12 Transportation and Accessibility

Introduction

12.1 This chapter deals with the transport aspects of the development. It draws on information contained in the Transport Assessment (TA) which is part of the planning application.

12.2 The Transport Assessment includes references to various background documents such as the Farnham Movement Package, the East Street Planning Brief, and also work commissioned by Farnham Town Council to undertake a study in the form of a sustainable town initiative within the principles of urban safety management. The implications of these background documents are explained in more detailed within the Transport Assessment.

Methodology

Baseline information

12.3 The baseline has been established through research into the background of Farnham contained within census information regarding transport within the town and through numerous site inspections within the town itself to establish the existing conditions. Particular areas of concern have been examined more closely, for example The Borough / Bear Lane / South Street / East Street junction. However, the occasional disruption caused to traffic by illegally parked vehicles, roadworks and incidents on the A31 have been treated as beyond the scope of this assessment.

12.4 The study area has been the roads surrounding the application site and any other links and junctions where the traffic effects have the potential to be significant. In practical terms this covers the town centre from the junction of West Street and Downing Street through to the junction of Hale Road and Guildford Road in the east and as far south as the junctions between Union Road and South Street and Longbridge/Firgrove. Beyond these points the effects of traffic are minimal and not considered of any material consequence.

12.5 Information on public transport has been obtained from local bus company timetables and from the South West Trains timetable. Cycling information has been gathered from information available from both Waverley Borough Council and Surrey County Council and for walking, information has been gathered from inspections on site as well as information contained within the Farnham Town Council commissioned TRL study. Personal Injury Accident data has been acquired from Surrey County Council.

12.6 Surveys were carried out in all the Farnham car parks during Friday 13 July and Saturday 7
July 2007. The surveys are considered to represent typical conditions.

12.7 The surveys were carried out over a 12 hour period from 8am to 8pm and recorded the number of spaces occupied at hourly intervals in each car park with the exception of East Street cinema car park, which was monitored by observing movements in and out of the access on East Street. Movements in and out of the South Street, Dogflud Way and Central car parks were also recorded at the respective access points.

12.8 The traffic flows at the junctions of East Street with Bear Lane/South Street/The Borough and Woolmead Road/Dogflud Way were recorded on 16 and 17 June 2006. Full turning movement counts were made from 0730 to 0930 and 1630 to 1830 on Friday 16 June and from 1000 to 1200 and 1500 to 1700 on Saturday 17 June 2006.

12.9 Further turning counts were taken from Surrey County Council's observed traffic movements as input to their Paramics model.

12.10 Discussions have been held over a number of months with Surrey County Council at both the strategic and local levels. Transport has been an ever-present topic for discussion at the various consultation events held during the development of the various schemes for the application proposals. More on the public consultation elements is set out in the Statement of Community Involvement attached to this planning application.

12.11 The modelling techniques have been based on the micro simulation program Paramics, as required by Surrey County Council, the Highway Authority.

Assessment of effects

12.12 The approach to the assessment of effects has been based on producing a traffic generation model for the application proposals for typical Friday and Saturday periods using a variety of approaches. The residential component of the site has been modelled using standard TRICS data for similar sites in town centre locations predominantly comprising of flats.

12.13 The retail element has been modelled by studying the existing traffic generation of all the short stay car parks in Farnham and calculating the traffic generation arising from the application proposals from the proportional relationship between the retail floor area of the application proposals and the total existing retail floor area within Farnham. This takes into account the current pattern of shopping trips in terms of mode of travel, frequency and linking of trips between all the various elements in the town centre. Although explained in more detail in the TA, this is seen to reasonably reflect the extent of the linked trips that will occur both within the retail elements of the application proposals and with the rest of the town centre in a way that a standard TRICS approach would not.
12.14 Finally the cinema proposal has been modelled taking into account the TRICS database information on other cinemas but reducing the trip rate in accordance with the research by TRICS into multi-use sites.

12.15 The total traffic generation assessed using this methodology has been input to the Paramics model in accordance with separate distributions of traffic for residential trips and for retail/leisure trips. A design year of 2012 has been agreed with the Highway Authority.

12.16 The locations studied in more detail have been subject to link flow increases as a percentage of existing link flows.

12.17 The assessment of effects on the highway network has been linked to the guidance on the environmental impact or road traffic set out by the Institute of Environmental Management and Assessment. More detailed investigations into noise and air quality have been undertaken in separate chapters of this Environmental Statement.

12.18 An assessment of the modal choice of trips to the site has been made based on the information in the 2001 census and contained within the TEMPRO database.

12.19 The assessment of construction and demolition effects has concentrated on the most intensive period of construction, the basement car park. This has been based on the quantities of excavation and imported concrete for the basement car park and on the construction programme as outlined elsewhere in this Environmental Statement. Further assumptions about the bulking of the excavated material and the capacity of the lorries carrying the material have been used. No assessment of junction capacities has been necessary as all the link flow increases are very low.

**Baseline conditions**

**Farnham**

12.20 Farnham is the largest town in Waverley Borough and contains 37,055 inhabitants as of the 2001 census. It lies at the cross roads of two main roads, the A325 which runs approximately south-west to north-east through the town and the A287 which runs approximately north-south through the town. There is a one-way system in operation in the centre of Farnham within a number of streets which have narrow footways but which nonetheless generally accommodate two lanes of traffic and have footways on both sides of the carriageway.

12.21 In addition to these two main roads the A31 dual carriageway Farnham bypass runs approximately south-west to north-east and lies to the south of the town centre between the
River Wey (north branch) and the railway. Most of the population of Farnham lives to the south of the A31, that is, on the opposite side of the A31 from the town centre.

