requiring highway capacity improvements to the junction, it is acknowledged that when the level crossing is activated for long periods (>5 minutes), queuing traffic can build back towards the junction of Southleigh Road/Emsworth Road, preventing the free flow of traffic from Emsworth Road onto Southleigh Road.

7.30 Whilst this is an existing issue and is quickly resolved once the level crossing barriers are raised, a review has been undertaken of the phasing and staging sequence at the junction and has remodelled the flows following changes to the allocation of traffic flows within the Southleigh Road exit link. This link consists of two lanes; the nearside lane allows left turns

onto Emsworth Road East and straight ahead movements onto Pook Lane. The right hand off-side lane allows right turns onto Emsworth Road West only.

- 7.31 An assessment has been undertaken of the implications on highway capacity of re-allocating the traffic to allow the nearside lane to allow left turning traffic only to run as a left filter within the same stage as traffic entering the junction from Emsworth Road East. The right hand off-side lane would permit both straight ahead and right turning movements.
- 7.32 Drawing **110029-AT-17** contained within **Appendix F** demonstrates how a pantechnicon (large furniture delivery van) can negotiate the off-set straight ahead manoeuvre into Pook Lane whilst traffic is simultaneously turning left onto Emsworth Road East.
- 7.33 The results of the LINSIG modelling which assess this alternative staging layout is summarised within **Tables 7.11 and 7.12**.

Table 7.11 – AM Peak LINSIG Junction Analysis – Southleigh Road/Emsworth Road/Pook Lane

	2012 AM Peak		2017 AM Peak		2017 AM Peak & Development	
Link	Degree of Sat (%)	Mean Max Queue	Degree of Sat (%)	Mean Max Queue	Degree of Sat (%)	Mean Max Queue
Emsworth Rd (W) L/R/A	73.8	10	76.6	10	81.3	11
Southleigh Rd L/R/A	72.8	6	75.9	6	79.2	7
Emsworth Rd (E) A/ L/R	62.5	8	65	8	67.6	0
Pook Lane L/A/R	37.5	2	38.9	2	38.9	2
Southleigh Rd A/R	3.6	0	3.6	0	3.6	0
Practical Reserve Capacity	22%		17.5%		10.8%	

***L – Left, R – Right, A - Ahead**

- 7.34 The results indicate that as the traffic flows during the AM Peak from Southleigh Road are effectively 50% right and 50% left turning, the left turn filter does not act to provide any tangible additional benefit in highway capacity terms.

Table 7.12 – PM Peak LINSIG Junction Analysis – Southleigh Road/Emsworth Road/Pook Lane

	2012 PM Peak		2017 PM Peak		2017 PM Peak & Development	
Link	Degree of Sat (%)	Mean Max Queue	Degree of Sat (%)	Mean Max Queue	Degree of Sat (%)	Mean Max Queue
Emsworth Rd (W) L/R/A	62.3	10	65	10.	67.1	10
Southleigh Rd L/R/A	56.5	4	59	4	63.8	5
Emsworth Rd (E) A/ L/R	50.7	5	53.4	6	60.2	6
Pook Lane L/A/R	14.4	1	15	1	15	1
Southleigh Rd A/R	4.9	0	5.1	0	5.1	0
Practical Reserve Capacity	44.5%		38.5%		34.1%	

*L – Left, R – Right, A – Ahead

7.35 The results presented in **Table 7.12** clearly demonstrate that the addition of the left filter from Southleigh Road provides a tangible benefit in highway capacity terms. As approximately 65-70% of traffic entering the junction from Southleigh Road assigns via Emsworth Road East, the benefit of additional green time to this movement has a net benefit, ensuring that no link operates with a degree of saturation above 70%, and a practical reserve capacity in the 2017 with development scenario of 34.1%, a considerable improvement upon the PRC of 12.1% demonstrated for the existing phasing/staging sequence at the junction.

7.36 The provision of a left filter lane is not required to address the impact of traffic associated with the proposed housing scheme, but could be implemented using S106 agreement funding that will be sought in association with the proposed development.

Additional Junctions – Proportional Impact

Southleigh Road/Eastleigh Road

7.37 Traffic count data has been provided by Hampshire County Council at this junction for the AM and PM weekday peak periods. The surveys date from September 2009 and a review of existing survey data for the junction of Spindle Close with Southleigh Road indicates that the

flows have remained relatively unchanged over this period (see **Appendix L** for traffic flow data). As such these flows have been applied with the 2012-2017 TEMPRO growth factors applied. In assessing the relative impact of the development on this junction, a proportional impact assessment has been undertaken and is presented within **Table 7.13**.