12.22 Farnham is served by a range of public transport services including a network of local buses and a railway station on the commuter route to London and the south.

12.23 The Farnham traffic system has sufficient capacity to cope with most daily flows of traffic, but is sensitive to events such as the restriction of traffic lanes by way of road works or short term on-street parking by delivery vehicles, which cause disproportionate delays to all vehicles in Farnham. Accidents or severe congestion on the A31 also influence drivers route choice and can result in additional traffic through Farnham.

12.24 Further commentary on the traffic conditions in Farnham is given later in later sections.

Location and highway layout

12.25 The existing context of the site within the highway network is illustrated in Figure 12.1. It can be seen that the site is partially bounded to the north by properties fronting East Street and to the west by properties fronting South Street. The boundary of the site follows the line of Brightwells Road to the south and then the site boundary continues north-east to follow the River Wey, returning to the north along the western boundary of the existing leisure centre and Dogflud Way. The remainder of the eastern boundary is formed by the northern leg of Brightwells Road up to its junction with East Street.

12.26 Dogflud Way, East Street, Woolmead Road, South Street and The Borough all form part of the town centre one way system, comprising two lanes of traffic with footways on both sides of the carriageway. However the footways on The Borough are narrower than desirable for a town centre location with retail frontage.

12.27 The junction of The Borough, East Street, South Street and Bear Lane is a simple signalised junction which operates in a very similar fashion to two pelican crossings. If there is no pedestrian demand, the phases shown to traffic remain green. It is understood from data provided by Surrey County Council that the minimum cycle time is approximately 56 seconds.

12.28 The major movements at the junction of East Street, Woolmead Road and Dogflud Way are the left turns into East Street from the south via Dogflud Way and from the north via Woolmead Road. Right turns from Dogflud Way and Woolmead Road into East Street are possible and simply merge with the predominant left turning traffic flows.

12.29 Existing access points into the development site are from Dogflud Way into the existing Dogflud car park and from South Street via Brightwells Road into the South Street car park. The southern section of Brightwells Road also provides frontage access to Faulkner Court. Records of the extent of highway maintained at public expense have been obtained from...
Surrey County Council and show that Brightwells Road is adopted for approximately 70m from its junction with East Street and approximately 50m from its junction with South Street.

12.30 There are various features of the existing road network that influence the free flow of traffic. Some of the more significant ones are set out below.

12.31 Issues of congestion occur at the East Street / The Borough / South Street / Bear Lane junction owing to the need for vehicles to merge and weave once in South Street in order to achieve the desired lane before reaching the bifurcation of South Street at Union Road. At this point, South Street continues south towards the A31 Hickleys Corner Junction and Union Road continues to the west towards the junction with the A287 Longbridge and the continuation of the one-way system along Downing Street. North of that point on South Street lies the traffic signal junction of Victoria Road with South Street, at which point pedestrians may cross South Street while traffic exits Victoria Road. Vehicles currently use Victoria Road to access the South Street car park by undertaking a jinking manoeuvre whilst south-bound vehicles on South Street have stopped.

12.32 The Borough itself is wide enough for two lanes of traffic to form. However, this is disrupted by delivery vehicles that park to unload, sometimes before the time they are allowed to after 10am. Further west along The Borough, the A287 Castle Street joins from the North at a priority junction and Downing Street joins from the south carrying the north-bound A287 and A325 traffic. Between these two junctions lies a pelican crossing over The Borough.

12.33 The northern end of Downing Street narrows and is not quite wide enough for two full lanes of traffic to form so there is an element of congestion related to the weaving of drivers in advance of the narrower section.

12.34 The link from the residential areas to the south of Farnham is primarily via the A287 Firgrove Hill which has a bridge over the A31 directly into the town centre. It joins the one-way system at a priority junction with Union Road. A further route into the town from the south is via the B3001 Waverley Lane however the B3001 is crossed by the railway line at a level crossing in the vicinity of Farnham Station, approximately 150m from the junction with the A31. This level crossing causes congestion owing to the tailbacks of traffic caused by the closure of the gates.

Public transport – bus

12.35 The main bus operator in Farnham is Stagecoach, although there are other minor operators with more ad hoc services, including a Demand Responsive Transport Service. Appendix 12.1 and Table 12.1 show the locations of bus stops and services stopping at them respectively. Of particular interest are the stops F, G, J and K which are most closely associated with the application site. However, as can be seen, stops for all services within Farnham town centre north of the River Wey are located within 400m walk of the site and...
therefore within easy walking distance as set out in the reference document “Planning for Public Transport in Developments” of the Institution of Highways and Transportation (March 1999).

12.36 Bus stops F, G, J and K serve routes to a large number of destinations local to Farnham, further afield such as Aldershot, Haselmere and Weybourne and more distant destinations such as Winchester and Portsmouth. The maximum number of bus services per hour to all destinations combined is approximately 12 in each direction, that is, 24 in both directions.

12.37 Furthermore, looking at all bus services with a stop within 400m walk of the site as shown in Table 12.2, it can be seen that approximately 28 services per hour are available on weekdays during the periods of maximum demand and only slightly less during the off peak periods. On Saturdays approximately 29 services per hour are available. On Sundays the service is reduced to 1 every 2 hours on the service 4/5 and 18. At present none of the other services run on Sundays.

12.38 The stops on East Street are provided with shelters, as are those in Woolmead Road and on South Street. The stops on Woolmead Road in the easterly direction are provided with a bus bay. The pedestrian route from Woolmead Road bus stops to East Street is either via Woolmead Road and the junction with East Street and Dogflud Way or through the Woolmead Centre by way of a subway under the development. None of the bus stops in Farnham have provision for real time information display systems. There are no current proposals to incorporate such systems into the existing bus stops as there is no such service within this part of Surrey at present.

12.39 It can be noted that during June 2004, the Blackwater Valley Area Quality Bus Partnership was launched. This involves local authorities and the three major national bus companies – Arriva, First and Stagecoach – with the common aim of improving public transport throughout the Blackwater Valley area, including Farnham. A fundamental objective of the Quality Bus Partnership work is to develop a high-quality public transport system to improve mobility and help protect the environment.

Public transport – rail

12.40 Farnham Rail Station is located to the south of the A31 and therefore pedestrians need to cross the A31 to reach it. However, recent improvements to the A31 Hickleys Corner Junction by SCC have provided upgraded pedestrian facilities including reductions in the carriageway crossing widths for pedestrians and updated pedestrian signalling.

12.41 Farnham Station is located on the Alton Line operated by South West Trains. The station has a ticket office which is open 7 days a week, a waiting room, toilets and tactile platform edges.
A level crossing provides access between the platforms. There is cycle storage and a car park with 385 available spaces. This car parking is charged at £4.00 per day, Monday to Saturday but is free on Sundays and Bank Holidays.

12.42 Two services per hour operate in each direction to the north towards London Waterloo via Aldershot, Woking and Surbiton and to the south to Alton also stopping at Bentley. Passengers wishing to access Guildford, Camberley or Ascot can change at Aldershot for connecting services. Services on Saturday and Sunday are available with a reduced service on Sundays. Table 12.3 gives a summary of these services.

Cycling

12.43 Existing cycle routes include an on-carriageway route accessing Farnham Station from the east and an off-carriageway route along the southern edge of Farnham Park which gives access from Hale. In addition, the National Cycle Network (NCN) has recently been extended, with route 22 serving an east-west route to the south of Farnham including Farnham Station. Waverley Borough Council are promoting cycling through the Waverley Cycling Plan and have identified desired routes, including some into the town centre. Appendix 12.2 shows the most recent version of the Waverley Cycle Network for Farnham. NCN Route 22 is not shown, but it is noted that this route satisfies some of the desire lines south of the town.

12.44 Figure 12.2 shows the extent of a 5km cycling radius of the site. PPG13 identifies that cycling remains the best alternative to the car for journeys less than 5km and it can be seen that this covers a large area including all of Wrecclesham, Rowledge and Lower Bourne. It also covers Hale, Upper Hale, Heath End and Weybourne to the north as well as extending into the southern parts of Aldershot. There are, however, gradients between Farnham and Upper Hale that might constrain the use of cycles for this trip.

Walking

12.45 Facilities for pedestrians accessing the East Street Site at present comprise the signalised crossing facilities at the junction of The Borough with East Street, South Street and Bear Lane and also a pelican crossing lying to the north of the junction of South Street with Victoria Road which allows pedestrians to cross South Street at the same time as allowing vehicles to emerge from Victoria Road onto South Street. In terms of footways, all the roads in the vicinity have footways on both sides of the carriageway although in the case of The Borough, the footways are restricted in width and make conditions difficult for those with a mobility impairment or children in buggies.

12.46 The TRL study for Farnham Town Council identified that The Borough has poor quality and...
narrow footways and suggested measures including the reallocation of space to pedestrians by reducing traffic to one lane. The TRL study went on to show pedestrian accident clusters along The Borough and East Street as well as at the junction of South Street with Union Road and identified East Street as being a poor quality link along with The Borough. Poor quality crossings were identified at the junctions of Downing Street and Castle Street with The Borough.

12.47 There are three public rights of way across the site (public footpaths numbers 169, 170 and 171). Footpath 169 runs from South Street at its junction with Union Road in the vicinity of the Methodist Church, along the rear of Faulkner Court and Brightwell Cottage and to the south of Dogflud Way. At this point the rights of way bifurcate and lead past the sports centre to the north to meet with Dogflud Way (Footpath 170) and east alongside the River Wey (Footpath 171). There is a footpath on the south side of the River Wey known as The Borelli Walk which leads from South Street into Weybank Close on the north side of the river by way of an existing footbridge. Another path leads along the northern bank of the River Wey between South Street and Dogflud Way car park.

Road safety data

12.48 Personal Injury Accident Data was acquired from Surrey County Council for the three year period between 1 September 2004 and 31 August 2007. In total 52 accidents were recorded in the area of search which was the area surrounding the site namely South Street, Union Road, Victoria Road, Downing Street, The Borough, East Street, Dogflud Way, Woolmead Road and part of Bear Lane. The severity of these accidents was predominantly slight with only 6 serious accidents. There were no fatalities in the three year period.

12.49 Table 12.4 shows the location of the accidents recorded. It records that the Hickleys Corner Junction between A31, Station Hill and South Street accounted for approximately 21% of all the accidents recorded in the area. In all, 46 incidents involved private cars, three involved pedal cyclists and one involved motorcyclists. Twenty of the accidents involved pedestrians in conflict with vehicles. This is a relatively high proportion of accidents involving pedestrians and reflects the findings of the TRL report.

Parking

12.50 The car parks in Farnham are shown on Figure 12.3. It can be seen that they all lie within approximately 400-500m of the site and are therefore all within a six minute walk. The maximum distance between any of the car parks and the furthest extent of the town centre is approximately 800m, that is, a 10 minute walk. It is therefore possible to approach Farnham from any direction and park at a peripheral car park and still be within ten minutes of any town centre shop or business wherever it is located.
12.51 The 2007 parking charge for each of the car parks is set out in Appendix 12.3 along with the number of spaces available. This shows that there are approximately 1,800 spaces available for public use within car parks under the control of Waverley Borough Council, however there are private car parks at East Street on the former cinema site and at The Maltings. These sites are also regularly used by both commuters and short term visitors to the town centre. Therefore the total publicly accessible spaces in Farnham amount to approximately 2,100.