Table 7.13 – AM & PM Peak Proportional Impact Analysis – Southleigh Road/Eastleigh Road

	AM Peak		PM Peak	
	Flows	Development Proportion (%)	Flows	Development Proportion (%)
Total 2017 Junction Flows	720		606	
Development Flows	51	7.1%	65	10.7%
2017 Turning flows only	387		304	
Development turning flows only	21	5%	23	7.6%

- 7.38 **Table 7.13** shows that in terms of total additional traffic at the junction, an increase of 65 two-way vehicle trips is recorded in the PM Peak, representing a 10.7% increase in relation to the 2017 base flows.
- 7.39 If only the additional turning traffic is compared to the 2017 base flows, the relative increase accounts for 23 two-way vehicle movements, representing a 7.6% increase.
- 7.40 The base level traffic flows at the junction are insufficient to create existing traffic congestion at this junction. The relatively small increase in traffic associated with the development will have a negligible impact upon the operation of the junction in capacity terms. One slight accident has been recorded at this location over the past 5 year period which is considered to constitute a low accident rate and would not require mitigation improvement measures to be implemented.

Southleigh Road/Horndean Road

- 7.41 Traffic count data has been provided by Hampshire County Council at this junction for the AM and PM weekday peak periods. The surveys date from September 2009 and provide all movements on Southleigh Road East & West and turning flows on Horndean Road.

- 7.42 Of the traffic flow data supplied by Hampshire County Council, the straight ahead (north and southbound) flows have been omitted. As the B2148 Horndean Road is the more major link within this priority crossroads junction, the removal of straight ahead traffic on this link is anticipated to under-estimate the total traffic flow at this junction considerably.
- 7.43 In terms of total additional traffic at the junction, **Table 7.14** an increase of 42 two-way vehicle trips is recorded in the PM Peak, representing a 6% increase in relation to the 2017 base flows.

Table 7.14 – AM & PM Peak Proportional Impact Analysis – Southleigh Road/Eastleigh Road

	AM Peak		PM Peak	
	Flows	Development Proportion (%)	Flows	Development Proportion (%)
Total 2009 Junction Flows	663		694	
Development Flows	40	6%	42	6%

- 7.44 If the straight ahead flows were applied to the total junction flows, this would further reduce the proportionate impact of the development traffic to less than 5%, which would have a negligible impact upon the junction and would not compromise the performance of the roundabout in capacity terms.

Impact upon A27/A259 Junction

- 7.45 TRADS data has been obtained from the Highways Agency for the A27 Eastbound and Westbound links adjacent to the junction with the A259 at Havant. The data is contained within **Appendix L**. The data applied is AAWT flow data from 2010. Peak hour flows have been assumed at 10% of the AAWT flows.
- 7.46 In the AM Peak, the total eastbound traffic is 6 vehicle movements, with 18 westbound vehicle movements added to the A27. **Table 7.15** provides a comparison of the existing peak hour traffic flows on the A27 in both directions in relation to the development traffic proportional impact.

Table 7.15 – AM & PM Peak Proportional Impact Analysis – Southleigh Road/Eastleigh Road

AM Peak			PM Peak		
TRADS Derived Flows	Development Flows	Development Proportion (%)	TRADS Derived Flows	Development Flows	Development Proportion (%)
Eastbound					
3328	6	0.2%	3328	17	0.51%
Westbound					
3258	18	0.55%	3258	10	0.3%

7.47 The results demonstrate that the proportional impact during the weekday AM and PM Peak hours will result in between a **0.2%** and **0.55%** impact upon the A27, and can therefore be considered to have a negligible impact upon the A27. This impact would be further reduced if a 2012 to 2017 growth factor were applied to the A27 TRADS flows.

8 OUTLINE CONSTRUCTION METHODOLOGY

- 8.1 It is acknowledged that the specific details relating to the phasing, quantity of materials, construction traffic movements, and timescales of the construction process will not be fully determined until the post-planning stage once a building contractor has been commissioned.
- 8.2 This chapter sets out the parameters for undertaking initial work to the site, through to the full construction and build out of all aspects of the site as shown within the site masterplan within **Appendix E**.
- 8.3 It is proposed that the existing glasshouse buildings within the site will be recycled and broken up in a controlled, environmentally sustainable manner.
- 8.4 In terms of the haul routes for construction traffic, it is anticipated that traffic will route from Southleigh Road via one of the four existing site access junctions. Until the contractor has been appointed, it is not known where the construction vehicles journeys will commence/terminate in order to determine specific haul routes. On appointment, a full Construction Management Plan will be implemented to determine appropriate haul routes.
- 8.5 The full Construction Management Plan will also set out the following which will be agreed with Havant Borough Council (HBC) and Hampshire County Council (HCC) prior to the commencement of construction at the site:
- Reasonable measures will be taken to ensure deliveries to the site are undertaken in a controlled manner to avoid vehicles waiting on adjoining roads;
 - The specific working hours, number of HGV movements and size of vehicles will be agreed with HBC and HCC prior to commencement;
 - Wheel washing facilities are to be provided close to the construction access to mitigate dust and debris being carried onto the adjoining highway network;
 - Roads and footpaths will also be swept daily to remove any spoil or debris being deposited on the highway;
 - The developer/contractor will take reasonable steps to minimise dust and noise in accordance with relevant British standards and best working practices;
 - The developer/contractor will subscribe to the “considerate contractors scheme” and adhere to the guidelines set out by the scheme; and