12.52 Surveys were carried out in all the Farnham car parks during Friday 13 July and Saturday 7 July 2007. The surveys are considered to represent typical conditions.

12.53 The surveys were carried out over a 12 hour period from 8am to 8pm and recorded the number of spaces occupied at hourly intervals in each car park with the exception of East Street cinema car park, which was monitored by observing movements in and out of the access on East Street. Movements in and out of the South Street, Dogflud Way and Central car parks were also recorded at the respective access points.

12.54 The results of the surveys are shown in Appendix 12.4. They show that the car parks in the east of Farnham (St James’, Riverside 1 and Riverside 2) were not used as fully as the car parks in the central area and at the Hart. The reasons for the lack of usage of these car parks is probably due to the parking charge structure. It currently costs £1 to stay up to 3 hours in the Dogflud Way and Waggon Yard car parks but £3 to stay in St James’ and Riverside 1. It is therefore much cheaper to park in the more central car parks for short term parking of up to 3 hour duration. Combined with the additional walking distance from the car parks to the east of the town, this makes short stay parking there relatively unattractive.

12.55 Appendix 12.4 shows that the spare capacity in all Farnham car parks, including the public and private East Street and Maltings car parks was a minimum of 499 spaces on Friday and 452 spaces on Saturday.

12.56 The figures from the car park survey are of particular interest with regard to the mixed use development proposed for East Street and are returned to in the assessment of parking impact and traffic generation described in later sections.

Traffic flows

12.57 The traffic flows at the junctions of East Street with Bear Lane/South Street/The Borough and Woolmead Road/Dogflud Way were recorded on 16 and 17 June 2006. Full turning movement counts were made from 0730 to 0930 and 1630 to 1830 on Friday 16 June and from 1000 to 1200 and 1500 to 1700 on Saturday 17 June 2006.

12.58 Further turning counts were taken from Surrey County Council’s observed traffic movements as input to their Paramics model.
12.59 These flows have not been used for junction assessments as the entire network has been modelled using Paramics. This is the approach which has been agreed with Surrey County Council as the Highway Authority. They were, however, used during the junction design process.

12.60 In addition, a survey at the junction of South Street, Victoria Road and Brightwells Road was carried out on Friday 2 and Saturday 3 March 2007 in order to verify flow levels and lane usage in this area.

12.61 Figures 12.4-12.7 summarise the traffic surveys undertaken by RPS. The weekday and Saturday AM and PM peak hours are included.

Assessment of effects

Construction / demolition effects

12.62 The impact of construction traffic is also relevant for consideration in this Transport Assessment. The most intensive period of activity on the site will be during the excavation and construction of the basement car park. This is particularly so because of the implications of increased numbers of heavy goods vehicles travelling around the roads of Farnham.

12.63 The majority of the heavy goods vehicle movements associated with the construction of the proposed development will be related to the basement car park. An assessment of the traffic arising from the basement construction has been made based on the volume of material excavated, assumptions about excavation bulking (the increase in volume of the material after excavating and placing in a lorry) and the capacity of vehicles. An assessment of the concrete volume for the foundations and basement slab has also been made.

12.64 It is estimated that approximately 30,000m³ will be excavated, bulking to 42,000m³. Assuming a 13m³ lorry capacity, this equates to 3,231 movements away from the site.

12.65 Concrete for the basement car park will amount to an estimated 6,200m³ which amounts to approximately 1,030 deliveries of 6m³, the standard size of road ready-mix lorries. It may be possible to erect a concrete batching plant on site, but the raw materials would still need to be delivered.

12.66 These assumptions give an estimated 4,300 movements into the site and the same number away from the site. On the assumption that construction of the basement was to take 12 months, the average daily two-way HGV movements would be approximately 32 (using 250
working days per year). During a 10-hour period, this would equate to around 2 per hour on average.

12.67 The large part of the development will take place from Dogflud Way and it is assumed that a lorry management strategy will be agreed with the various authorities to ensure that is the case. On this assumption, the impact due to this stage of construction will be limited, representing less than 1% of total existing traffic, and less than 10% of the traffic attracted to the development once complete.

12.68 During construction, there will be the need for a limited number of construction vehicles to use the South Street access via Brightwells Road. These will be minimised as far as possible.

12.69 Overall, therefore, it is not considered that the construction phase will be onerous on the road network of Farnham and that there will be no material environmental impact from the traffic generated, based on the IEMA Guidance Thresholds discussed in paragraph 12.121.

12.70 It is evident that the construction of the development will result in a temporary loss of the Dogflud Way and East Street car parks. The impact on the supply of parking requires quantifying and this has been done using the results of the surveys carried out in July 2007. The construction is not phased.

12.71 It is evident that the construction of the development will result in a temporary loss of the Dogflud Way and East Street car parks. The impact on the supply of parking requires quantifying and this has been done using the results of the surveys carried out in July 2007. This construction is not phased.

12.72 Tables 12.5 and 12.6 show how the assessment has been carried out and reveals that there will be sufficient parking in Farnham as a whole to accommodate the current level of parking in these two car parks.

12.73 On a typical Friday, also representing other weekdays, the situation is satisfactory with all but 81 vehicles currently parking in the Dogflud or East Street car parks finding spaces in the remaining eastern car parks during the period of highest demand. There may be some additional traffic movements on the one-way system through Farnham as a result, although not during the earliest period of the morning, assumed to be up to 10 a.m., while there is still capacity in the eastern car parks. By approximately 1600 the situation will have eased again, with spare capacity in the eastern car parks.

12.74 On Saturday, the period when vehicles have to find alternative parking spaces to the west will be shorter, from approximately 1230 to 1430 and the maximum number of vehicles is shown to be 59.
A proposal is being devised by Waverley Borough Council to extend the existing Riverside 2 car park in association with relocation of the tennis courts to that site. No planning permission has yet been granted although an application has been submitted. This proposal would add a further 200 spaces to the parking supply in east Farnham, sufficient to deal with the demand not catered for in eastern car parks on weekdays during construction.

In conclusion, it is apparent that the loss of parking in Dogflud Way and East Street car parks can be accommodated elsewhere in Farnham, and that the situation could be eased further if the WBC proposal for Riverside car park comes forward.

The significance of the construction effect is therefore considered to be minor adverse.

**Operational Effects**

**Assessment of modal choice**

The current modal choice of residents in Farnham for all journey purposes at various time periods is given in Table 12.7. This information is from the national TEMPRO database. TEMPRO, the DfT’s Trip End Model Presentation Program is designed to allow detailed analysis of pre-processed trip-end, journey mileage, car ownership and population/workforce planning data. The current version of TEMPRO (Version 5) is multi-modal, providing data on trips on foot, by bicycle, motor vehicle (both as a driver and passenger) by rail and by bus. For comparison the modal choice for the journey to work of residents in employment in Farnham by ward is given in Table 12.8.

These figures show that the modal choice on foot for journeys to work is low compared with other trip types. Although the development does provide new jobs, the main elements are residential, which generate a wide range of trips more in line with DfT TEMPRO assumptions and retail, which is well served by local bus services.

Generally, it can be expected that the residential element of the East Street site will generate a higher number of walking and cycling trips because of the location and proximity of local services within the compact town centre. The 2001 census data for the most central ward, Farnham Castle, shows that walking to work is 2.5 times more prevalent than for all Farnham Wards combined and car journeys account for 51% of work trips compared with 63% for Farnham as a whole.

Arriving at an estimate of future modal choice for the development proposals is therefore likely to be closer to a combination of the TEMPRO and Journey to work data. An estimate is also given in Table 12.7.

The significance of the effect on modal choice is assessed as minor beneficial.
Traffic Impact

12.83 The impact of the development-related traffic for the road network in the vicinity of the application site has been assessed using the micro simulation program Paramics. This is the approach which has been required by Surrey County Council, as the Highway Authority.

12.84 Before setting out details of the Paramics modelling, the proposed junction improvements within the Town Centre are considered.

Junction Improvements

12.85 Improvements to a number of junctions within the Town Centre have been considered, the details having been agreed with the Highway Authority in the context of the Original, Duplicate and Updated planning applications for the site. The layouts have been modified as necessary to take account of where comments have been made by the Highway Authority, including in Stage 1 Road Safety Audits.

Junction Between The Borough, East Street, Bear Lane, South Street

12.86 It is proposed to improve the layout of the junction as shown on drawing No JNY4420/46E as included in Appendix 7 of the Transport Assessment.

12.87 The existing layout of the junction performs very poorly in terms of saturation flows i.e the rate of flow through the junction under constant demand conditions. The junction suffers from congestion due to:

(i) the weaving of traffic turning into South Street from The Borough and East Street,

(ii) the extent to which some vehicles halt within the junction to give way to oncoming vehicles from the opposite arm,

(iii) large vehicles turning left and right at the junction find these manoeuvres difficult, especially buses and long articulated vehicles.

12.88 However, the junction currently operates in a very simple manner much like a pedestrian crossing and the traffic is only stopped when a pedestrian demand is entered. Therefore the vehicles green time has been observed to run from between 30 and 240 seconds. The normal range of cycle times for a traditional traffic signal junction is up to 120 seconds.

12.89 The proposed improved layout shows that East Street will be restricted to buses and service vehicles (during controlled hours) and cycles with an Advanced Cycle Stop Line being provided on the approach of The Borough to the junction. The shared footway/cycleway on the southern side of East Street is also shown, together with cycle parking.
12.90 The proposal is to have a three stage junction with one stage each for The Borough, Bear Lane south-bound traffic and the pedestrians. This is one more stage than exists at present and therefore will inevitably result in more “lost time”, that is, time during which traffic could be passing through the junction which is lost due to the changes between each stage. However, the revised junction arrangement will separate the opposing flows and also result in fewer turning manoeuvres. There is an inherent uncertainty in the modelled predictions when compared to the implemented scheme but it is considered that the full calculated saturation flow normally used will be achieved in the future situation, in contrast to the existing situation, where observations show that only approximately ½ of the theoretical saturation flow value is achieved on average.

12.91 It also needs to be borne in mind that there are significant advantages to be gained from this traffic management proposal. The benefits to vehicles have already been outlined in terms of turning manoeuvres and conflict with oncoming traffic, but a strong factor in deciding to adopt this traffic management approach was the benefits to pedestrians and the general retail environment in East Street, a stretch of the highway which the TRL study has identified as having a poor quality for pedestrians and relatively high incidence of pedestrian personal injury accidents.

12.92 It should also be noted that these traffic management proposals are being adopted by the Applicants but that there is an ongoing review of traffic management proposals in Farnham which may result in further works being carried out along the lines either of the Farnham Movement Package, the TRL study or some other scheme yet to be devised, with an objective of improving conditions even further for pedestrians and traders in Farnham. Therefore although the results of the analysis are indicative of the situation with the East Street scheme in place, they represent an interim transition between the current highway context and a future position which it is hoped will bring about the benefits so often communicated by residents, shoppers, workers and local politicians as being the desired way forward for transport in Farnham.