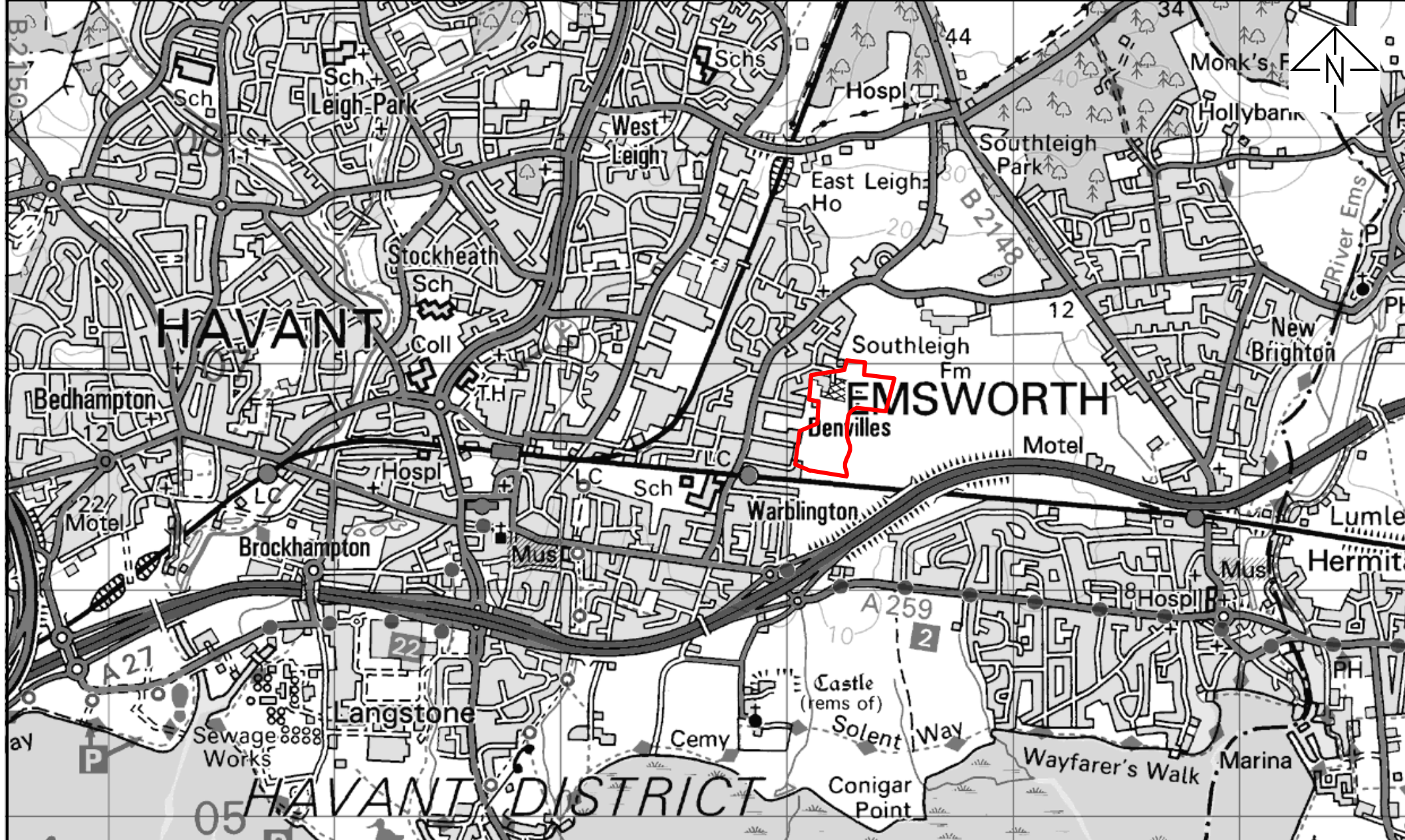
- The developer/contractor will provide and agree with the council prior to any demolition and site clearance, detailed plans showing the arrangements for the phasing of the development.

9 SUMMARY & CONCLUSION

- 9.1 Vectos is retained by Generator Group LLP and Barratts David Wilson Homes to provide traffic and transportation advice in relation to the proposed Residential development at the site known as the Copseys Nursery/Manor Farm site in Denvilles, Havant.
- 9.2 The site is located to the east of Southleigh Road, north of the A27 and is on the eastern side of Havant. It is approximately 1.5km to the north-east of the town centre. The site is currently accessed from a priority junction with Blenheim Gardens, a residential road that connects directly to Southleigh Road via Spindle Close to the north and to the south via Fifth Avenue. There is an existing agricultural access serving the Manor Farm site at the terminus of Hallett Road.
- 9.3 Whilst accidents have occurred along Southleigh Road, none have been recorded at the proposed site access junctions of Spindle Close, Hallett Road or Fifth Avenue as a result of turning vehicle traffic.
- 9.4 Southleigh Road is identified as a cycle network link and on-road cycle lane. The 27 bus route operates along Southleigh Road to the west of the site and provides a connection to the town centre.
- 9.5 The proposed development will constitute 191 residential units, consisting of a mix of 1, 2, 3, 4 and 5 bedroom units.
- 9.6 The existing access to the site via Blenheim Gardens will be used and will be designed in accordance with the guidance given in the DfT's Manual for Streets design guidance and Hampshire's Companion Guide.
- 9.7 In addition, three further accesses will be created to link the development via Hallett Road, Glenleigh Park and Fifth Avenue, forming a total of four access points allowing vehicular traffic to access the site via Southleigh Road.
- 9.8 The development will provide both vehicle parking and cycle parking which accords to Havant Borough Council and Hampshire County Council standards and will ensure that any future anticipated parking demand will be met.