12.93 It is considered that any further improvements along the lines of the FMP or TRL study will require much more consideration and testing before implementation given the changes in conditions that occur with the application proposals. Further restriction of the space given to vehicles in favour of widening footways on The Borough would give rise to significant changes in queues and journey times in Farnham and could only realistically be achieved through comprehensive traffic management beyond the scope of this development.

**Dogflud Way Site Access**

12.94 The proposed Dogflud Way access is a simple left in/left out junction. The proposed layout for
the junction is shown on drawing No JNY4420/48D, included in Appendix 7 of the Transport Assessment.

**South Street Site Access**

12.95 The proposed layout of the Brightwells Road site access and its junction with South Street is shown on drawing No JNY4420/64A included in Appendix 7 of the Transport Assessment. The drawing also shows the proposed shared cycle/footway on the southern side of Brightwells Road.

**Junction Between Firgrove Hill / Longbridge and Union Road**

12.96 The junction between the A287 Firgrove Hill/Longbridge and Union Road is proposed to be improved as shown on drawing No JNY4420/44B, included in Appendix 7 of the Transport Assessment. The signalisation would have benefits in allowing positive control for pedestrians and would provide more capacity for the inbound flow of traffic from the residential areas south of Farnham town centre.

**Junction Between East Street, Dogflud Way and Woolmead Road**

12.97 The proposed improved signalised junction between East Street, Dogflud Way and Woolmead Road is shown on drawing No JNY4420/45C, included in Appendix 7 of the Transport Assessment. The layout incorporates the shared cycle/footway on the southern side of East Street together with the Toucan crossings.

**Junction Between East Street and Dogflud Way (East)**

12.98 The proposed improvements to this junction are shown on drawing No JNY4420/59A included in Appendix 7 of the Transport Assessment. The drawing shows the incorporation of Toucan crossings on both the south eastern and south western arms of the junction as part of the proposed shared cycle/footway on the southern side of East Street.

**Paramics Modelling**

12.99 As stated above, SCC’s 2004 Farnham Paramics model was previously used to illustrate the flow of traffic on the adjacent highway network from similar development proposals on the application site to elected members outside the planning consultation forum events. However, RPS had concerns with the SCC Paramics model since its primary purpose was to assess the effect of improvements made to the A31 Hickleys Corner junction and following a detailed interrogation of the model it was considered that the town centre was not accurately modelled. The SCC Paramics model was therefore only previously used as a guide in assessing the
impact of development on the adjacent highway network.

12.100 During discussions, it was established that SCC were keen to use Paramics to assess the impact of development in the morning and evening peaks, particularly given the estimated changes in traffic flow through the town centre, the current operation of junctions and their interaction with other junctions both upstream and downstream. Given the above concerns, SCC therefore suggested that RPS use the existing Paramics model to construct a new cordon model which focused on the town centre. The impact of development within the town centre and the A31 Hickleys Corner junction could then be assessed as a network in addition to the standalone junction assessments outlined above.

12.101 In discussing the scope of the cordon model with SCC it was agreed that the model should include only the town centre. This therefore excluded the Coxbridge and Shepherd and Flock roundabouts and assumed there would be no route choice within the model. The cordon model would not therefore assess the extent of trips transferring from the town centre onto the A31 Farnham Bypass or vice versa. It was agreed that the full extent of route choice would be discussed and assessed following the submission of the Paramics cordon model.

12.102 A cordon model was therefore constructed and calibrated and validated in accordance with advice contained in Volume 13 of the Design Manual for Roads and Bridges (DMRB) and ‘The Microsimulation Consultancy Good Practice Guide’, published by SIAS. A Local Model Validation Report (RPS Report Ref: JNY4420-14) was subsequently prepared and submitted to SCC. This report is included as Appendix 15 of the Transport Assessment and has been accepted by Surrey County Council as accurately reflecting base conditions and suitable for future modelling.

12.103 Figure 1 of Appendix 15 of the Transport Assessment shows the extent of the cordon. This is bounded by nine external zones, accessed by the following roads:

i) A287 Folly Hill, south of Hale;

ii) B3007 Hale Road, south west of junction with A325;

iii) A325 Guildford Road, west of junction with A31 (Shepherd and Flock roundabout);

iv) A31 Farnham bypass, west of Shepherd and Flock roundabout;

v) B3001 Station Hill, south east of junction with A31 bypass (Hickleys Corner);

vi) Weydon Lane, south of junction with A31 bypass;

vii) A31 Farnham bypass, east of Coxbridge roundabout;

viii) A325 West Street, east of Coxbridge roundabout;
A287 Firgrove Hill, south of bridge crossing A31 bypass.

12.104 The validated base model was then used to assess the impact of development in 2012 with full details of the process and assessments being set out RPS Report Ref: JNY4420-19, which is included as Appendix 16 of the Transport Assessment.

12.105 Appendix 16 is supplemented by Report JNY4420-22, included as Appendix 17 of the Transport Assessment. This report sets out the methodology for calculating the amendments to the Paramics origin/destination matrix for the ‘with development’ scenario. This includes amendments due to physical car park changes and land use changes since the base surveys were undertaken, as well as the effects of the proposed development. The methodology includes assumptions that some vehicles currently parking on site, and some of the new traffic relating to the retail development, will use other car parks within the town in line with general assumptions regarding the implementation of Park and Stride.

12.106 A summary of the additional traffic generated by the development is given as Figures 12.9 and 12.10.

12.107 In summary, the model predicted marginal increases to journey times during the AM peak periods. The network is predicted to operate in similar conditions to the base during the PM peak period. Average queue lengths were predicted to increase during the AM peak period following development and reduce during the PM peak period following development.