- 9.9 It is projected that traffic associated with the Copseys Nursery Site will arrive and depart via either Spindle Close or Fifth Avenue, whilst traffic associated with the Manor Farm site will arrive and depart via Glenleigh Park and Hallett Road.
- 9.10 There is anticipated to be a 6.5%-11.6% increase in traffic flow during peak hours on Southleigh Road. It should be noted that this impact will be even less at other times of the day. The maximum increase in existing queuing at the level crossing would be **4** vehicles during the peak hour period assuming the crossing is activated for **7 minutes**. During more typical periods, an additional 2 vehicles would be added to the back of the observed surveyed level crossing queues.
- 9.11 The implementation of the proposed pedestrian footbridge at the level crossing, which is the subject of a separate submitted planning application, and the shared footpath/cycle path to the north of the Warblington School, will provide a direct route, segregated from vehicular traffic between the site and Havant Town Centre/rail station.
- 9.12 There is the potential for S106 highways and transport contributions associated with the proposed development to be utilised towards the delivery of the footbridge, although the commensurate allocation of funding towards schemes set out in the Havant Borough Transport Statement would be decided by the local planning authority.
- 9.13 Whilst the traffic modelling indicates that the existing junctions can accommodate the additional traffic generation associated with the development, a potential improvement to the Southleigh Road/Emsworth Road signalised junction in terms of lane allocation and stage timings has been assessed to demonstrate that benefits to highway operational capacity can be achieved if required. This could be funded using S106 highways and transport contributions if deemed appropriate.
- 9.14 Furthermore, the production and implementation of a Travel Plan will ensure that future residents are aware of their travel options, and encouraged to choose sustainable travel modes.
- 9.15 In summary, the proposed development complies with all local, regional and national policy and there is no reason on highway or transport grounds why this application should not be granted planning consent.

FIGURES



Key:



Site Location

Generator Group LLP & Barratt David Wilson
Homes

Copsey's Nursery

Site Location – Strategic Context



85 Tottenham Court Road, London W1T 4TQ
Tel: 020 7268 3020 Email: london@vectos.co.uk www.vectos.co.uk

DRAWN:

SO'D

CHECKED:

C.S

DATE:

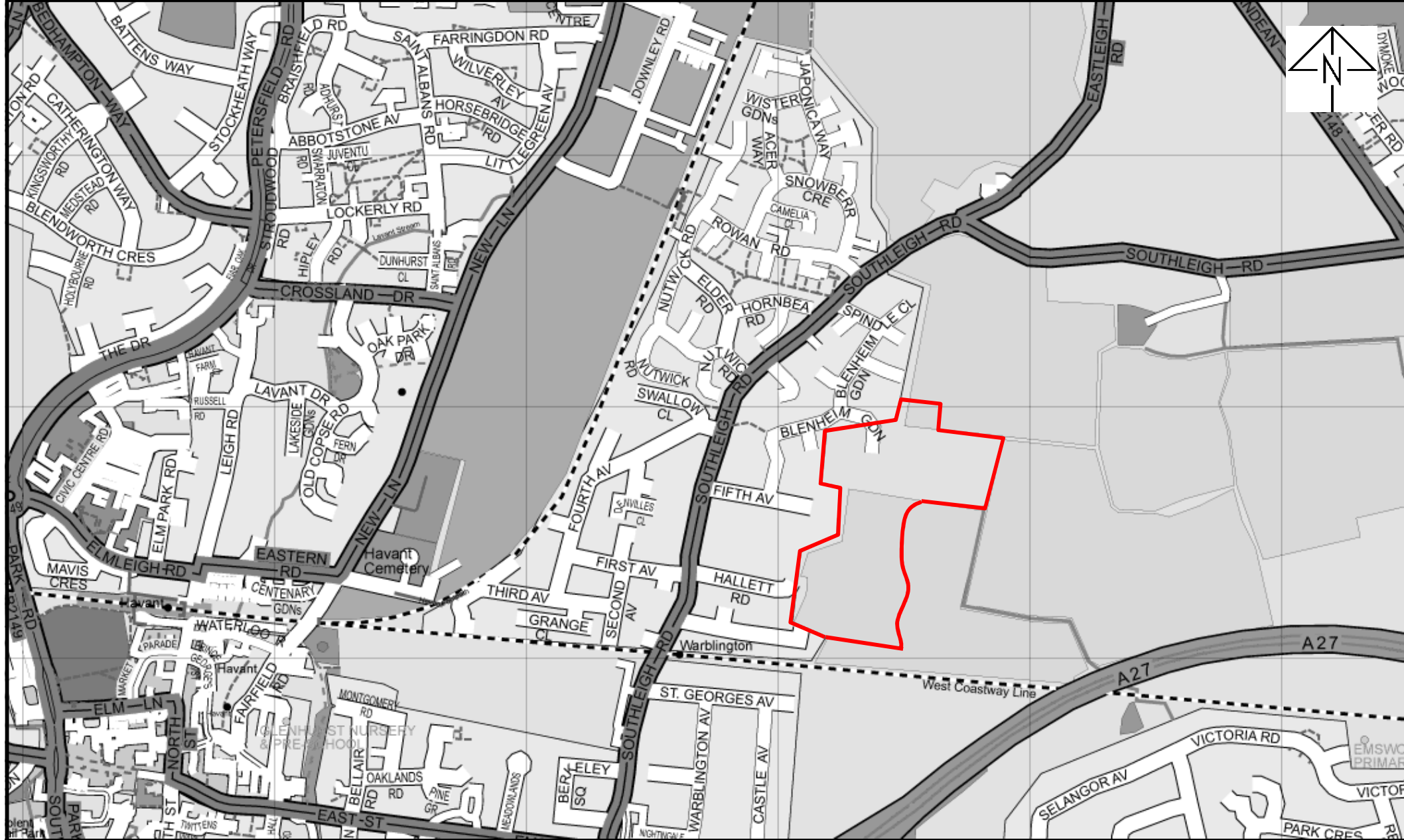
08/10/2012

SCALES:

NTS

DRAWING REFERENCE:

Figure 1



Key:



Site Location

Generator Group LLP & Barratt David
Wilson Homes

Copsey's Nursery

Site Location – Local Context



85 Tottenham Court Road, London W1T 4TQ
Tel: 020 7268 3020 Email: london@vectos.co.uk
www.vectos.co.uk

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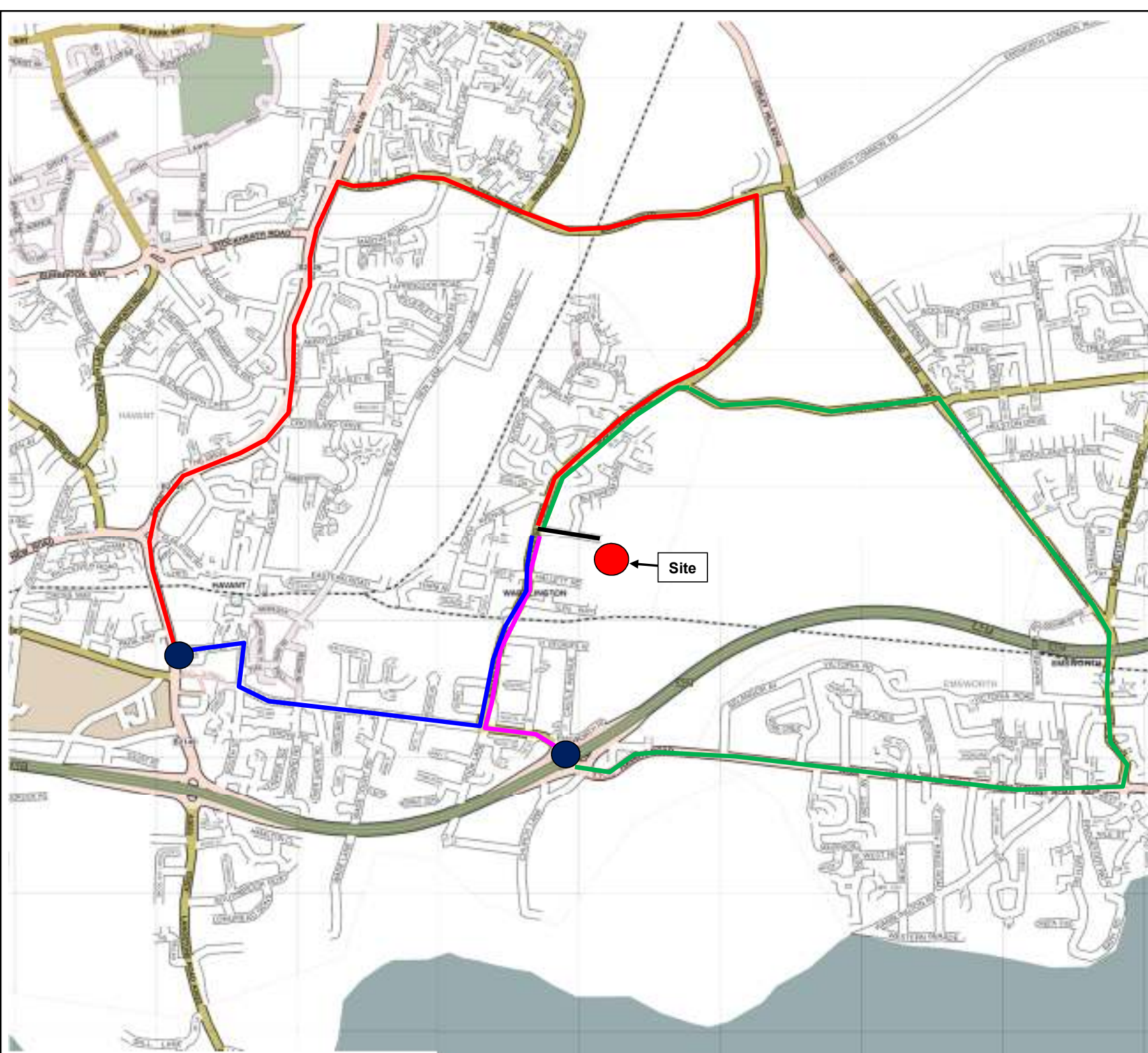
08/10/2012

SCALES:

NTS

DRAWING REFERENCE:

Figure 2



Key:

- Northbound to Havant Town Centre
- Northbound to A27
- Southbound to Havant Town Centre
- Southbound to A27

● Destination

Generator Group LLP &
Barratt David Wilson
Homes

Copseys Nursery

**Northbound/
Southbound
Route Options**

SCALE: NTS

DRAWN: DM	CHECKED: ID	DATE: 22/02/2012	REVISION: .
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85 Tottenham Court Road, London W1T 4TQ
Tel: 020 7268 3020 Email: london@vectos.co.uk www.vectos.co.uk

DRAWING REFERENCE:

Figure 3



Key:

- 1 Educational Facility
- 2 Supermarket
- 3 Bank
- 4 Hospital
- Rail Station
- 2 Km Walking Isochrone
- Site Location
- Existing Pedestrian Route
- Proposed Pedestrian Route

Generator Group LLP &
Barratt David Wilson Homes

Copseys Nursery

**2km Walk
Isochrone with
Local Facilities**

SCALES:

NTS

DRAWN:
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DATE:
09/10/2012

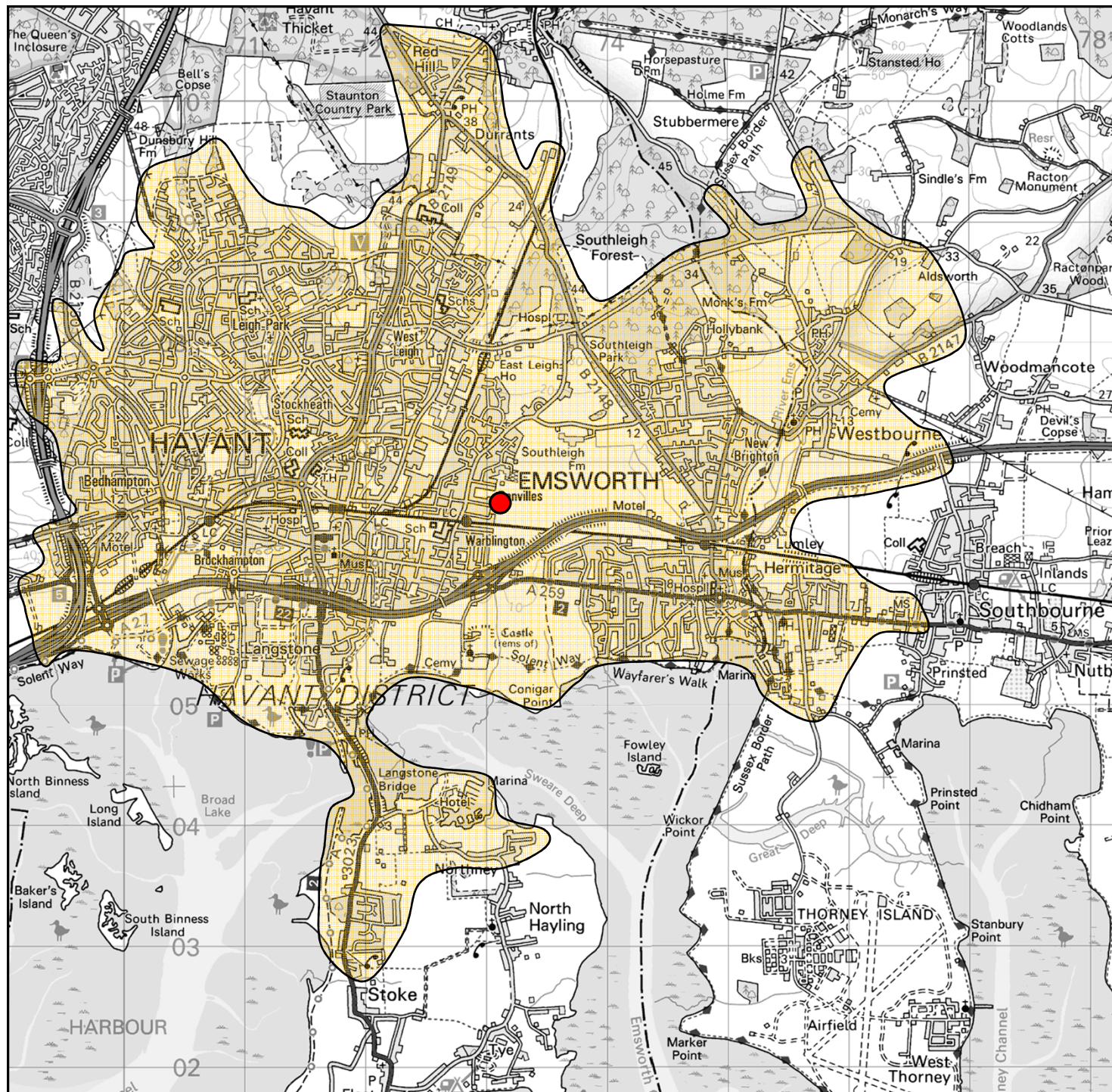
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Tel: 020 7268 3020 Email: london@vectos.co.uk www.vectos.co.uk