12.108 The assessments showed that the most critical increase in journey times and queue lengths following development occurred on Castle Street. In consultation with Surrey County Council, sensitivity testing was therefore undertaken which reassigned traffic from Castle Street onto Hand Road/Guildford Road/Dogflud Way. This showed that if 14% of traffic reassigned then traffic conditions on Castle Street would return to base conditions with only a marginal effect on Hale Road and Dogflud Way.

12.109 These assessments indicated that the increased queuing and delays were a function of the network changes rather than the increased traffic flow. Indeed, further sensitivity testing was undertaken by assigning base traffic flows onto the development network. These assessments estimated similar results to the ‘with development’ scenario, thus justifying this conclusion.

12.110 The network changes have evolved in full consultation with Surrey County Council and have been designed to improve the environmental setting of Farnham town centre, particularly for pedestrians. Full details of the assessments are contained in RPS Report Ref: JNY4420-19, attached at Appendix 16 of the Transport Assessment.
Assessment of permanent parking situation

12.111 The implications of the East Street development on parking have been looked at in the context of Farnham as a whole rather than the specific changes to car parks on the East Street site. Nonetheless, observations of current parking demand in the 3 existing car parks on the site reveal a minimum of 140 spare spaces on Friday and 88 on Saturday. The occupied spaces in these car parks are also a combination of demand for the existing land uses on the site and general public parking for a multitude of purposes not necessarily related to any of the land uses on the site. It is therefore necessary to try to attribute those spaces that are occupied as a result of trips to the proposed land uses on the site so that the overall public parking demand for other uses can be carried forward into the calculation for overall demand in Farnham.

12.112 A graphical representation of the situation has been devised and is shown in Figures 12.11 and 12.12. Figure 12.11 shows for a Friday and Saturday how the existing parking demand within Farnham varies, particularly in the Dogflud and South Street car parks. The parking accumulation due to the existing land uses has been calculated from the tables of trip generation for the site and is shown separately on the diagram. By subtracting these from the total observed parking demand on the site, the parking demand for general parking purposes other than the uses that are to be replaced on the site can be established.

12.113 Figure 12.12 shows for a typical Friday and Saturday how the situation is affected by the parking demand from the East Street development. They show that the maximum parking demand for the application proposals exceeds the 400 spaces provided for public use on the site for a large proportion of each day. This proportion of the parking demand will have to seek alternative parking elsewhere in Farnham. These figures show that effect by adding the excess demand to the existing demand observed in all the other car parks in Farnham. These comments form the basis of the necessity or otherwise of the Park and Stride scheme.

12.114 On a typical Friday this results in a maximum demand which is approximately 208 spaces less than the capacity of all the car parks in Farnham and on a Saturday the maximum demand is 127 spaces less than the capacity.

12.115 In most car park systems it is aimed to achieve a 90% maximum occupancy of spaces to allow for some dynamic capacity when people are entering and leaving spaces. It would therefore appear that on the Friday, the maximum predicted demand aligns closely with this principal. On the Saturday the maximum predicted demand is approximately 93% of the total provision.

12.116 The context of planning policy with regard to parking is worthwhile considering in that it requires developers to only provide the number of spaces which they see as appropriate, within overall context of maximum parking standards for various land uses normally set down.
by the local authority. In this case, where a town centre car park is being provided to replace existing town centre car parks, it is much more difficult to be precise about the exact level of provision that should be made. However these calculations and figures illustrate that parking demand for the East Street site exceeds the car parking available on the site, which contrasts with the current situation where there is excess capacity compared with demand. The natural fear that such an excess would give rise to increased problems of parking within Farnham is not warranted, according to these predictions, because there is still sufficient spare capacity within the other car parks in Farnham which can be utilised by the excess demand. It is therefore considered that the parking situation is satisfactory, considering Farnham as a whole, and would lead to a better use of all the car parks within Farnham rather than just those within or adjacent to the site in the centre of the town.

Assessment of impact on link flows

12.117 The impact on link flows is an important consideration in the environmental context of noise and air quality assessments. The figures generated by the Transport Assessment have been adapted and used by the noise and air quality assessment consultants, whose findings are set out in the Environmental Statement. The calculations of changes to traffic flows are shown on Figures 12.13 and 12.14 and are based on the Paramics modelling work. In addition to the output flows on each link, an allowance has been made for the residual queues, in order to give an indication of actual demand. Figure 12.15 shows the equivalent predicted changes in 24-hour annual average daily traffic (AADT).

12.118 All diagrams show a high increase in traffic on Bear Lane and Woolmead Road. This is nearly all as a direct consequence of the pedestrianisation of East Street and change to the one-way system.

12.119 It can be seen from the figures that the most significant relative increase in traffic occurs between 1700 and 1800 hours on a Friday on the A325 Guildford Road.

12.120 The Borough experiences increases of 6.2% in the AM peak and 9.1% in the PM peak period. As can be seen from the impact on the junction described in earlier paragraphs, the overall level of queuing on The Borough is not altered significantly and overall conditions are expected to change only by a modest and probably imperceptible degree, given the day to day variations in traffic conditions experienced within the town centre.

12.121 Although separate air quality and noise assessments are carried out for the Environmental Statement, it is relevant to assess increases in traffic flow from other perspectives. The normal reference point for increases in traffic flow from an environmental point of view is the “Guidance Notes on the Environmental Assessment of Road Traffic” published by the Institute
of Environmental Management and Assessment (IEMA). The relevant extracts are given in Appendix 12.5. These guidance notes set out two thresholds for judging whether increases in traffic should be looked at in more detail.

12.122 Rule 1 is set at a threshold of 30% increase in traffic and is generally considered to be an indication of problems related to pedestrian safety and amenity rather than air quality and noise assessment. It can be seen that none of the increases in traffic expected with this development exceed 30% with the exception of Woolmead Road and Bear Lane. This is discussed further in paragraph 8.7.9.

12.123 Rule 2 sets a threshold of 10% increase in traffic in the context of what it terms “sensitive” areas. The guidance sets out that accuracies greater than 10% in traffic forecasting are not achievable and that therefore any projected changes in traffic of less than 10% create no perceptible environmental impact. However, traffic flow increases greater than 10% and less than 30% in sensitive locations such as accident black spots, conservation areas and links with high pedestrian flows may experience some perceptible effects.

12.124 The roads east of the junction between Woolmead Road, Dogflud Way and East Street are not considered to fall into this category but those lying to the west are with the exception of Woolmead Road itself, it can be seen that none of the link flow increases west of this point exceed 10%.

12.125 Regarding Woolmead Road, the increase in traffic is relatively large but:-

- This would be a consequence of the FMP in any event;
- Woolmead Road is not an important pedestrian link;
- A subway exists to provide for pedestrians crossing the link;
- This is a consequence of making substantial improvements to the environmental conditions in East Street, which is a much more important pedestrian route and sensitive location.

12.126 It is therefore considered that the guidance given by the IEMA indicates that it is unlikely that there would be any perceptible change in environmental conditions to any of the roads effected by additional traffic in Farnham arising from the East Street regeneration.

12.127 Clearly this conclusion does not discount the ongoing issue of traffic congestion in Farnham on occasions when it is interrupted by isolated events or conditions elsewhere on the highway network, which clearly cannot be part of the consideration of the assessment of the East Street development.
Summary of effects

12.128 Table 12.9 shows the summary of effects outlined above.

Cumulative effects

12.129 There are a number of other developments at various stages of planning and implementation. These are set out in more detail in the Transport Assessment but in summary comprise:-

- Farnham hospital site
- Riverside 2 car park site, Farnham
- Aldershot urban extension
- Bordon / Whitehill MOD sites
- Queen Elizabeth barracks, Church Crookham
- West Gate site, Aldershot

12.130 The transport assessment work has focussed on the central area of Farnham as agreed with the Highway Authority. The extent of the study area can be seen from Figure 1 of Appendix 15 of the TA. The future design year has also been agreed as 2012.

12.131 The first point to make is that many of these schemes are many times larger than the East Street proposals. The East Street site therefore needs to be looked at in the context of being a relatively small localised contributor to changing travel patterns in the area in the longer term.

12.132 Secondly, each of the major sites above has significant phasing attached to it. There is therefore a long lead time from the point at which they gain planning approval, which in itself can take a number of years. None of the larger sites has yet gained planning permission.

12.133 Thirdly, there is scant information regarding the traffic implications of any of these major sites on the network of Farnham around East Street. This makes it difficult to estimate their effect on the traffic conditions in Farnham.

12.134 In deciding how to take account of these developments, a view must first be reached about the likelihood of any discernable effects arising that might influence the Transport Assessment. It must also be noted that, in accordance with paragraph B9 of Planning Circular 5/2005, it is not reasonable for a developer to pay for infrastructure required to “satisfy wider planning objectives that are not necessary to allow consent to be given for a particular development”.
12.135 It is clear that additional trips will be generated by people visiting the retail and leisure facilities on the East Street site. However these trips have already been accounted for through the trip generation prediction made within this Transport Assessment. It would be double-counting to include trips for these purposes arising from the committed developments.

12.136 With respect to other trip purposes, it is the case that trips from each committed development will have a number of trip ends depending on the purpose. In terms of employment, the new shops at East Street will generate new jobs, but the method used to calculate trips generated by the retail element includes the extent to which car trips are currently made by using parking demand as the determining factor. Therefore there are unlikely to be any additional employment trips made by cars that have not already been taken account of in these calculations.

12.137 Any traffic arising from these committed developments related to the residential element of the East Street site has already been taken account of in the trip generation calculation of that element of the site.

12.138 There may be additional traffic heading to or from the other land uses of Farnham Town Centre arising from these committed developments, which is unrelated to the East Street site. It is not considered that the Transport Assessment needs to make any adjustments for these trips. The Paramics modelling has been used for the assessment of future traffic impacts in Farnham and this approach has been required by the Highway Authority. The Paramics modelling has taken account of the redistribution and assignment of traffic around Farnham central area reflecting the likely effects of such improvements as the implementation of Park and Stride.

12.139 Overall, in considering the cumulative effects of other significant developments, it is unlikely that these effects will be material given the scale, timing and double counting associated with the traffic generated by those schemes and therefore no further consideration or allowance has been made for the cumulative effect.

Conclusion

12.140 This chapter has examined the transport effects of the application proposals and has drawn on information contained within the more detailed Transport Assessment for the scheme. Appropriate background information has been taken into account and the baseline conditions have been thoroughly examined both by inspection on site and through the gathering of appropriate data from the local authorities. A number of surveys have been carried out to gather existing traffic flows and the current usage of car parks in Farnham.
12.141 The various methodologies for the assessment of effects has included an assessment of the traffic generated by the retail element of the scheme that takes into account the existing pattern of movements for shopping trips to Farnham town centre, which is considered to be a much more realistic assessment method than the conventional trip generation calculations using the TRICS database. The overall level of traffic generation arising from the application proposals has been assigned onto the local highway network and the resultant effects judged for significance. Overall during the operation of the site, the effects are considered to be minor adverse but more locally within East Street are considered to be substantial beneficial.

12.142 The effects during construction have been assessed during the most intensive period of activity on the site, being during the excavation and concrete construction in the basement car park. Overall the construction effects are considered to be minor adverse.