DRAWING REFERENCE:

Figure 5.1



Key:



Site Location



5Km Isochrone

Generator Group LLP &
Barratt David Wilson Homes

Copeys Nursery

**5Km Isochrone
Catchment**

SCALES:

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DRAWN:

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CHECKED:

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DATE:

11/10/2012

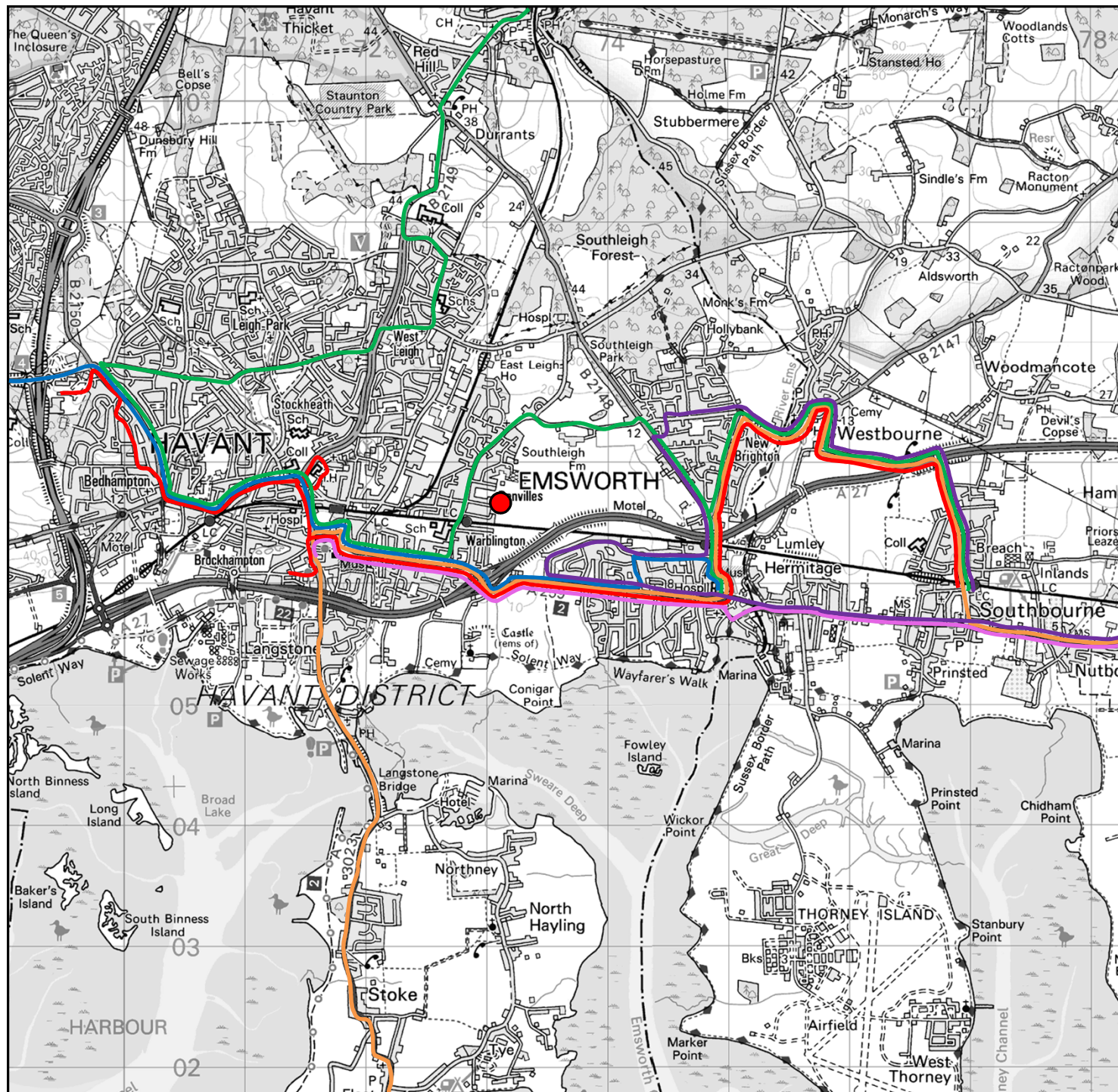
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DRAWING REFERENCE:

Figure 5.3



- Key:**
- Site Location
 - 27
 - 31A
 - 36
 - 145
 - 600/700
 - T9

Generator Group LLP &
Barratt David Wilson Homes

Copsey's Nursery

Local Bus Routes

SCALES:

NTS

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DATE:

15/10/2012

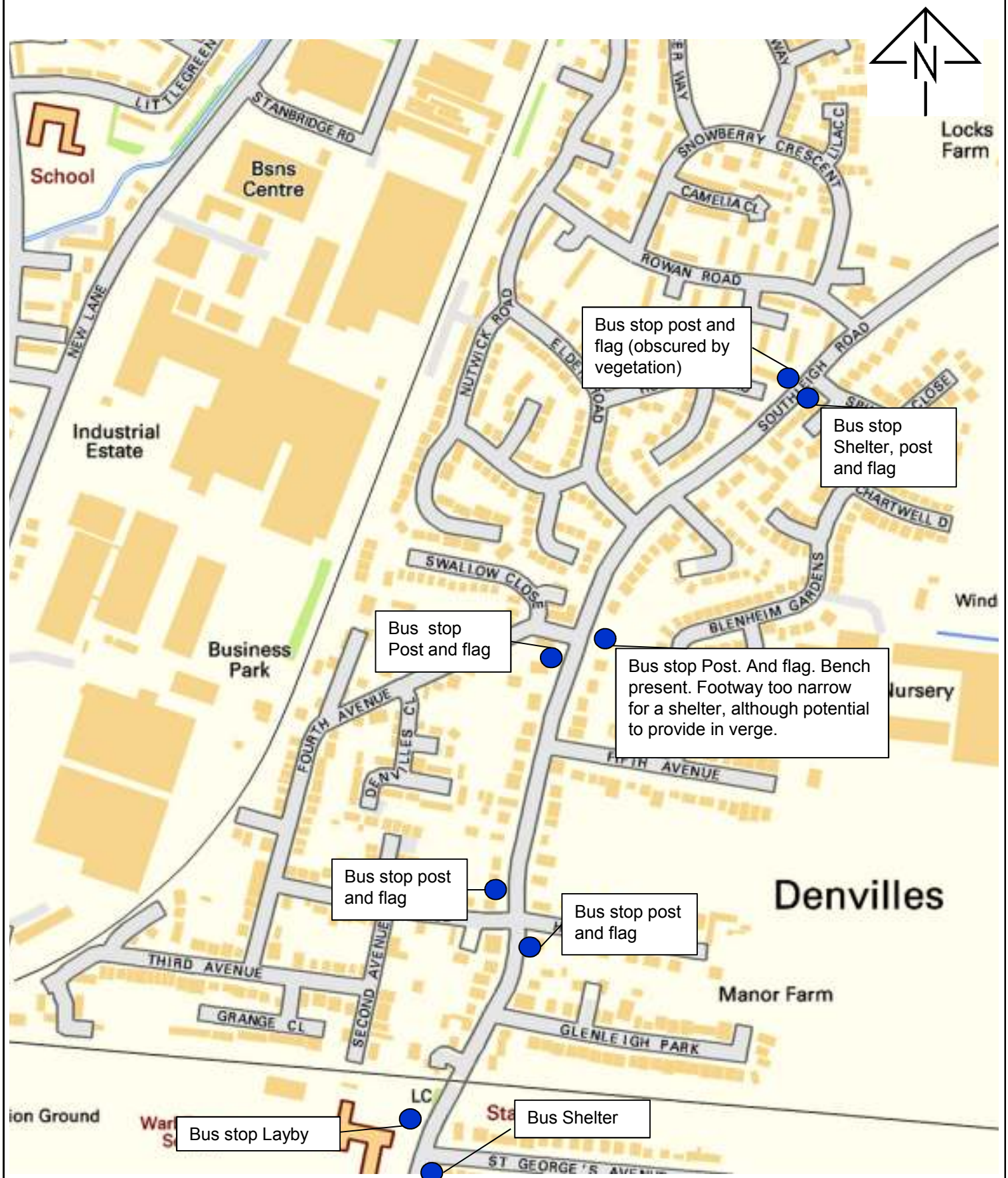
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Figure 5.4



Copsey's Nursery, Havant

Generator Group LLP & Barratt
David Wilson Homes

Southleigh Road – Bus Infrastructure Audit



Network Building, 97 Tottenham Court Road, London W1T 4TP
Tel: 020 7580 7373 Email: london@vectos.co.uk www.vectos.co.uk

DRAWN:

C.S

CHECKED:

C.S

DATE:

23/10/12

SCALES:

NTS

DRAWING REFERENCE:

Figure 5.5

REVISION: