6. RENEWABLE ENERGY

INTRODUCTION

6.1 One of the aims of the study is to provide a basis for considering which renewable energy technology is appropriate at different development scales and in different types of location. This section provides a summary of the policy context before considering the main potential sources of renewable energy which may be applicable in Reigate and Banstead. The key locational factors are considered for each source, as well as the types of development for which they are appropriate, and the implications for strategic planning policy are set out.

POLICY CONTEXT

6.2 As set out in Section 1, PPS 22: Renewable Energy (2004) sets out the Government's policies for renewable energy, which planning authorities should take into account when preparing local development documents and taking planning decisions. The Government's objective is to "*put the UK on a path to cut its carbon dioxide emissions by some 60% by 2050, with real progress by 2020, and to maintain reliable and competitive energy supplies*".

6.3 PPS 22 states that renewable energy developments should be accommodated in locations where the technology is viable, and where environmental, economic and social impacts can be satisfactorily addressed. Planning policy should cover both stand alone renewable energy schemes and the integration of renewable energy into new development.

6.4 PPS 22 lists the key locational considerations for stand alone renewable energy developments as follows:

- Protection of the integrity of international and national designated sites (although buffer zones should not be created);
- For Green Belt locations, a clear case demonstrating the special circumstances of proposals will need to be set out;

- Proposals within areas protected by local landscape and nature conservation should be assessed against criteria-based policies; and

- As renewable energy developments can only be developed where they are feasible and the resource exists, a sequential approach is not appropriate. Sites which may be unsustainable for other uses (e.g. previously developed land in - isolated locations) may be appropriate for renewable energy schemes. Both rural and urban locations should be considered.

6.5 Other considerations for the siting of renewable energy developments include:

- Landscape and visual effects, particularly with reference to wind turbines;

- Noise generated by machinery and traffic and the possible inclusion in policy of separation distances between different types of renewable energy projects and existing development;

- Odour with respect to applications for anaerobic digestion; and

- Traffic generation for biomass projects and the need to locate plants in as close proximity to fuel sources as possible.

6.6 PPS22 encourages local planning authorities to foster community involvement in renewable energy projects and to seek greater public acceptance of prospective renewable energy developments. This theme is reiterated by the emerging South East Plan which states that local authorities should work with the communities and stakeholders to assist in the achievement of targets. The Plan seeks to promote renewable energy and energy efficiency. Policy EN1 states that Local Development Documents should encourage high standards of energy efficiency in all development, and should encourage the use of energy efficient materials and technologies. The Plan provides guidance on achieving energy efficiency through the design and layout of schemes (e.g. orientation, spacing, shading, passive solar design).[10] Policy EN2 encourages integration of CHP in all developments and district heating infrastructure in large scale developments in mixed use.

6.7 The South East Plan provides guidance on the likely constraints on renewable energy schemes, and highlights how landscape character assessment can help in identifying and developing guidance on location, scale and design of developments,

[10] There is a range of guidance produced by various organisations on achieving energy efficiency and using renewable energy within developments. The Code for Sustainable Homes (Department of Communities and Local Government, December 2006) seeks to drive a step-change in sustainable home building practice. The

particularly in areas of sensitive landscape (including greenbelt and AONB). Less sensitive areas including previously developed and industrial land and areas where there is already intrusive development or infrastructure are identified as likely priority areas for renewable energy development.

6.8 Policy EN3 and 4 set out the South East's renewable energy targets. Policy EN4 states that Local Development Documents should include policies and development proposals to contribute to the achievement of the regional and sub-regional targets. Table 6.1 shows the targets for the Thames Valley and Surrey sub-region, which consists of four counties and 27 local authorities.

Table 6.1: Potential Renewable Energy Deployment by 2010 and 2016

Year	Biomass Combustion/ Thermal	Biomass Anaerobic Digestion	Onshore wind	Small scale hydro	Photo-voltaics	Total
Installed Capacity (MW)						
2010	Up to 85	9	39	0.5	6.8	140
2016	Up to 125	14	58	0.5	11.7	209
Indicative no of schemes						
2016	Up to 4 large and 5 small biomass CHP plants, or a number of smaller plants	19 plants	5 clusters of 4 to 10 turbines, 25 large and 15 small single turbines		Around 1,300 domestic and commercial installations	

Source: Harnessing the Elements, South England Regional Assembly, May 2003

6.9 The following sections provide a discussion of the renewable energy sources identified in Table 6.1, the locational factors affecting their development and opportunities for their development in Reigate and Banstead. PPS22 requires local planning authorities to recognise the full range of renewable energy sources and the potential for exploiting them subject to environmental safeguards. A range of other renewable energy sources are also therefore considered as follows:

Code includes standards for energy and CO_2 emissions, and encourages use of local renewable or low carbon energy sources

- Energy efficient design;
- Ground source heat pumps; and
- Solar water heating.

6.10 Much of the analysis set out below draws on the Companion Guide to PPS 22 (date).

ENERGY EFFICIENT BUILDING DESIGN

6.11 The best way to save energy is to not use it in the first place. Nearly all buildings enjoy free energy and light from the sun. The aim of passive solar design is to maximise this benefit through a range of design approaches. These include:

- Orientation – maximising the main glazed elevation within 30 degrees of due south;
- Room layout – placing rooms for living and working on the south facing part of the building, with storage, kitchen and bathrooms on the north side;
- Avoiding overshadowing – spacing of buildings to avoid overshadowing of southern elevations;
- Window sizes and positions – reducing the size and number of windows on the northern facades to reduce heat loss;
- Conservatories and atria – these can contribute to the management of solar heat and ventilation;
- Natural ventilation – atria and internal ventilation stacks projecting above roof level can be used to vent air removing the need for air conditioning; and
- Light – Energy efficient bulbs can be easily fitted into homes and offices to drastically reduce the energy used in lighting. Enhancing natural daylight through passive design of the building and through the installation of light pipes reduces the need for artificial lighting and reduces the energy use of the building further. Light tubes or light pipes are used for transporting or distributing natural or artificial light. In their application to day lighting, they are also called solar pipes, daylight pipes, or solar light pipes. They are particularly good at lighting areas that are normally confined; and

- Heat – Enhanced insulation of walls and ceilings reduces the need for heating of the buildings. The insulation can be sustainable in nature from cellulose, newspaper and sheep wool. Secure insulation of pipes reduces the waste of heat from hot water in the pipes (especially water from solar water collectors). High thermal mass can be used to minimise the daily thermal swing and optimise the use of solar gain.

6.12 Other key measures to minimise resource and carbon use include:

- Water – Waste water systems for the site can be made sustainable by implementing Sustainable Urban Drain System (SUDS) where water run off from the roof and road runs through layers of different porous materials into subsoil or through a gravel drain into retention ponds on site that create nature habitats. Water used in the buildings from sinks, showers and baths can be used to flush toilets (grey water recycling) and the appliances can be water saving also such as low-flush toilets;

- Recycling can be made a feature in the homes and offices by installing recycling bins into kitchen and attractive communal recycling areas to make recycling as easy as possible. Information explaining facts about how we treat our world and the impact recycling can make are to be displayed in these areas; and

- Building materials – Sustainable building materials are increasing in availability. Natural materials such as wood for carbon offsetting can be used in most aspects of the build. Sustainable technologies also tend to be non-toxic and recycled or at least recyclable;

6.13 Many of these features can be incorporated into a wide range of building types in a variety of locations. In terms of passive solar design, the extent to which the principles set out above can be used within a scheme will be governed by site and building-specific factors. Larger sites are more likely to offer a range of layout and orientation options, increasing the potential for use of passive solar design.

BIOMASS COMBUSTION/THERMAL

Introduction to the Technology

6.14 This renewable energy source involves the combustion or thermal treatment of a range of biomass fuel sources of which the principal sources are:

- Wood from existing sustainable forestry;

- Energy crops including short rotation coppice;
- Forestry and agricultural residues including residues from timber processing like sawdust, straw and poultry litter;
- Clean wood waste from industry; and
- The biodegradeable fraction of Muncipal Solid Waste (MSW). The production of energy from waste is discussed in paragraphs 6.32 to 6.35 below.

6.15 There are currently three basic categories of biomass plant:

- Plant designed to produce electricity. These are generally larger schemes (10-40MW);
- Plant designed to produce heat including a wide range of applications from wood burning stoves in single dwellings to larger scale district heating schemes and heating of commercial or community buildings; and
- Combined Heat and Power (CHP) plant in which heat produced by the energy generation process is used productively, for example in industrial processes or in a district heating scheme. These typically range from 5 to 30MW, although smaller schemes have also been built in the UK. CHP is discussed in paragraphs 6.21 to 6.32 below.

6.16 There are three main methods for converting dry biomass fuels into energy:

- Direct combustion for heating water or to raise steam to drive an engine or turbine;
- Gasification in which solid fuel is incompletely combusted to produce gas which can then be burned in a boiler or used to fuel an engine or turbine; and
- Pyrolysis which involves heating fuel in the absence of oxygen to produce gas or liquid which can then be used in a similar way to gasification.

Key Locational Factors

6.17 The following factors are the key considerations influencing the location of biomass fuelled plants:

- The availability of fuel. Biomass is a low value, high volume commodity, and large volumes are required to produce energy. For example, a 1MW plant would require approximately 500kg of wood chip fuel every hour when running at continuous full capacity. For economic and environmental reasons, the ideal maximum transport distance is around 40km, although this can be much greater for large plant if fuel can be transported by rail or sea;

- Connection to the grid. Due to the cost of upgrading grid infrastructure, most electricity generation projects need to be located close to existing grid infrastructure which has the capacity to accept the electricity generated;

- Visual intrusion is an issue for larger plants which may consist of a two storey, medium sized industrial building with a chimney of 25 metres or more in height. These facilities are typically located in industrial areas;

- Traffic movements generated by the need to transport large volumes of fuel; and

- Any effects on health, local ecology or conservation from airborne and waterborne emissions.

Opportunities for Energy Generation in the Borough

6.18 The South East renewable energy strategy identified the Thames Valley and Surrey sub-region with the greatest potential for biomass fuelled electricity generation, due to the existing woodland resource and potential for coppice within and adjoining the area. As set out above, the supply of local fuel is a critical factor in the development of biomass as an energy source. Biomass fuel supply is currently being investigated by RBBC at the local level, including the potential for encouraging short rotation coppice in locations where there would not be an adverse impact on landscape quality. The Council is also currently exploring the possibility of developing a wood fuel hub to process a range of inputs to produce biomass fuel. Analysis of the likely supply of biomass fuel to the Borough will be important in determining the scale and quantity of biomass energy generation which can be achieved.

6.19 As set out in paragraphs 6.20 to 6.31 below, some of the best potential for the generation of heat and electricity from biomass is considered to be through the development of CHP. In addition, there may be potential for energy generation through a large-scale biomass plant. This would constitute and industrial-type building with a chimney, and is most likely to be acceptable in an industrial location. The Borough's allocated industrial and selected employment areas are shown in Figure 6.1. A detailed examination of all the Borough's industrial and employment

areas, including those outside the urban area, would be useful in exploring which of these might be most appropriate to accommodate renewable energy development.

6.20 At the small scale, there are a wide range of opportunities to incorporate small scale biomass heat plant within individual buildings or for single users, particularly as the technology improves.

COMBINED HEAT AND POWER

Introduction to the Technology

6.21 CHP plants produce the simultaneous generation of electricity and heat. CHP can apply as part of a centralised scheme with distribution systems for heating and cooling or as an individual technology in some individual buildings. The key to the successful efficient operation of CHP is well matched electrical and heating/cooling loads and load patterns.

6.22 CHP plants can be powered by a range of fuel sources of which the most sustainable is biomass/biofuel. Using fossil fuels it is not zero carbon but is considered a LZC (low or zero carbon) technology due to its efficient overall use of fuel if properly matched to thermal loads. Biomass CHP at any scale is presently not a mature technology, but this is expected within 10-20 years. CHP requires a network to distribute the captured heat as well as the electricity produced.

6.23 To date examples of small or medium CHP operating on biofuel in the UK are very sparse and one very well known example at the Beddington Zero Energy Development (BedZED) is often quoted as being a failure, giving rise to questions of the level of technical risk.

6.24 As CHP can operate much as any other small power station a biofuel CHP plant is just about the only potential source of large quantities zero carbon electricity 'on demand' – i.e. it is not reliant on there being wind or sun. However, the size of a CHP scheme is generally limited by the demand for heat in the immediate local area around the plant.

Mini/Micro-CHP and Small Heat Plant

6.25 Micro-CHP systems, which operate in homes or small commercial buildings, are driven by heat-demand, delivering electricity as a by-product. The heat demand load profile for each building will be unique. Because of the fluctuating heat and electrical demand of the building, the micro-CHP systems will often generate more electricity than is instantly being demanded.

6.26 Micro-CHP systems achieve much of their savings, and thus attractiveness to consumers, through a "generate-and-resell" or net metering model wherein home-generated power exceeding the instantaneous in-home needs is sold back to the electrical utility. This system is efficient because the energy used is distributed and used instantaneously over the electrical grid.

6.27 The system will cost more than conventional heating systems and reliability is not yet proven in this country. The payback of a system and the carbon footprint will depend largely on what the building load profile is and the fuel source is.

Issues affecting appropriate locations and types of development for CHP

- New development – experience has shown that it is difficult to retrofit CHP into existing development in many situations. The best opportunities for installing CHP are within new developments, where users can be required or encouraged to sign up to a CHP scheme, and the infrastructure can be developed as part of the development. There may be exceptions to this, where large scale existing developments can be cost-effectively connected to a CHP scheme. This includes facilities such as hospitals (East Surrey), leisure centres (Donyngs), colleges, schools and supermarkets, which are users with high and constant heat and electricity requirements throughout the year. However, there are likely to be a wide range of implementation issues related to this type of retrofit approach, and costs can rise rapidly if issues such as diverting existing services are encountered. Detailed case by case analysis is required to explore feasibility. The feasibility of implementing a scheme will be improved if there is adjacent new development providing the potential to combine serving the new development and connecting into an existing facility;

- Energy demand of development – The key to the successful efficient operation of CHP is well matched electrical and heating/cooling loads and load patterns. Managing the peak demand is crucial to proving the viability of the scheme;

- Fuel source - If biomass is used as a fuel, care must be taken at the planning stage to ensure that there is suitable supply. The carbon footprint may be significantly influenced by the distance from the fuel source. CHP systems are required to meet emissions standards that regulate the emission of pollutants into the air. It must be noted that it is important to carry out a full air quality dispersion modelling exercise for any new plant, as this could add to existing air pollution problems, or create new ones***;***

- Physical space - Incorporating a CHP plant into a development requires space. For example, a plant producing 7-8 megawatts requires a plant room with a footprint of around 80m^2 and headroom of 4m, with additional space for fuel storage (the size of which will vary depending on the type of fuel used) in the order of 30m^3 to 100m^3. The plant can be incorporated within a larger building, or developed as a free standing installation. In addition to the plant itself, there is a need for a heating network to be built to distribute the heat to the consumers

Key locations for CHP in the Borough

6.28 Based on the discussion set out above, the following locations are considered as most likely to be suitable for a CHP scheme:

- Redhill town centre is the Borough's key development opportunity and provides an excellent opportunity for the incorporation of CHP technology. The installation of a CHP plant in Redhill town centre has been explored in more detail in a separate preliminary study. The study identified a possible location for a CHP plant supplying heat and electricity to all the future users of the town centre regeneration scheme;

- Horley town centre has a variety of mixed use redevelopment opportunities located in relatively close proximity. A requirement to investigate the potential viability of CHP within the Horley urban extensions was set as a planning condition attached to planning permissions;

- The redevelopment of large institutional areas for a mix of uses could potentially be appropriate for CHP;

- Others – East Surrey hospital, supermarkets and leisure centres in proximity to other community heating systems may have opportunities for energy linking. Supplying electricity directly to customers nearby will almost certainly obtain a better price than selling it to an electricity supplier via the national grid; and

- CHP offers opportunities to co-locate generation of heat with high demand industrial users of heat in industrial areas.

6.29 Purely residential schemes are unlikely to match the constant heat demand load profile required to make CHP viable, but nonetheless can support community heating/cooling systems without generation of electrical power. However, it should be noted that technology is developing all the time, and new forms of CHP are being successfully used in the UK and overseas, and CHP is being installed increasingly in

a broader range of development types. Developments of more than 200 units at a densities of more than 80 units per hectare are likely to provide good viability for community energy and be commercially attractive to an Energy Service Company.

6.30 At the small scale there are a wide range of opportunities to incorporate CHP or small scale biomass heat plant within individual buildings or for single users, particularly as the technology improves.

ENERGY FROM WASTE THROUGH THERMAL PROCESSES

Introduction to the Technology

6.31 Energy can be produced from a range of types of waste through thermal processes. Sources include MSW and non-hazardous industrial and commercial waste. As explained in paragraph 6.13, the biodegradable fraction of this waste would form a source of biomass and thus renewable energy. The main types of technology used to recover energy from waste are the same as those set out in paragraph 6.15 for biomass. Developers are encouraged through the eligibility of Renewables Obligations Certificates (ROCs) to develop the advanced conversion technologies (pyrolysis and gasification) which are inherently cleaner.

Key Locational Factors

6.32 The key locational factors for are similar to those for larger scale biomass plants and include:

- Proximity to fuel supply – in this case MSW and other non hazardous waste;
- Connection to the grid;
- Odours – sources of odour nuisance could include emissions through chimneys and vents, open-air storage of waste, handling or transport of waste;
- Visual impacts – the scale and form of these types of installations mean that they are typically located within industrial areas; and
- Traffic impacts created by deliveries of fuel.

Opportunities for Energy Generation in/near the Borough

6.33 In December 2007 the Waste Plan for Surrey was found to be sound. The Plan sets out the County Council's proposals for the future provision of waste-related

development in Surrey. It allocates land at the Clockhouse Brickworks near Capel as the preferred location for a thermal waste treatment plant in Surrey. A handful of other sites were also identified as being suitable for a thermal treatment facility including the site of the former airfield at Wisley.

6.34 Surrey Waste Management submitted a planning application to SCC in Autumn 2007 for a 110,000 tonnes per annum energy from waste facility at the Capel site which is expected to be determined in spring 2008. If constructed, it is estimated that the facility would be able to generate sufficient energy to export around 8MW electricity to the National Grid - sufficient to meet the needs of around 8,000 domestic dwellings.

6.35 The Borough Council was actively involved in opposing applications for an Energy from Waste Plant at the Copyhold site, Redhill, which were refused in 1995 and 2001. The Council's position has been that, in questioning the needs assessments these applications were based upon, large-scale incineration is not necessary and would lock SCC into a waste management strategy which is lower down the waste hierarchy than it needs to be, and would crowd out measures to increase recycling. The Council was keen to explore alternative technology, which is more sustainable, that has been becoming available e.g. thermal conversion (pyrolysis/gasification/high temperature oxidisation), which could provide cleaner, safer and smaller localised facilities, close to where waste arises. These types of facilities are likely to be located in industrial areas as recommended in the adopted Surrey Waste Plan Core Strategy.

WIND

Introduction to the Technology

6.36 The advantages of wind power include: the potentially considerable provision of decentralised, cost-effective, carbon-free electricity; the contribution to local, national and international targets for renewable energy; the reduction of the Borough's ecological footprint; and the awareness-raising potential of high-profile schemes. The South East Plan expects each local authority to accommodate at least one wind energy development in the next two decades.

6.37 Wind turbines are available in a wide range of sizes from small battery charging units with rotor diameters of less than 1 metre to large turbines with rotor diameters greater than 100 metres and a capacity of several megawatts. Turbines can be deployed singly, in small clusters or in larger groups know as wind farms. They need to be spaced around 3-10 rotor diameters apart to minimise capital cost and to lessen energy loss through wind shadowing.

Key Locational Factors

6.38 The key locational factors affecting the development of larger scale wind energy projects include:

- Wind resource. There must be sufficient wind to produce a viable scheme. Figure 6.1 shows average wind speeds and key environmental designations. The wind speeds predicted for the Borough are relatively low compared with the most windy locations in the UK. Wind speeds at 45m above ground level vary from 5.4 metres per second to 7.5 metres per second, with highest wind speeds in the central and northern parts of the Borough. These wind speeds, on their own, are unlikely to be sufficiently high to attract a developer to carry out feasibility work for turbines in the area. However, if a suitable site were identified and promoted by the Borough, it may be possible to generate interest in developing a scheme. In addition, the increasing flexibility of wind turbines is underlined by PPS22 which states that *"local planning authorities should not make assumptions about the technical and commercial feasibility of renewable energy projects (e.g. identifying generalised locations for development based on mean wind speeds)."* Para 1(v);

- Landscape and visual impacts. These are perhaps the key concerns relating to the development of wind turbines, particularly in locations with high quality landscapes protected by local and national designations. Figure 6.1 shows that much of the Borough is covered by landscape, ecological and cultural heritage designations. These designations do not preclude the development of renewable energy projects, but indicate that the impacts of proposals for wind turbines will need to be carefully assessed in terms of their impacts. The South East Plan gives priority to locations in less sensitive areas, wind and other renewable energy development should not be precluded in AONBs where the Plan considers that small scale construction can be successfully accommodated through careful siting and design;

- Connection to the grid. Due to the cost of upgrading grid infrastructure, most electricity generation projects need to be located close to existing grid infrastructure which hs the capacity to accept the electricity generated;

- Noise produced both by the mechanical operation of the turbine and the aerodynamic noise as the blades pass through the area. Current practice sets noise limits at the nearest noise-sensitive properties;

- Proximity to roads, railway, rights of way and powerlines. Turbines that are erected in accordance with best engineering practice should be stable structures.

However, fall over distance is often considered an acceptable separation from roads, railways and rights of way;

- Ecological impacts of wind turbine development may be important considerations, particularly in areas designated for their nature conservation value (e.g. SACs, SSSIs). Potential impacts include the possibility of birds being struck by blades or impacts caused by construction;

- Electromagnetic production and interference. Turbines can emit electromagnetic signals and interfere with other electromagnetic signals/transmissions, although these issues can generally be over come by careful siting or modification to transmitter equipment; and

- Air safeguarding and radar. Wind turbines can present a risk of collision with low flying aircraft and may interfere with the operation of radar. Airports and National Air Traffic Control Services must be consulted on proposals for wind turbines that lie within around 30 kilometres of them. The close proximity of Gatwick airport means that the relevant consultations would be required, and potential impacts on aviation will be a key concern, particularly in the south of the Borough. Figure 6.2 provides safeguarding information for Gatwick airport. The map shows the need to consult with BAA before carrying out a range of types of development within the southern and central parts of the Borough.

Opportunities for Energy Generation in the Borough

6.39 As mentioned above, the South East Plan states that less sensitive areas including previously developed and industrial land and areas where there is already intrusive development or infrastructure are identified as likely priority areas for renewable energy development. Following this guidance, possible locations for wind developments include:

- Industrial areas although these are often located in areas with relatively low wind speeds and/or in close proximity to town centres and/or residential areas;

- In landscape terms, locations with low or medium-low sensitivity to change may provide the best potential for larger installations. The first stage of this study identified these locations (as set out in Section 2 of the Phase 1 report) as part of sub area A1 north and east of Banstead, B3 east of Redhill and C1 the southern fringe of Horley. However, these locations have wind speeds of between 5.7 and 6.7 at 45m above ground level, indicating that winds here are quite low. In addition, the fact that the quality of the landscape of these areas has been degraded by development means that there is a need for their enhancement and

improvement: development of any kind in these areas would need to be carefully designed to avoid intrusion. Significant parts of these areas are covered by nature conservation designations, which could also constrain development of wind turbines; and

- The Borough has a range of transport infrastructure including the M25, M23 and rail corridors. The M25 passes through some of the windier locations in the Borough, particularly to the north west of Reigate. However, this and much of the rest of the area through which the M25, M23 and rail corridors pass is AONB, is of high landscape quality and has a high sensitivity to change.

6.40 The nature of the impacts of wind turbines mean that any scheme in any location would need to be carefully sited and designed to ensure that no unacceptable impacts are generated.

6.41 The Companion Guide to PPS22 notes that the likelihood of obtaining planning permission is becoming a much more dominant factor in site selection for wind turbines. Thus the local political situation is likely to be key in determining the future success of wind energy projects in Reigate and Banstead. National and emerging regional policy emphasise the need to foster community involvement in renewable energy projects, and to seek to promote better understanding and acceptance of prospective developments. This indicates that a bottom up, grass roots approach to wind energy development, led by the local community, might provide a mechanism for delivering these projects.

6.42 There is also scope in the Borough for small scale turbines which can provide significant amounts of energy. These can be incorporated into development schemes and public areas. Possible potential sources of this type of scheme include local employers who have show interest in including wind turbines within their sites, both to generate electricity and to publicise their “green” credentials.

BIOMASS ANAEROBIC DIGESTION

Introduction to the Technology

6.43 Anaerobic digestion is the bacterial fermentation of organic waste in oxygen-free conditions to produce a gas with high methane content (biogas) from organic material such as agricultural, household and industrial residues and sewage sludge. The methane can be used to produce heat, electricity or both. The advantages of this approach include: the trapping of methane and its conversion to carbon dioxide, which is a less potent greenhouse gas; the use of waste products that are otherwise difficult to dispose of; and the production of compost and liquid fertilisers as by-products.

6.44 Anaerobic digestion is carried out in tanks or digesters of various sizes and is widely used in the agricultural sector in the form of small digesters on farms producing biogas to heat farmhouses and other buildings. Sewage sludge digesters are generally much larger, reflecting the centralised nature of sewage waste treatment. A similar process occurs naturally within landfill sites where organic waste materials decompose to produce landfill gas (LFG).

Key Locational Factors

6.45 A range of factors influence the location of anaerobic digestion plants as follows:

- Many plants are located close to the source of the waste, on farms or at sewage treatment works;

- Larger, centralised anaerobic digestion facilities are most likely to be acceptably located in existing industrial or sewage treatment works, or close to landfill sites. Traffic generation is a possible concern for these types of plant; and

- Anaerobic digestion is an odorous process. Measures to mitigate nuisance and proximity to sensitive receptors are key considerations.

6.46 The location of landfill gas plant is related to landfill sites.

Opportunities in Reigate and Banstead

6.47 The Borough has two sewage treatment works where the generation of energy through anaerobic digestion might be a possibility. These are located at Horley and Earlswood. At a smaller scale, there may also be potential for this type of energy and/or heat generation at local farms.

6.48 In terms of landfill sites, between 3-7MW of waste heat is vented from the Biffa landfill site, in very close proximity to the eastern edge of Redhill town centre and Holmethorpe Industrial Estate. The potential to supply this heat to future users in either of these locations could further be investigated. The concept of co-locating users with high heat demand near sources of landfill gas could be further explored in additional locations.

PHOTOVOLTAICS AND SOLAR THERMAL

Introduction to the Technology

6.49 Photovoltaics convert daylight into electricity in a semi-conductor device. Solar thermal installations use either flat plate collectors filled with water or an evacuated tube collector filled with heat transfer fluid to capture heat from the sun and heat water. Both provide small scale energy supplies for domestic and other uses.

6.50 Photovolatics can be roof mounted or free standing in modular form, or be integrated into the roof or facades of buildings through the use of solar shingles, solar slates, solar glass laminates and other solar building design solutions.

6.51 Solar water heating has been around for many years. Solar water heating systems are used in both the domestic and non-domestic market. Solar hot water heating systems can be fitted to buildings retrospectively or as a new build. There are well established mature types of solar thermal including solar matting, flat plate and evacuated tubes. The hot water generated can be used for two purposes:

- To supply heat to the heating system (although for an office the hourly requirements do not suit particularly); and.
- To supply heat to the hot water system by means of a heat exchanger.

6.52 Key considerations in the use of these installations are:

- The need to be sited in situations where they can collect the maximum amount of energy from the sun; and
- The need for sufficient solar modules to generate the required level of energy.

6.53 The recent revision to the GPDO means that the installation of solar photovoltaics and solar thermal on or within the cartilage of a dwelling house has become permitted development, and no longer requires planning consent in many circumstances. Size limitations have been set to reduce impacts on neighbours. However, these rights are more restrictive in designated areas such as AONBs or Conservation Areas.

Opportunities in Reigate and Banstead

6.54 While solar technology will not be appropriate in every location, it is likely to be suitable for a wide range of existing and new developments within the Borough, as well as for stand alone installations such as street lighting and signs.

HYDRO

Introduction to the Technology

6.55 Hydro power is available under many different applications. The two which are theoretically applicable to Reigate and Banstead are:

- Pumped storage – This is an option which is very expensive unless there is a natural reservoir with a significant drop next to it; and

- Run the river – There are rivers which run through Reigate and Banstead but the size of the rivers along with the flow rate must be high enough to make it worthwhile for the site.

6.56 Both possible hydro applications are subject to high capital costs, environmental implications and long payback times. Hydro applications generally are not considered as the most appropriate for the area.

Opportunities in Reigate and Banstead

6.57 Opportunities for small scale hydro in Reigate and Banstead are likely to be limited given the lack of watercourses with a significant drop. However, there are examples of small hydro schemes on the River Mole, for example at Bletchworth, and there may be some small scale potential for energy generation from this source.

GROUND SOURCE HEAT PUMPS

6.58 Ground source heat pumps (GSHPs) utilise the earth as both a heat source and sink to provide heating and cooling within buildings. Fluid, usually with a small quantity of anti-freeze, is circulated around pipe loops which are placed into the ground to extract heat from the earth. The heat pump takes this low grade heat out the water, increases the temperature through a compression cycle, similar to that used in a refrigerator, and produces hot water for use in building heating systems.

6.59 Heat pumps are usually electrically driven and are therefore not technically a carbon neutral heating source unless powered by renewable electricity. The advantage of

using a heat pump, as opposed to direct electrical heating is that for every 1 kW of electrical power put into the heat pump, it is typical to get 3 to 4 kW of heating out of it.

6.60 The ground loops can be laid either horizontally in the ground or placed vertically into boreholes when ground space is limited. The ground loops can also be placed into a body of water such as a lake or stream if there is a local one of sufficient size. A medium sized, new build, detached house would need two trenches approximately 45m long, 0.3m wide and 1.4m deep to accommodate the ground loop that would achieve its heating needs. Boreholes are typically between 20 and 100m and usually restricted to a maximum depth of 150 m for reason of cost. If more heat is required then additional boreholes can be dug. For example 45 boreholes, 75m deep, housing 8 km of piping, are used to achieve the 240 kW cooling load and 198 kW heating load at the Ikea Distribution Centre in Peterborough; one of the largest GSHP installations in the UK.

6.61 For domestic dwellings, GSHPs can be expected to meeting all of the hot water and heating demand for the building, however for larger buildings they can only realistically be expected to produce a proportion of the demand due to the ground lengths required. For example, a typical 3,000 m² office building could only realistically expect to have 50% of its hot water and heating demands from GSHPs.

6.62 Given the relatively low temperature output from a heat pump they are generally best suited to under-floor heating applications. Radiators can be used; however, they tend to be larger than those used in conventional boiler central heating systems.

6.63 Another advantage of heat pumps is that they can be reversed and used for cooling. The ground loops are then used to inject the excess heat from the buildings in to the earth.

6.64 Appropriate locations will be new build detached or semi-detached residential buildings with a garden.

OPPORTUNITIES FOR REIGATE AND BANSTEAD COUNCIL

6.65 There are likely to be a number of opportunities for the Council to set a good example for the development and use of renewable energy. The Council could lead the way for other organisations, demonstrating examples of best practice and showing what is feasible. This could include: improved energy efficiency in Council buildings and development; the use of sources of renewable energy to serve Council property; and the release of Council-owned land for renewable energy projects.

SUMMARY

6.66 This section has reviewed the opportunities for use of renewable energy in Reigate and Banstead, related to the development potential of the Borough identified in previous sections. The key findings are summarised in Table 6.2.

Table 6.2: Summary of Findings

Technology	Key Locational Factors	Appropriate Types of Development	Possible locations within/near the Borough	Key Issues
Biomass Combustion				
Biomass plant	Fuel availability Connection to the grid Visual and traffic impacts	Stand alone facility	Industrial areas	Identification of biomass fuel supply
Energy from waste	Fuel availability Connection to the grid Visual, traffic and odour impacts	Stand alone facility	Industrial areas	
CHP	Fuel availability Proximity to end users of heat Possible traffic, noise, visual, cultural heritage impacts	High density mixed use development . Large single users e.g. hospitals, leisure centre, industrial users	Redhill town centre Horley town centre Large institutional areas with redevelopment potential Other Industrial areas	Identification of biomass fuel supply Energy demand load profile
Micro CHP, small heat plant	None	Individual buildings, residential and other uses	Suitable for a wide range of locations thoughout the Borough	Reliability and maturity of industry/technology
Wind				
Large scale turbines singly or in small clusters	Wind resource Landscape and visual impacts Connection to the grid Noise Impacts on wildlife and	Stand alone facility	Low wind resource and extensive areas with designations will create issues. Possible areas of search include industrial areas,	Likely to be politically sensitive A community-led scheme could produce positive results

	cultural heritage Proximity to roads, rail, rights of way, power lines, Gatwick airport		rural areas of with low landscape sensitivity to change, areas adjacent to transport corridors.	
Small scale turbines	Wind resource Landscape and visual impacts Impacts on Conservation Areas/Listed Buildings	Stand alone facility or incorporated into development or open space	Suitable for a range of locations thoughout the Borough. Local employers have shown an interest	
Biomass Anaerobic Digestion				
Centralised/large scale AD	Close to source of waste, typically in/adjacent to sewage treatment works	Stand alone facility within/adjacent to sewage treatment works	Sewage Treatment Works (Horley and Earlsfield)	
Small scale AD	Close to source of waste, typically on farms	Stand alone facility within/adjacent to farm	Specific Industry with organic waste e.g farms	
Landfill gas	At/adjacent to landfill sites	Stand alone facility, within landfill site	Biffa landfill site east of Redhill town centre	
Photovolatics and solar thermal	Possible issues for listed buildings, in Conservation Areas and other designated areas	Mounted on buildings or free standing for infrastructure	Suitable for a wide range of locations thoughout the Borough	
Small hydro	Water source River flow duration characteristics Extraction license Environmental Factors e.g. Fish Connection to the grid	Stand alone facility or incorporated into development or open space	River Mole	Resource is limited.
Passive solar design	None	Best opportunities on larger sites, although many schemes can	Suitable for a wide range of locations thoughout the	

		incorporate some of the principles	Borough	
Ground source heat pumps	Most likely to be suitable for rural and peripheral locations	Residential development with large plots	Possible potential in rural and peripheral locations	

7. OVERVIEW OF DEVELOPMENT POTENTIAL

7.1 Figure 7.1 seeks to draw together the previous layers of analysis to provide a summary of development potential. The approach taken is to direct development to the locations where it can deliver a range of benefits in terms of social, economic and environmental factors. The key findings are set out below[11].

7.2 The key location which combines a range of large-scale development opportunities with relatively high public transport accessibility and a wide range of local jobs and facilities is Redhill town centre (defined as Parking Package Area 1). The development opportunities are varied, with sites providing potential for retail, community facilities and employment as well as housing. Horley town centre is the next location highlighted as having development potential and relatively good accessibility, although both are more limited than in Redhill (defined as Parking Package Area 2). Both centres are affected by noise and air quality issues adjacent to key roads and railways, and these will need to be addressed as development proposals progress. Both these centres have good potential for the use of local energy generation through CHP linked to new development.

7.3 Reigate and Banstead town centres have relatively good to moderate public transport accessibility and provide a range of local facilities on the doorstep, with Reigate providing both the best range of facilities and accessibility of the two (defined as Parking Package Areas 2 and 3). Development potential tends to be much more limited than in Redhill or Horley due to the higher sensitivity of the existing townscape. However, there may to be some development opportunities, particularly at the Horseshoe in Banstead. Both these centres are affected by noise and air quality issues which, again, will need to be addressed in development proposals. It is possible that CHP heat and power generation might be appropriate, depending on the form of development.

7.4 The inner urban area reflecting the indicative 10 minute walk-in zone around Redhill has relatively good public transport accessibility and good access to local facilities and was defined as Parking Package Area 2. This area has development potential, exemplified by the existing permissions at Hooley Lane, Holmethorpe and Park 25, and the potential identified at Linkfield Corner.

7.5 Three large urban areas have been identified which have relatively moderate public transport accessibility and accessibility to local facilities (Parking Package Area 3) and have some development potential. The development potential is likely to be generally of a small or medium scale. These areas generally fall within the indicative 10 minute walk-in zones of Reigate, Banstead and Horley, and within the indicative 20 minute walk-in zone of Redhill. Air quality and noise issues affect parts of these areas adjacent to main routes and close to Gatwick.

7.6 A number of areas are identified as outer and isolated urban areas with relatively poor public transport accessibility and poor accessibility to town centres (Parking Package Area 4). The development potential is likely to be generally of a small or medium scale, although there may be opportunities for larger scale development, for example through redevelopment of employment land. These areas are: the urban area to the west and south west of Banstead (including some of Nork, Tattenham Corner, Burgh Heath and Tadworth); Woodmansterne and Chipstead; the southern part of Reigate; Whitebushes; Salfords; and Meath Green in Horley. (The extension of the Fastway bus service to the new neighbourhoods and Redhill/Reigate will improve accessibility in the Meath Green, Salfords and Whitebushes areas, and may lead to a reclassification of these areas). Many of these areas are affected by noise and air quality issues related to main roads and rail links.

7.7 There are a number of areas which have either moderate or poor accessibility (Parking Package Areas 3 and 4) and are largely sensitive to change as they are covered by conservation areas and areas of special residential character. These are: Walton on the Hill, Kingswood, part of Chipstead and parts of Reigate. There may be small and medium scale development opportunities within these areas, although their high sensitivity to change indicates that they may be limited.

7.8 There are four outer urban areas and urban extensions with large scale development potential (defined as Parking Package Area 4). These are:

- Preston and Merstham: The regeneration of Preston and Merstham has the potential to deliver sustainability objectives and deliver significant benefits to the Borough's most deprived wards, promoting social inclusion, improving safety, the local environment, local facilities and services, and accessibility to other areas. There is a range of opportunities for development and environmental improvement including through the redevelopment and reorganisation of schools, community facilities, local centres, housing and open space. There may be potential for the use of district heating schemes, for example in areas with higher density development and a mix of uses. This study has highlighted the current

[11] The analysis of development potential should be read in the light of the comments made on the accessibility analysis set out in Section 3.

poor accessibility of these areas, and the need for improvements to public transport, pedestrian and cycle links; and

- The new neighbourhoods at Meath Green and Langshott in Horley which are allocated in the Local Plan. These urban extensions fall on the fringes of areas currently with moderate accessibility (for the Langshott extension which is closer to the town centre and station) or poor accessibility (for the Meath Green extension which is more distant from the centre and station). The provision of high quality public transport through the extension of the Fastway bus service and improvements to pedestrian and cycle infrastructure will be an important part of ensuring these are sustainable communities.

7.9 The analysis of development potential has focused on residential and mixed use development. While the larger development schemes may include provision of additional retail, health, education and community facilities, incremental residential growth will generate additional demand which needs to be met through developer contributions and other means. The Borough will need to work with partners to ensure that adequate supporting facilities are delivered. The analysis provides useful information on the most suitable locations for these facilities to ensure that they can be reached by sustainable transport modes by as many people as possible.

7.10 There is already significant committed development within the Borough, consisting of a number of existing permissions for residential development. These will form an important part of housing delivery over the next decade. The location of many of the which larger sites within walking distance of Redhill town centre means that they are well placed to benefit from the improvements that the regeneration of the centre will bring. Analysis of the location of other sites where planning permission has already been granted and their accessibility would provide useful information on the need for improvements to sustainable transport infrastructure and local facilities.

7.11 It should be noted that the above strategic analysis has focused on a number of key factors which affect development potential. There are a range of additional considerations which can play an important role in determining development potential including:

- Transport infrastructure, particularly the highways network
- Social, community, health and education services; and
- Water resources.

7.12 The Borough is undertaking a number of further studies and engaging with partners and stakeholders to explore the feasibility of delivering the strategy outlined by this study.

8. IDENTIFICATION OF BROAD LOCATIONS FOR HOUSING

INTRODUCTION

8.1 This section explores the locations identified in Section 7 above as having development potential in more detail. Locations with potential for at least 30 dwellings are analysed.

8.2 The physical, policy and delivery issues relating to each location have been briefly reviewed, with the aim of generating a broad indication of potential dwelling yield. In some locations, the Council has produced or is in the process of producing detailed policy guidance. In these locations, the detailed guidance was used as the basis for the analysis. In other locations the analysis is based on site visits and desk-based analysis.

8.3 The development of any of the schemes discussed below would need to be in accordance with planning and other policy guidance. Detailed feasibility work would need to be undertaken and a range of issues explored in detail depending on the characteristics of the site. These could include: transport and traffic; archaeology and built heritage; noise and vibration; air quality; ecology; flooding; impacts on natural resources; ground conditions; waste; visual impacts; use of renewable energy; energy efficiency; and sustainable construction.

8.4 The locations highlighted by this strategic study, which are also already included within development strategies for the Borough, are:

- Redhilll Town Centre;
- Horley Town Centre;
- Preston;
- Merstham; and
- New neighbourhoods of Meath Green and Langshott Lane, Horley.

8.5 In addition, this study has identified a number of areas with institutional/community uses which are mainly in public ownership and may have potential for redevelopment. In generic terms, potential for development has also been identified within the rest of the urban area.

8.6 There will, no doubt, be other opportunities for development which will deliver over 30 dwellings within the Borough over the next 10 years. These could include redevelopment of employment land (depending on the outcome of the Employment Land Review), redevelopment of larger community or commercial facilities, and redevelopment/conversion of large or assembled residential sites. The analysis of potential set out below should not therefore be treated as being definitive, but rather a review of selected locations with development potential which have been highlighted by this strategic study.

REDHILL TOWN CENTRE

8.7 The Council is producing an AAP for Redhill Town Centre, and the preferred options consultation was carried out between 31 May and 11 July 2006. However a comprehensive master planning process is now being undertaken which will result in these consultation stages being revised.[12] The Council will developing an AAP for the town centre, based on the consultation comments and the results of a variety studies. The key issues identified in the AAP and from the analysis of development potential are summarised below.

Physical Characteristics, Issues and Opportunities

- Redhill is the Borough's largest town centre with a range of office, retail, leisure, social and community facilities, as well as housing. It is defined as a strategic centre and regional transport hub.

- The 'Issues and Options' consultation carried out for the AAP identified a number of issues affecting the centre including: poor range and quality of shops; poor quality public realm; unattractive pedestrian gateways and traffic congestion; poorly developed evening economy; and lack of space for small office users.

- The townscape analysis carried out in the first phase of this study identified the town centre as being of low or medium-low sensitivity to change (see Section 3, Phase 1 report).

[12] Redhill Town Centre Area Action Plan, Preferred Options Consultation, 31 May – 11 July 2006, Reigate and Banstead Borough Council

- The Council has identified six areas within the town centre, all with potential for mixed use development. Details are set out within the Preferred Options Consultation document.

Accessibility and Public Transport Provision

- Redhill Town Centre is the Borough's most accessible location, with the most frequent bus and rail connections to a range of destinations, both locally and further afield, including London (see Section 7).

- Town centre residents also have easy pedestrian access to all the facilities within the centre, reducing their need to travel.

Key Policy Issues

- The preferred policy approach set out in the Preferred Options Consultation is to create: an urban environment with a unique identity; a diverse and lively centre; and improved sustainability.

- The high public transport accessibility of the area and local facilities available make it suitable for high density development with low car parking provision.

- Noise and air quality issues, related to traffic flows, will need to be addressed through the design of schemes and street network.

- The scale of development opportunities means that a substantial part of the town centre will be redeveloped. This provides the opportunity to incorporate some form of local energy generation, possibly with a local heat distribution system. Preliminary work has indicated the likely feasibility of a CHP installation and district heating, and the Council has highlighted the additional opportunity to incorporate heat from the nearby landfill site.

Delivery and Viability

- The Council is pursuing the regeneration of Redhill town centre through the preparation of the AAP which will be developed through the recently started master planning process.

- The delivery of the regeneration of Redhill town centre will involve provision of a number of infrastructure improvements including highways improvements, reconfiguration of bus facilities, creation of public spaces and provision of new

cycle and footways. The scheme will also include the delivery of community facilities and possibly local energy generation.

- The Council will seek to maximise contributions from developers, particularly at the early stages of regeneration. Residential is currently the highest value generating use in the area, and will form an important part of the regeneration of the centre.

Dwelling Yield and Summary

- Current estimates provided by the Council indicate that the regeneration of the town centre will deliver over 1,000 residential units within a range of high density, mixed use schemes.

- Redhill town centre is the most accessible location in the Borough, and provides access to the widest range of jobs and facilities. The centre is currently under-performing, and is suffering from a range of economic, environmental and social problems. Underused sites, ageing development, car parking and transport infrastructure provide a number of large scale development opportunities. The scale of redevelopment means that there is potential to transform the area into a successful, attractive, sustainable town centre. These factors combine to make Redhill town centre the preferred location for focusing mixed use development. There is a clear case for the top priority given to Redhill town centre by the Council.

HORLEY TOWN CENTRE

8.8 The adopted Local Plan includes a master plan for the comprehensive planning and development of Horley. The master plan includes policies relating to improving the vitality and viability of the town centre and the delivery of town centre housing. In November 2006, the Council adopted an SPD for the regeneration of Horley Town centre.[13] The SPD provides a development framework for the town centre, and key points from the SPD and the analysis of development potential are summarised below. (The Town Centre SPD and Horley Infrastructure SPD will be reviewed and readopted in early 2008).

Physical Characteristics, Issues and Opportunities

- Horley is a mixed use town centre serving a catchment population of around 20,000 people. The core of the town centre is dominated by retail uses, combined with offices and community facilities. There are also areas of car

parking. The area around the town centre is mainly residential, with guest house accommodation.

- The proximity of the centre to Gatwick Airport means that the southern part of the town centre is including within an AQMA. Development here may be constrained by airport safeguarding requirements (see Figure 6.2).

- The town centre has a traditional character, with 2-3 storey terraced buildings fronting the streets. Interventions aimed at improving traffic circulation in the 20th century have created areas of dead frontage, heavily engineered transport corridors, large areas of surface car park and desolate back-land areas. The public realm is of variable quality, and much requires improvement. The townscape analysis categorised much of the area as being of low or medium-low sensitivity to change (see Phase 1 report, Section 3).

- The Council has identified five areas with significant short to long-term development opportunities for mixed use development. Further detail is provided in the SPD.

Accessibility and Public Transport

- As discussed in Section 3, Horley town centre has good public transport accessibility, with bus services connecting the centre with surrounding residential areas, and rail and Fastway bus services providing longer distance connections to a range of locations including Gatwick, Redhill and London.

- Extensions to the Fastway system are included within the proposals for the development of the new neighbourhoods, and will be extended to Redhill via East Surrey Hospital.

- Town centre residents also have easy pedestrian access to all the facilities within the centre, reducing their need to travel.

Key Policy Issues

- The Local Plan and SPD set out the policy approach for the town centre. The approach focuses on: intensifying activity to create a compact, sustainable town centre; promoting the town centre for retailing and complementary uses; exploiting the centres proximity to Gatwick; creating a distinctive place; and creating an integrated transport hub around the station.

[13] Horley Town Centre Regeneration, Reigate and Banstead Borough Council, November 2006

- The good accessibility of the area and local facilities available make it suitable for higher density development with lower car parking provision.

- Noise and air quality issues will need to be addressed.

Delivery and Viability

- The SPD explains that the successful regeneration of the town centre will depend on re-provision of the centre's car parking and relocation of the community facilites to enable development in the short and medium terms.

- The regeneration of the town centre will involve provision of a number of infrastructure improvements and delivery of community facilities. The Council will seek to maximise contributions from developers, particularly at the early stages of regeneration. Residential is currently the highest value generating use in the area, and will form an important part of the regeneration of the centre.

Dwelling Yield and Summary

- The adopted SPD sets out indicative mixed use proposals for the town centre sites. Schemes are shown at up to five storeys, and there may be opportunities for landmark development to be even taller. The number of housing units achieved will depend on the detailed form of development. Current estimates indicate that around 300 units may be delivered, although there may be potential for additional development.

- The accessibility and the range of jobs and facilities available make Horley town centre a sustainable location for mixed use development. The Council has identified a number of development opportunities including surface car parks, transport infrastructure, under-used sites and ageing buildings. The redevelopment of these sites could deliver substantial improvements to the economic, environmental and social quality of the centre, and will form an important part of the successful expansion of the settlement.

LAND PREDOMINANTLY IN PUBLIC OWNERSHIP WITH DEVELOPMENT POTENTIAL

8.9 The study has identified a number of opportunities potentially provided by the redevelopment of areas which are mainly in public ownership. These might be suitable for redevelopment for a mix of uses, which could include residential development. The areas identified are the Horseshoe to the west of Banstead town

centre, the Linkfield Corner area and Croydon Road area. The findings of the site visits and desk-top study are summarised below.

Physical Characteristics, Issues and Opportunities

- These areas are characterised by large institutional or community buildings and car parking which reduce the quality of the area. Some of them were defined in the previous stage of the study as being at least partly of low sensitivity to change.

- These areas are often of poor townscape quality and some are dominated by traffic. Development may present and opportunity to improve the local environment, create a sense of place, make better use of sites and provide an improved local centre or community facilities with additional homes.

Accessibility and Public Transport Provision

- The areas are all adjacent or near to town centres and thus provide good accessibility to a range of local facilities and jobs.

Key Policy Issues

- The location of the areas adjacent to the town centres and moderate public transport accessibility make it a sustainable location for mixed use, medium density development.

- Some of these areas have historically been designated as Urban Open Land in the Local Plan. Policy Pc6 states that the Council will normally resist the loss of Urban Open Land. The policy allows for limited development of ancillary or replacement facilities bearing in mind the appropriate design and layout policy, the contribution that the area of Urban Open Land makes to the character and visual amenity of the locality, and to the functioning of any essential social, community or educational use.

- Much of the Croydon Road area is also designated as a Conservation Area which is protected by Policy Pc13. Given the open nature of the existing development and parking character of the site, redevelopment for higher density development could affect the character of the site and is a key policy consideration.

- Policy Cf1 resists the loss of community buildings, and the Plan states that redevelopment will normally only be permitted where replacement is included on the site or nearby.

Delivery and Viability

- The development of these sites may be a complex task, due mainly to the need to maintain and/or re-provide community services and facilities. Any redevelopment scheme would require careful phasing. It would be advisable for the landowner (often SCC or RBBC) to prepare a development brief to explore the development potential of these areas An assessment will need to be made as to whether a mixed use scheme could be made viable. Other sources of funding may be required, and their availability will need to be explored, as will landownership.

Dwelling Yield and Recommendations

- The edge of town centre location makes the site appropriate for medium density development. A substantial part of the site would be required for the re-provision of existing facilities, and development should respect the nature of the site as far as possible.

- The redevelopment of these areas may result in the reconfiguration of areas designated as Urban Open Land however these sites are currently dominated by development. It would make more efficient use of these valuable edge of centre sites, and could deliver a substantial improvement in townscape quality. Thus, while redevelopment may lead to an intensification of use, it is possible that the overall impact on the quality of local area would be positive.

PRESTON

8.10 The Council's Corporate Plan 2006/9 identifies Preston as a key area for regeneration. As part of the work undertaken in the area, an SPD is being prepared and a draft was produced for consultation between 29 March and 9 May 2006.[14] The SPD has been delayed to follow production of the Core Strategy and will be revised in the light of comments received and the further detailed work that is being undertaken. Current thinking based on the SPD and findings from the study of development potential are summarised below.

Physical Characteristics, Issues and Opportunities

- Preston is one of the most deprived wards in Surrey. The area is a medium/low density 1960/70's public housing estate, predominantly in the ownership of Raven

Housing Trust. The area is dominated by housing, and includes a small local retail centre and a recreation ground with sports and community facilities.

- Some of the buildings, including retail, leisure and community facilities, are of low quality and in a poor state of repair, and some areas of open space and amenity space are in need of improvement. The townscape analysis carried out in the first phase of the study classified most of the area as being of low or medium/low sensitivity to change.

- The former DeBurgh School site, which is allocated for housing in the adopted Local Plan, provides a major opportunity for redevelopment. The SPD identifies other key opportunities: Merland Rise and the recreation ground; and Cuddington Close/Longfield Crescent Area.

Accessibility and Public Transport Provision

- Public transport facilities in Preston are currently relatively poor. As set out in Section 3, only the northern part of Preston is accessible by bus to a town centre within 30 minutes, and only small pockets of the western side of the area fall within an 800m radius of a train station.

- Connections with the surrounding area are poor, including poor links to key facilities such as Asda at Burgh Heath, Tattenham Corner station and Epsom Downs.

- Given the current poor accessibility of the area, measures to encourage sustainable transport will be critical in improving the sustainability of both existing and new development. Key measures include improvements to bus services, and better pedestrian and cycle access to stations and key local facilities.

Key Policy Issues

- The key policy themes set out in the SPD are: to create positive public space and play areas; to provide high quality, affordable community facilities; to create a centralised community hub; to achieve high quality, sustainable design; and to improve access and linkages.

[14] Draft Preston Regeneration Supplementary Planning Document, 29 March – 9 May 2006, Reigate and Banstead Borough Council

Deliverability and Viability

- The SPD identifies funding sources for development and sets out a programme. Contributions from the redevelopment of the former school site will be an important source of funding for environmental and transport improvements, as well as grant and other sources.

Number of Housing Units

- The SPD indicates that the DeBurgh site could accommodate around 300 units at densities up to 60 dwellings/ha. The other two development areas are also capable of delivering new housing units. Depending on the development forms selected, these could deliver around 80 additional units.

MERSTHAM

8.11 The Council's Corporate Plan 2006/9 identifies Merstham, which is the most deprived ward in the Borough, as a key area for regeneration and to achieve a number of sustainability objectives . A draft SPD was produced for consultation between 30 June and 11 August 2006, based on a range of previous studies and consultation events. The SPD is being developed in the light of comments received. Current thinking based on the SPD and findings from the study of development potential are summarised below.

Physical Characteristics, Issues and Opportunities

8.12 Merstham is a varied settlement, and includes the high quality conservation area on the western side of the railway, streets of terraced Victorian housing to the south and a 196/70s public housing estate to the north west. While the SPD boundary includes the whole settlement, the north western housing estate is the key area for regeneration, and is now owned by Raven Housing Trust. The area, which is dominated by medium/low density housing, also has a small retail centre, a number of community facilities and open spaces.

8.13 The townscape analysis classified area as generally being of low sensitivity to change (see Phase 1 report, Section 3), and identified the mixed use core as having most development potential (see Figure 2.1). This is in line with the draft SPD which identifies the Portland Drive, Purbeck Close and Nailsworth Crescent area as being in need of improvement and presenting a development opportunity.

8.14 Some of the community facilities are updated and in need of repair, while many of the area's open spaces are of poor quality and are underused. This provides the

opportunity to improve the quality of spaces and facilities, and deliver additional housing units.

Accessibility and Public Transport Provision

8.15 Section 3 highlighted the poor accessibility of much of Merstham. Data provided by SCC indicates that Merstham is not well served by bus services. Most of the area is outside the 30 minute travel contour to Redhill town centre. However, some of the regeneration area falls within 800m of Merstham station, which provides direct services to local and more distant destinations including Redhill, London and Gatwick. The SPD highlights the poor connections to the station, highlighting the need for improvements for pedestrians and cyclists.

Key Policy Issues

8.16 The draft SPD sets out the following key policy themes: to create positive public space; to provide high quality, affordable community facilities; to create a centralised community hub; to improve the mix of housing tenure; to achieve high quality, sustainable design; and to improve access and linkages.

Delivery and Viability

8.17 In terms of phasing, the draft SPD states that it is likely that the Purbeck Close area including the garages will be the first site to be redeveloped.

8.18 It is currently envisaged that financial contributions will be sought from developments within the SPD boundary to assist in the delivery of environmental and transport improvements. Funding will also be sought from the redevelopment of existing community facilities for their reprovision.

Dwelling Yield and Summary

8.19 The SPD identifies a number of sites which will or could deliver additional housing units. These are: the refurbishment/extension of the Portland Drive flats and shops; improvements to Nailsworth Crescent; redevelopment of Purbeck Close garages; redevelopment of a number of community facilities (all of which will be reprovided locally) including the GP surgery, library, church youth centre and selected open spaces. Current estimates envisage that the regeneration of the area could deliver around 100 units. The need for improvements to public transport and the pedestrian and cycle network is highlighted.

NEW NEIGHBOURHOODS AT MEATH GREEN AND LANGSHOTT LANE, HORLEY

Current Proposals

8.20 The 1994 Surrey Structure Plan identified Horley as a location where provision could be made for 2,600 new homes. The Council adopted a First Alteration to the Borough Local Plan in April 2005 which includes a master plan for Horley, including policies for the development of the new neighbourhoods. These neighbourhoods are planned to deliver 2,280 units by 2016, with the remainder of the allocation being delivered within the existing urban area.

8.21 The two new neighbourhoods include proposals for new open spaces; sites allocated for new primary schools; new local shops; new community facilities and improved infrastructure provisions such as an improved public transport network and more frequent buses. A riverside green chain and town park are also proposed.

8.22 The new neighbourhoods are currently at the following stages in the development pipeline:

- The north east sector at Langshott - outline and infrastructure permissions have been granted, more detailed applications for the phased development of the site will now be ongoing as the site is developed. The developers are anticipating starting infrastructure works on site in September 2007, with the first home completions autumn 2008; and

- The north west sector at Meath Green – the outline planning application was approved in December 2007. Work on site is anticipated to start winter 2008, with the first completions in late 2009.

Accessibility and Public Transport Provision

8.23 The new neighbourhoods are located on the northern fringe of Horley. They fall outside the current 20 minute bus contour for the town centre and are also beyond the 10 minute walk-in zone of Horley and Salfords stations and Horley town centres. The proposals for the new neighbourhoods include a high quality bus network which will consist of an extension to the Fastway system which already serves the town centre. All residential units will be within a five minute walk of a bus stop, and a comprehensive cycle and pedestrian network is planned.

Dwelling Yield and Recommendations

8.24 The new neighbourhoods are planned to deliver 2,280 units. The new neighbourhoods have been comprehensively planned through the Horley master plan to deliver high quality, sustainable urban extensions.

REST OF URBAN AREA

8.25 As explained in Section 2, the rest of the urban area is also likely to have a range of development opportunities which will be realised over the time frame of the Core Strategy. Some of these will have potential for the development of at least 30 units. Further work is currently being carried out by the Council to explore these opportunities.

9. IDENTIFICATION OF CONTROLLED PARKING ZONES

INTRODUCTION

9.1 One the objectives of this study is to inform the identification of suitable areas for Controlled Parking Zones (CPZs). This section provides background information on CPZs, sets out the policy background including national, regional, and local policies, and finally identifies areas that have potential for the introduction of CPZ.

9.2 A CPZ is an area where it is necessary to cover all roads with either waiting restrictions or parking places. The waiting restrictions generally cover lengths of roads and junctions where it is dangerous to park or where it is necessary to allow free passage of vehicles. The parking places, normally time limited, can either be provided free of charge or a fee levied. As part of a CPZ, special arrangements for residents may be accommodated. This helps keep roads free from dangerous parking and gives priority to residents and local businesses, who must display a parking permit or voucher.

LOCAL ISSUES AND CURRENT RESTRICTIONS

9.3 As stated in Surrey's Local Transport Plan, the Reigate and Banstead Borough has traditionally performed a dormitory role with a high proportion of workers travelling by train to jobs in Greater London. However, over the last 40 years employment growth in the area, both in the town centres and in the form of headquarters campus developments has created a situation whereby there is now significant in-commuting to the borough, largely by car. Reigate and Banstead's draft Parking Management Plan notes the high levels of congestion caused by high population density, the proximity of London and international airports and high car availability levels.

9.4 SCC's interactive map[15] provides useful, detailed information on waiting and parking restrictions in the Borough. The Borough's town centres of Redhill, Reigate and Horley are comprehensively covered by waiting restrictions. A new CPZ has recently been implemented in the Horley Gardens Estate adjacent to Gatwick Airport to allow residents to park more easily near their homes and prevent non residents like commuters and holiday makers from using residential roads as car parks. There

[15] http://surreymaps.surreycc.gov.uk/public/viewer.asp

are also a number of areas where more limited waiting and parking controls currently exist. These include Banstead town centre and areas around Kingswood and Tadworth stations. There are parking issues at a number of stations where current parking provision is insufficient to meet demand (e.g Banstead). Providing parking is an important element in encouraging people to use the train, and this issue should be explored further.

LOCAL POLICY FOR ON-STREET PARKING CONTROL

9.5 The key policy documents setting out local policy for parking control are SCC's "A Parking Strategy for Surrey" which was adopted as an SPG to the Structure Plan in 2003 and Reigate and Banstead's draft Parking Management Plan.

9.6 SCC's Parking Strategy covers all aspects of parking across the County and provides a framework within which District Councils are producing their own parking management plans. The approach focuses on the definition of Parking Package Areas which classify areas according to their accessibility to different types of town centre and public transport. An indicative classification of Parking Package Areas for Reigate and Banstead was set out in Figure 3.7.

9.7 Within examples of public on-street parking management measures, the Strategy allocates CPZs to Parking Areas 1 (regional or major town centres with high public transport accessibility) and 2 (larger town centres and periphery of Area 1 centres).

9.8 With regards to on-street parking measures, the Parking Strategy states the following:

- Controls are most likely to be required in town centres, commercial areas or around railway stations where competition for spaces is greatest;
- Where competition for spaces occurs, priority will normally be given to short stay parking. Long stay commuter parking is to be discouraged in town centres as it may prevent short stay parking vital to local shops and businesses;
- Parking controls should be applied selectively to address specific conflicts and not be used unnecessarily. Limited pay and display spaces close to neighbourhood shops may provide adequate short stay spaces without the need for more extensive controls; and
- The introduction or extension of on-street parking charges must reflect off-street changes and enforcement regimes. A consistent charging policy across all types of parking will enable priorities to be more readily determined.

9.9 Reigate and Banstead's draft Parking Management Plan includes the following overall aims:

- Maintain and enhance economic centres;
- Reduce the desirability of travelling by car;
- In residential areas give priority to residents for on street parking space; and
- Review and monitor waiting restrictions and parking provision on a regular or cyclic basis to take account of change and development.

SUITABLE LOCATIONS FOR CPZS

9.10 The Parking Strategy for Surrey explains that the parts of the Borough classified as Area 1 and 2 are likely to be the most suitable locations for CPZs. Figure 3.7 identified these areas as:

- Area 1: Redhill Town centre; and
- Area 2: Reigate and Horley town centre and the inner residential area adjacent to Redhill Town centre.

9.11 The Parking Strategy states that CPZs are likely to have more limited applications in Parking Package Areas 3 and 4, where they are typically used in response to specific problems.

9.12 The draft Plan defines the following Parking Package Areas: Reigate; Redhill; Horley; Banstead; and village centres/rural rail stations, and sets out ideas for parking controls within them, although the draft Plan does not mention which category of Parking Package Area each falls into. The draft Parking Management Plan mentions the possible introduction of CPZs in Reigate, Redhill, Banstead and Horley. In each case, the draft Plan states the objective of investigating the introduction of CPZs or waiting restriction as appropriate to reduce long term parking by commuters in residential areas. The draft Plan states that a great deal of study and consultation will be required in order to meet the Plan's objectives. The following areas are prioritised:

- The feasibility of charging for on street parking in Redhill, Reigate, Banstead and Horley;

- The continuation of the trial CPZ schemes in Horley and Reigate;

- The adoption of a method for prioritising other areas to be reviewed for CPZ schemes.

9.13 The following criteria are suggested as a way of prioritising areas for CPZ review:

- Areas where an existing problem has been identified and there is a history of complaints. The draft Parking Management Plan states that there is widespread street parking by visitors on residential roads around Reigate town centre and station, and that a CPZ is planned for the northwest Reigate area. A similar problem is noted for Redhill town centre. There may also be more localised problems around Banstead town centre and some of the Borough's suburban railway stations;

- Areas around major and larger town centres. Redhill is the Borough's major centre, performing a strategic role within the retail hierarchy. Reigate and Horley are smaller order centres, with Banstead being the smallest in the Borough;

- Areas with existing CPZs or comprehensive waiting restrictions where significant development is planned which will change the supply of and demand for on street and off street parking. These are Redhill and Horley town centres where regeneration proposals include redevelopment of car parks and delivery of a range of mixed use schemes; and

- Areas with existing CPZs or comprehensive waiting restrictions where improvements to sustainable transport infrastructure are planned which will reduce the demand for parking. Again, Redhill and Horley town centres are the key locations where improvements are planned to public transport infrastructure and the pedestrian network.

9.14 The above discussion suggests that Redhill, Horley and Reigate town centres and peripheral residential streets are the key locations for CPZ review.

9.15 Large scale regeneration proposals are being prepared for Redhill and, to a lesser extent, Horley. These areas will see significant change over the next decade. Parking policy will need to be developed in parallel with all the other proposals, under a comprehensive approach. The level of change planned means that a particularly flexible approach to on-street parking management will be required. This should be considered alongside proposals for re-organising off-street parking and car parking standards and should be a current, on-going process.

KEY ISSUES IN THE IMPLEMENTATION OF CPZS

9.16 Before introducing or changing a CPZ, it is important that a feasibility study is carried out. This should include parking duration surveys within, and for a limited distance outside, the study area in order to identify the demand for parking, the type and duration of the competing demands and the period(s) where finding a parking space is a problem. Assessment will need to be made of the future demand generated by significant development.

9.17 Thorough and meaningful consultation is critical and is undertaken where CPZs are introduced or amended. It should include those people who may be affected by the scheme including all residents and businesses in the area directly affected, and those who may be affected by displaced parking.

10. DEVELOPMENT OF A 'SOUND' POLICY FRAMEWORK

INTRODUCTION

10.1 The study has examined the development potential of the Borough in the context of the emerging planning policy framework, and provided a comprehensive assessment of the Borough's landscape and townscape. A range of policy recommendations flow from the study findings, and these are set out below.

OVERALL SPATIAL STRATEGY

Introduction

10.2 The Community Plan sets out the following key priorities for Reigate and Banstead:

- Environment - Encouraging people to use, enjoy and protect the Borough's countryside, open spaces and parks; encouraging recycling and managing waste to reduce the need for landfill sites; making it easier and safer for everyone to travel around the Borough; leading more sustainable lifestyles;

- Neighbourhoods – Improving Redhill, Horley, Preston and Merstham to meet the current and future needs of local people; Working to develop homes to suit the changing needs of the Borough's population;

- Communities – Continuing to make the Borough a safe place; providing opportunities to all to enjoy active and healthy lifestyles, working together to create strong and inclusive communities; and

- Services – Ensuring services are well planned and responsive to change; improving access to services, helping everyone to make informed decisions about services.

10.3 Reigate and Banstead's emerging spatial strategy seeks to provide sustainable housing and job growth, integrating the necessary infrastructure for delivering development, whilst safeguarding and enhancing key environmental, social and

economic assets and resources. The strategy is already being developed and evolving through the existing Local Plan, the 2006-2009 Corporate Plan and the Community Plan. This includes the continued protection of the Green Belt and takes into account issues of climate change and the carbon agenda, flood risk, biodiversity and the promotion of an 'urban renaissance'. The overall aim is to create well designed places and spaces, promote social inclusion, with new development integrated with the environment within which it is located, contributing to the growth of the local economy and encouraging a modal shift by promoting sustainable alternatives to the private car.

Policy Recommendations

10.4 The study has provided a spatial analysis of development potential as illustrated in Figure 7.1 and summarised in Section 7. Building on the study findings, it is recommended that the overall spatial strategy include the following elements:

- A significant proportion of the Borough's housing allocation will be delivered through two comprehensively planned new neighbourhoods in Horley and a number of large sites with planning permission including Hooley, Water Colour and Park 25;

- Further residential development should be directed to the most sustainable locations, both through designating new housing allocation sites in accessible locations (e.g. Redhill and Horley town centres), and by setting a range of densities and car parking standards across the Borough's urban areas, having regard to accessibility and character (see Figure 7.1). The current and future levels and capacity of infrastructure should also be considered, building on the findings of other studies (see Appendix A);

- Additional allocations should also be focused on those areas in the Borough where regeneration can provide a step change to achieve a number of social, economic and environmental objectives. These are Redhill town centre, Preston and Merstham. There may also be potential for Horley to accommodate additional development;

- Mixed use development should be focused in Redhill and Horley town centres, where potential has been identified to enhance their role as focal points for employment, retail, leisure, cultural, community and residential uses. The regeneration of Redhill town centre will enhance its role as a centre of strategic importance and a regional transport hub; and

- Continuing to plan for provision of future growth within the Borough's existing urban areas, thereby safeguarding the Green Belt and the Borough's valued landscape character areas (see paragraph 1.36); and

- The character of the area and the level of amenity enjoyed by residents in many areas of the Borough are highly cherished. To protect these high quality areas, development must be carefully controlled to ensure that it respects the local area. In contrast, there are some areas where there are pockets of comparative deprivation and the environment is of lower quality. These are the locations where development can deliver a range of social, economic and environmental benefits, and the locations to which appropriate, high quality development and investment should be guided.

POLICY RECOMMENDATIONS FOR TOPIC AREAS

10.5 The study findings point to a range of recommendations for various topic areas. The topics covered, the issues raised by the study, policy recommendations and the need for further work to enhance the evidence base are set out in Table10.1. The majority of the recommendations relate to the Core Strategy, although the wide ranging nature of the recommendations mean that they are likely to be relevant to a variety of planning and other policy approaches.

Table 10.1: Policy Recommendations

Topic	Key Issues	Policy Recommendations	Enhancing the Evidence Base
Development Density and Accessibility	The review of the policy context summarised in Section 1 highlighted the following key issues: • The need to focus development in the most sustainable locations taking into account character, accessibility and infrastructure; • Issues relating to sustainable transport are also a key theme, including maximising opportunities to reduce reliance on the car; and • The need to make the best use of brownfield land through higher density, mixed use development.	It is recommended that the Core Strategy include a policy setting out density ranges for different locations, related to a Key Diagram or separate map based on the approach shown in Figure 7.1. This policy should also set out or provide the basis for establishing Parking Package Areas and graduated parking standards across the Borough. The approach should be based on SCC's Parking Strategy SPD, and could be expressed as a matrix, similar to that shown in Appendix C. The policy will need to take into account recent guidance in PPS3 on residential parking provision concerning consideration of likely levels of car ownership, design and efficient use of land. A key issue highlighted by the accessibility work is the policy approach set out in the preferred options for the Core Strategy of focusing high density development along the A23 public transport corridor. Further detailed analysis is required to provide PTAL ratings and/or a revised assessment of public transport accessibility including planned public transport improvements and to define accessibility in more detail. However, the findings of this study suggest that high density development is unlikely to be appropriate in most locations along the A23 corridor, except in close proximity to Redhill town centre. The study suggests that if the public transport improvements improved the accessibility classification to Area 3, medium/low density development would be	This study has provided a strategic policy approach to residential density and parking standards. Before being finalised and submitted for examination within the draft Core Strategy, the approach should be tested and refined as follows: • Findings of other studies should be used to inform the approach including the East Surrey Strategic Housing Market Assessment, the Redhill Town Centre Masterplan and Growth Point transport studies, the Housing Land Availability Assessment and the Preston Masterplan; • If possible, the analysis of Parking Areas should be refined through: - Review of the information on public transport accessibility to town centres by SCC and use of PTAL information if available/considered appropriate;

		appropriate. It is recommended that RBBC complete its Parking Management Plan, to include a commitment for Parking to be managed under the Parking Package Area approach, in accordance with the recommendations in Section 9 of this report. It is also recommended that the Council revise its Parking Standards (as set out in Appendix 3 of the Borough Local Plan 2005) in the form of an SPD to reflect the graduated parking standards approach recommended in this report and in line with PPS3.	- Detailed analysis of bus services and usage which would provide useful information to further inform analysis of accessibility to town centres (including park and ride); - for town centres and stations based on the pedestrian network to provide better information on pedestrian accessibility; - Analysis of cycle networks and facilities and patterns of use; and • If it is not possible to make some or all of these refinements to the definition of Parking Package Areas, consideration should be given to using the indicative boundaries at a strategic level, and setting out the detailed criteria for assessment of a location's accessibility to enable developers to make detailed assessments for individual sites; • There should be public consultation on the approach, as part of the process for preparing the Core

			Strategy.
Encouraging Sustainable Travel	As set out above, the review of the policy context in Section 1 highlighted the issue of encouraging travel by sustainable modes. This includes the need to improve the infrastructure and facilities for public transport, walking and cycling. There are also issues related to how these improvements can be delivered, particularly through developer contributions. The design of development is also an important issue in terms of encouraging sustainable travel. Integrating Green Infrastructure Networks with cycling walking networks	It is recommended that there be a Core Strategy policy setting out the intention to continue working collaboratively with SCC, HA, Network Rail and private sector to deliver improvements to bus, rail, pedestrian and cycle infrastructure. Priority areas highlighted by the study for future consideration include: • Improvements to public transport in less accessible locations where major development is proposed (the new neighbourhoods at Horley and the regeneration areas of Preston and Merstham); • Improvements to transport infrastructure to and within town centres – particularly interchanges at Redhill and Horley Town Centres; • Improvements to accessibility to town centres including: improvements to the pedestrian network, particularly network, particularly within 20 minute walk-in zone for Redhill, and the 10 minutes walk-in zones for Horley, Reigate and Banstead; improvements to key cycle network infrastructure serving town centres; improvements to bus services to town centres including improvement to services and infrastructure for urban areas currently outside the 30 minute zone (Tadworth, Walton on the Hill and Kingswood);	Detailed discussion with partners and a range of further studies/feasibility work will be required to refine and agree the priorities for improvements to sustainable travel facilities. Possibilities for linking parking provision with the Fastway extension, to provide access to town centres, could be explored. The issue parking provision at rail stations could also be investigated.

		• Improvements to accessibility to stations including the pedestrian network within the 10 minute walk-in zones (particularly for Banstead, Tadworth, and Merstham stations) and the key cycle network; and • Improvements to public transport between major settlements – particularly the north-south links both rail (London to Brighton) and the Fastway bus services. In considering the possibilities for these types of improvements, both capital and revenue funding implications will need to be explored. It is recommended that design issues related to encouraging sustainable travel be included with a Core Strategy design policy for the Borough. This should cover issues such as reduced car parking provision, providing high quality facilities for cyclists and the implementation of Travel Plans. In considering applications, the Council in liaison with SCC should ensure that adequate transport infrastructure is in place to support the proposed development including roads, footways, cycleways and public transport. The Council will ensure that developers contribute to improvements to transport infrastructure as appropriate, with a focus on encouraging sustainable travel. It is recommended that this form part of a Core Strategy policy on planning obligations, with a supporting SPD, which maximises opportunities to secure funding towards schemes to promote sustainable travel.	

Landscape Character and Management	The need to protect and enhance landscape character is a key theme in national, regional and local policy. As highlighted in Phase 1 of this study, much of the Borough's rural areas are of high sensitivity to change, and as set out in Section 2 of this report, the entire rural area is protected by some form of planning, landscape or nature conservation designation. The vast majority of the rural area is designated as Green Belt, and work carried out by the Borough on housing delivery suggests that there is currently no requirement to review the existing boundary. Development will therefore be focused within the existing urban area. However, the need for flexibility within the rural area is recognised, particularly in relation to development which will allow rural diversification and the delivery of renewable energy.	The existing policy approach set out in the Local Plan seeks to protect the Borough's valued landscapes through their designation as AONB and AGLV, with a policy attached limiting acceptable development generally to agriculture, forestry and informal recreation. National guidance provided by PPS 7 advocates criteria-based landscape character policies with supporting guidance, to replace the traditional reliance on Local Landscape Designations where these are considered too blunt an instrument for delivering sustainable development in landscape terms. The recently completed review of the Surrey's AGLV recommends that following extensive review, these areas either be incorporated into the Surrey Hills AONB, or be covered by a policy based on a Borough wide landscape character assessment. The study identifies the parts of Reigate and Banstead's AGLV which are considered suitable for inclusion within the AONB, and highlights other areas where further assessment is required. The formal review of the boundary of the AONB will be a lengthy and detailed process, and in the interim the study recommends that the AGLV be retained until this has taken place, with further assessment of particular identified areas to establish if they are sufficiently robust to be retained as AGLV. Is it recommended that the Phase 1 landscape and townscape character assessment be used to underpin a	The Phase 1 Landscape and Townscape Character Assessment and the Local Distinctiveness Guide both provide information to help understand the distinctive character of landscapes and townscapes within the Borough, and it is expected that both will be treated as a material considerations in planning decisions. A variety of other studies may provide an enhanced understanding of the character of the Borough's landscape and townscape. These could include: • Landscape Design Guidance; • Settlement Studies; • Local Landscape Studies; • Historic Environment Characterisation Studies/Conservation Area Character Appraisals; • Area Based Regeneration Initiatives; and • The Appropriate Assessment of the

		criteria-based approach to local landscape maintenance and enhancement. A Core Strategy policy should set out the criteria for development which could include: • Proposals for development outside urban areas should be informed by the distinctive landscape characteristics and sensitivities to change identified in the Landscape Character Assessment; • Development to be permitted where it can protect, maintain and enhance: - Landscape character and local distinctiveness of the area (including its historical, biodiversity and cultural character and its tranquillity); - The distinctive setting of and relationship between, settlements and buildings and the landscape including important views. - The function of watercourses, woodland, trees, field boundaries, vegetation and other landscape features as ecological corridors - The special qualities of rivers, waterways and their surroundings; and - The topography of the area including sensitive skylines, hillsides and geological features. This approach could be supplemented by further guidance on landscape character which could take the following forms:	Special Area of Conservation and the Biodiversity Action Plan. In addition, it is recommended that targeted analysis be carried out of the parts of the AGLV defined by the Countywide review as “amber” or “red” areas where further assessment is required to substantiate their continued inclusion in the short term within the AGLV, and their longer term status either within or outside the AONB. Findings of the Strategic Flood Risk Analysis and further work on flooding will also inform policy on landscape character and management.

		• An SPD providing guidance on how the character of each Landscape Character Area identified in Phase 1 of this study can be protected, conserved and enhanced; and • Other existing character studies and proposed studies that provide part of the evidence base for landscape and settlement character. The Core Strategy policy should also include encouragement for landscape enhancement schemes, submission of landscape design statement with planning applications and provision of landscape-scale management plans/strategies. It is recommended that the Core Strategy also include a specific criteria-based policy for the AONB and AGLV, either as part of the Borough wide policy or as a sister policy. The policy should explain that the prime consideration is the conservation and enhancement of these areas, and set out criteria for acceptable development which could include: • Appropriate re-use of existing buildings; • Development appropriate to the economic, social and environmental well-being of the AONB or AGLV; • Development to be designed to the highest standards and not detract from the special qualities of the AONB or AGLV; and • Development will facilitate the delivery of	

		management plan objectives.	
Townscape Character	The development of a high quality urban environment is a key theme in the policy agenda, as is making the best use of urban land. Phase 1 of this study identified a range of pressures and issues affecting the character of the Borough's urban areas including: • Infill, redevelopment and extensions can alter the traditional layout and character of areas and lead to the loss of trees; • On-street and forecourt parking can dominate street scenes, undermining character and contributing to traffic issues; • Standard approaches to the public realm can erode distinctive character; and • Some amenity spaces lack function or visual interest.	It is recommended that a criteria-based townscape policy be included in the Core Strategy underpinned by the townscape character assessment. The policy should include reference to the following main components: • The overall approach should be to promote local distinctiveness in all urban areas and protect or enhance townscape character; • The Council should require a high standard of design in all locations and in all aspects of proposals. Proposals should respond positively to the appearance, uses and function of the surrounding area, reflecting or enhancing local character and local distinctiveness; • Areas with high sensitivity to change should be protected, conserved and where possible enhanced. Development should be of a layout, scale, massing and use materials which complements the existing high quality local environment, and parking should be carefully designed to respect local character. • The overall aim should be to encourage higher densities to make better use of urban land and to match the density of development with the accessibility of the location. This approach is exemplified by the matrix shown in Table 10.2. However, there is a need to balance this against the need to protect the character and residential amenity	Studies which will provide an enhanced understanding of the character of the Borough's townscape are listed above.

		of an area. It may be possible to increase densities while respecting the existing landscape framework, built form and massing, for example through development of a block of apartments with a similar footprint, volume, building line and height to adjacent properties. However, careful attention should be paid to the impacts of increased density, and there may be locations where increases in density could cumulatively undermine the character of the area (e.g. RASCs). This issue requires further detailed study ; • The Council should use the development opportunities within Redhill and Horley town centres, Preston and Merstham to deliver a significant improvement to the quality of the townscape and local environment. In Redhill in particular, the scale of development opportunities provides the potential to transform the centre; • In other locations which have medium-low or low sensitivity to change, the Council should encourage schemes which enhance the townscape of the area. A change in layout, scale and massing may be appropriate if clear benefits in townscape can be delivered focusing on issues like: - Improving surveillance and enclosure of streets and open spaces; - Introducing an appropriate mix of uses; and - Making better use of land including poorly maintained amenity space.	

		The Core Strategy policy should be supplemented by an SPD providing guidance on how the overall character of Townscape Areas identified in Phase 1 can be protected, conserved and enhanced. This could be incorporated into broader design guidance and could draw on the Local Distinctiveness Guide. Additional studies such as Conservation Area Appraisals will also be useful in further informing townscape character. In line with the justification in PPS3, it is recommended that the Core Strategy include specific policy reference to the Residential Areas of Special Character (RASCs), either as part of the Borough wide townscape policy, or as a sister policy. This should be a criteria-based policy which focuses on protecting, conserving and enhancing the special features of the RASCs (large plot sizes, tree cover, spacious gardens, generous spacing between buildings, high levels of privacy, etc.) A similar policy approach will be required for Conservation Areas. To support the above landscape and townscape policies, it is recommended that local character considerations should also be incorporated into the following policies: • Design Policy – to include reference to character, local distinctiveness, design process and use of design statements; • Biodiversity and Green Infrastructure Policy – to include reference to Biodiversity Action Plan targets in ways that reinforce local townscape character; and • Heritage Policy – to include reference to listed buildings, Conservation Areas, Scheduled	

		Monuments • Regeneration policy – to include reference to creating and enhancing character and local distinctiveness	
High Quality, Sustainable Design and Construction	The study has identified a number of issues which have implications for the design of schemes: • Noise and air quality issues particularly around major roads, railways and close to Gatwick airport; • The wide range of opportunities and options for incorporating renewable energy technology within developments; • The widespread nature of high quality environments in the Borough which provide a cue for local, high quality design and conversely the areas with low sensitivity to change where new development can improve townscape quality; • Incorporating consideration of biodiversity (existing and new habitats and green corridors) into the design of new	It is recommended that a Core Strategy policy should set out the requirement for high quality, sustainable design and construction for all new development. A wide range of issues will need to be included. Based on the study findings, the Policy should emphasise: • That the Council will require schemes to capitalise on opportunities to protect and/or enhance local environmental quality; • Development should achieve high standards of energy efficiency and incorporate renewable energy technology as far as possible; • The need for development to be designed at an appropriate density, scale and massing to reflect the local area's character and accessibility; and • The need for noise and air quality issues should be considered, and schemes carefully designed to ensure that an acceptable living environment is created. A wide range of other issues are also likely to be important including resource use, materials, waste strategy, flood risk and land contamination. The policy should be supported by a Sustainable	

	development; and • The accessible locations within the Borough where increases in density and reductions in parking provision are appropriate.	construction SPD.	
Renewable Energy	Key issues highlighted by this study include: • The need to maximise the potential for encouraging the local generation of energy from renewable sources to address climate change; • Issues relating to the viability of different types of technology for different scales and forms of development; and • The possible tensions between maintaining landscape and townscape character and maximising opportunities for use of renewable energy.	It is recommended that policies be included in the Core Strategy covering two key areas: 1) Energy efficiency and integration of renewable energy into new development; and 2) Stand alone renewable energy schemes. In terms of 1) above, policy should: • Seek to eliminate/minimise net carbon emissions from new development by a combination of meeting the highest possible energy efficiency standards and offsetting any remainder through balance trading; • Encourage the incorporation of CHP or district heating/cooling where the heat/electricity demands are of such a scale that its viability is supported. Potential areas have been identified which as a result of their density (approx 50dph) and mix of uses, have characteristics likely to support its development. Within these areas all new development should connect to a district heating/cooling network where one exists, or be designed to enable future connection.	Further research is required into: • More detailed studies into the possibilities for the development of wind turbines to explore the South East Plan's view that all local authorities in the South East will accommodate at least one wind development over the next two decades. These studies may include community consultation and discussion with potential developers. • Detailed examination of the Borough's industrial and employment areas to investigate potential for renewable energy development • The scale of renewable energy that may be acceptable and possible at a certain scale in particular areas, using criteria specific to those areas.

		In terms of 2) above, policy should: • Encourage the development of stand alone renewable energy schemes to aid the achievement of sub-regional targets. More detail should be contained in an SPD; and • Promote the use of biomass, and supportive infrastructure, including support the extension of existing and/or the creation of new woodlands and the cultivation of short rotation coppice. Policy should also includes a strategic objective to designate Redhill Town Centre as an Energy Action Area (EAA). It will also be important to acknowledges the possible tensions between maintaining landscape and townscape character and maximising opportunities for use of renewable energy, and to give guidance on how these issues will be resolved.	• Working with the SECBE on project to look at carbon offset fund; • Redhill and Preston renewable energy /CHP studies included within the New Growth Point work; • More detailed identification of boundaries of CHP policy areas, especially for Redhill and Horley town centres. The further detail should be based on an energy strategy for each area, identifying baseline energy use. • Re-visit Connective Energy study relating to Biffa site for basis of Redhill Energy Action Area • Present study into the supply of biomass woodfuel due for completion in 2008 (expected to identify substantial wood reserves from construction waste) • SEP funded Gatwick Diamond study into the establishment of a Redhill-focussed Local Carbon Offset Trust • Identify the wider issues related to achievement of an Energy Action Area in Redhill (these could include

			generating energy from organic waste, possible development of a renewable energy scheme at the Copyhold site, links to Biffa site) • Setting up an appropriate partnership to develop the vision, parameters and delivery of the Energy Action Area • Green Infrastructure work to include identification of areas suitable to direct the development of new woodlands/short rotation coppice, especially where this will meet wider objectives.

Appendix A: Policy Context

National Planning Guidance and Statements
PPS 1: Delivering Sustainable Development, 2005
PPS 3: Housing, 2006
PPS 6: Planning for Town Centres, 2005
PPS 7: Sustainable Development in Rural Areas, 2004
PPS 12: Local Development Frameworks, 2004
PPG 13: Transport, 2001
PPS 22: Renewable Energy, 2004 and Companion Guide
PPS 23: Planning and Pollution Control, 2004
PPG 24: Planning and Noise, 1994
PPS 25: Development and Flood Risk, 2006

Regional Plans
The South East Plan, Draft 2006
Harnessing the Elements, 2003
Regional Transport Strategy

Surrey County Council/County-wide
Surrey Structure Plan, 2004
Surrey's Second Local Transport Plan 2006/7-2010/11
A Parking Strategy for Surrey (SPG), 2003
Surrey Hills AGLV Review (2007)

Reigate and Banstead Borough Council
Your Community Plan, Taking Reigate and Banstead to 2020, 2007
RBBC Borough Local Plan, 2005
Reigate & Banstead Local Distinctiveness Design Guide, 2004
Horley Town Centre Regeneration SPD, 2006
Draft Merstham Regeneration SPD, 2006
Draft Preston Regeneration SPD, 2006
Reigate & Banstead Borough Council New Growth Points Bid, 2006
Local Development Framework:

- Core Strategy Preferred Options Consultation, 2006
- Redhill Town Centre Area Action Plan Preferred Options Consultation, 2006
- Housing Delivery Background Paper, 2006
- Housing Trajectories, 2007
- Sustainability Appraisal and Strategic Environmental Assessment of the Local Development Framework, Scoping Report, October 2005
- Draft Affordable Housing Viability Study, 2007
- Draft Transport Statement, 2007
- Draft Strategic Flood Risk Assessment, 2007*
- Retail and Leisure Needs Assessment, 2007
- Draft Strategic Housing Market Assessment, 2007*
- In addition, the following studies are currently being undertaken: Economic Market Assessment incorporating an Employment Land Review, Draft Parking Management Plan, a review of community facilities and infrastructure needs, an open space assessment, an Appropriate Assessment of the Special Area of Conservation* and a study of gypsy and travellers' accommodation needs.

*Study being carried out jointly with neighbouring authorities

Appendix B: Method for Defining Parking Package Areas

Scores for Parking Package Areas were based on the method set out in SCC's Parking Strategy and were derived by calculating the sum of:

- A score reflecting the place in the retail hierarchy of the town centre to which the location related: Redhill = 3, Reigate and Horley = 2, Banstead =1

- A score for pedestrian accessibility to the town centre for Redhill (0= outside indicative 30 mins walk-in zones, 1=between 20 and 30 mins indicative walk-in zones, 2=between 20 and 10 mins indicative walk-in zones, 3= within 10 mins indicative walk-in zone) and for other centres (0=outside indicative 20 mins walk-in zone, 1=between 20 and 10 mins indicative walk-in zones, 2= within 10 mins indicative walk-in zone)

- A score for public transport accessibility: 0= outside 30 mins public transport contours to a town centre and outside 10 mins indicative walk-in zones to stations; 1=between 30 and 20 mins public transport contours to a town centre and outside the 10 mins indicative walk-in zone to a station; 2= between 20 and 10 mins public transport contours to a town centre and/or within the 5-10 mins indicative walk-in zones of a station; 3= within 10 mins public transport contour to a town centre or 5 mins indicative walk-in zone of a station; 4= within 10 mins public transport contour to a town centre and 5 mins indicative walk-in zone of a station

The above three scores were added to produce a total. These totals were used to allocated Parking Package Areas as follows: Area 1 = total score of 10 or above; Area 2 = total score of 8 to 9; Area 3 = total score of 5 to 7; Area 4 = total score of 4 or less

It is important to note that this method may need to be refined in the light of revised public transport and pedestrian accessibility information.

APPENDIX C: Distances to PPG 24 Boundaries at Key DfT Count Sites

Road Number	DfT Count Point	Description	2005 Traffic Data (AADT)				Speed (kph)	BNL(10m) Façade	PPG 24 NEC	Façade Level	Distance Range (m)
			Total	Lights+M/C	Goods	% Goods					
M23	36036	North of M25	34448	28879	5569	16	108	82.7	A	< 60	>285
			34448	28879	5569	16	108	82.7	B	60 - 68	285 - 85
			34448	28879	5569	16	108	82.7	C	68 - 77	85 - 20
M25	56037	West of J7	152784	116031	36753	24	108	90.0	A	< 60	>860
			152784	116031	36753	24	108	90.0	B	60 - 68	860 - 255
			152784	116031	36753	24	108	90.0	C	68 - 77	255 - 65
M25	17875	West of J8	145972	113728	32244	22	108	89.6	A	< 60	>820
			145972	113728	32244	22	108	89.6	B	60 - 68	820 - 245
			145972	113728	32244	22	108	89.6	C	68 - 77	245 - 60
A217	36820	North of A2022	42615	36930	5685	13	75	80.7	A	< 60	>210
			42615	36930	5685	13	75	80.7	B	60 - 68	210 - 60
			42615	36930	5685	13	75	80.7	C	68 - 77	60 - 15
A217	26800	Brighton Road	34509	30284	4225	12	75	79.6	A	< 60	>180
		Banstead	34509	30284	4225	12	75	79.6	B	60 - 68	180 - 55

Road Number	DfT Count Point	Description	2005 Traffic Data (AADT)				Speed (kph)	BNL(10m) Façade	PPG 24 NEC	Façade Level	Distance Range (m)
			Total	Lights+M/C	Goods	% Goods					
			34509	30284	4225	12	75	79.6	C	68 - 77	55 - 13
A217	7789	Burgh Heath	35374	30052	5322	15	75	80.1	A	< 60	>195
			35374	30052	5322	15	75	80.1	B	60 - 68	195 - 55
			35374	30052	5322	15	75	80.1	C	68 - 77	55 - 14
A217	78389	Kingswood	50211	42689	7522	15	75	81.6	A	< 60	>245
			50211	42689	7522	15	75	81.6	B	60 - 68	245 - 70
			50211	42689	7522	15	75	81.6	C	68 - 77	70 - 17
A217	46809	North of M25	39252	32481	6771	17	75	80.9	A	< 60	>215
			39252	32481	6771	17	75	80.9	B	60 - 68	215 - 65
			39252	32481	6771	17	75	80.9	C	68 - 77	65 - 15
A217	36821	Reigate Hill	27283	23847	3436	13	75	78.6	A	< 60	>155
		South of M25	27283	23847	3436	13	75	78.6	B	60 - 68	155 - 45
			27283	23847	3436	13	75	78.6	C	68 - 77	45 - 10
A217	26801	Bell Street	21732	18879	2853	13	75	77.7	A	< 60	>135
		Reigate	21732	18879	2853	13	75	77.7	B	60 - 68	135 - 40
			21732	18879	2853	13	75	77.7	C	68 - 77	40 - 10

Road Number	DfT Count Point	Description	2005 Traffic Data (AADT)				Speed (kph)	BNL(10m) Façade	PPG 24 NEC	Façade Level	Distance Range (m)
			Total	Lights+M/C	Goods	% Goods					
A217	78291	Dovers Green	13450	12004	1446	11	75	75.2	A	< 60	>90
		Road	13450	12004	1446	11	75	75.2	B	60 - 68	90 - 25
		South of Reigate	13450	12004	1446	11	75	75.2	C	68 - 77	25 - 6
A217	28275	Reigate Road	12115	10814	1301	11	75	74.8	A	< 60	>85
		Sidlow	12115	10814	1301	11	75	74.8	B	60 - 68	85 - 25
			12115	10814	1301	11	75	74.8	C	68 - 77	25 - 6
A2022	27601	West of A217	17258	15109	2149	12	75	76.6	A	< 60	>115
		Fir Tree Road	17258	15109	2149	12	75	76.6	B	60 - 68	115 - 35
		Banstead	17258	15109	2149	12	75	76.6	C	68 - 77	35 - 8
A2022	47598	East of A217	18709	15889	2820	15	75	77.4	A	< 60	>130
		Winkworth Road	18709	15889	2820	15	75	77.4	B	60 - 68	130 - 35
		Banstead	18709	15889	2820	15	75	77.4	C	68 - 77	35 - 9
A240	58141	Reigate Road	15641	12610	3031	19	75	77.2	A	< 60	>125
		Nork	15641	12610	3031	19	75	77.2	B	60 - 68	125 - 35
			15641	12610	3031	19	75	77.2	C	68 - 77	35 - 8

Road Number	DfT Count Point	Description	2005 Traffic Data (AADT)				Speed (kph)	BNL(10m) Façade	PPG 24 NEC	Façade Level	Distance Range (m)
			Total	Lights+M/C	Goods	% Goods					
A240	46842	Reigate Road	20484	17761	2723	13	75	77.5	A	< 60	>130
		Nork	20484	17761	2723	13	75	77.5	B	60 - 68	130 - 40
			20484	17761	2723	13	75	77.5	C	68 - 77	40 - 9
A25	78163	West Street	22049	19053	2996	14	75	77.8	A	< 60	>140
		Reigate	22049	19053	2996	14	75	77.8	B	60 - 68	140 - 40
			22049	19053	2996	14	75	77.8	C	68 - 77	40 - 10
A242	17757	Gatton Park St	7266	6438	828	11	75	72.7	A	< 60	>60
		North of Redhill	7266	6438	828	11	75	72.7	B	60 - 68	60 - 18
			7266	6438	828	11	75	72.7	C	68 - 77	18 - 4
A2044	80608	Woodhatch Road	14824	12631	2193	15	75	76.3	A	< 60	>110
		South of Reigate	14824	12631	2193	15	75	76.3	B	60 - 68	110 - 30
			14824	12631	2193	15	75	76.3	C	68 - 77	30 - 7
A2044	27605	Woodhatch Road	7661	6329	1332	17	75	73.8	A	< 60	>75
		North of Salfords	7661	6329	1332	17	75	73.8	B	60 - 68	75 - 20
			7661	6329	1332	17	75	73.8	C	68 - 77	20 - 5
A23	78388	North of Reigate	39971	32669	7302	18	75	81.1	A	< 60	>225

Road Number	DfT Count Point	Description	2005 Traffic Data (AADT)				Speed (kph)	BNL(10m) Façade	PPG 24 NEC	Façade Level	Distance Range (m)
			Total	Lights+M/C	Goods	% Goods					
		& Banstead	39971	32669	7302	18	75	81.1	B	60 - 68	225 - 65
		boundary	39971	32669	7302	18	75	81.1	C	68 - 77	65 - 15
A23	26272	Brighton Road	43928	35901	8027	18	75	81.5	A	< 60	>240
		South of Hooley	43928	35901	8027	18	75	81.5	B	60 - 68	240 - 70
			43928	35901	8027	18	75	81.5	C	68 - 77	70 - 17
A23	46271	London Rd North	10117	8411	1706	17	75	74.9	A	< 60	>90
		North of M25	10117	8411	1706	17	75	74.9	B	60 - 68	90 - 25
			10117	8411	1706	17	75	74.9	C	68 - 77	25 - 6
A23	6269	London Road	15314	12230	3084	20	75	77.2	A	< 60	>125
		North of M25	15314	12230	3084	20	75	77.2	B	60 - 68	125 - 35
			15314	12230	3084	20	75	77.2	C	68 - 77	35 - 8
A23	78294	London Rd South	17334	14383	2951	17	75	77.3	A	< 60	>125
		North of Redhill	17334	14383	2951	17	75	77.3	B	60 - 68	125 - 35
			17334	14383	2951	17	75	77.3	C	68 - 77	35 - 9
					0						
A23	46273	Bonehurst Road	30350	26214	4136	14	75	79.2	A	< 60	>170
		South of Salfords	30350	26214	4136	14	75	79.2	B	60 - 68	170 - 50

Road Number	DfT Count Point	Description	2005 Traffic Data (AADT)				Speed (kph)	BNL(10m) Façade	PPG 24 NEC	Façade Level	Distance Range (m)
			Total	Lights+M/C	Goods	% Goods					
			30350	26214	4136	14	75	79.2	C	68 - 77	50 - 12
A23	17742	Brighton Road	17197	14780	2417	14	75	76.8	A	< 60	>120
		Horley	17197	14780	2417	14	75	76.8	B	60 - 68	120 - 35
			17197	14780	2417	14	75	76.8	C	68 - 77	35 - 8

Appendix D: Housing Density and Parking Provision for Parking Package Areas

The table.2 below is based on "The Characteristics of Parking Package Areas" matrix set out in SCC's Parking Strategy for Surrey and the findings of this study. It sets out indicative residential density ranges and car parking standards for the different locations in the Borough. For residential development, the Parking Strategy states that the parking thresholds are to be applied for development proposals above a threshold of 20 units or more. Parking Package Areas are indicatively shown in Figure 3.7.

Parking Package Area	**Area 1**	**Area 2**	**Area 3**	**Area 4**
Description	Regional or major town centres	Larger town centres and periphery of Area 1 centres	Smaller town centres, urban fringes or inner suburbs	Outer residential areas and isolated built-up areas
Public Transport Accessibility	High – hub for frequent bus and rail services	Good – extensive network of bus routes and possibly suburban rail	Moderate – close proximity to suburban or radial bus or rail corridors	Low – infrequent bus services or long walks to bus stops/rail stations
Relative level of parking provision	Low	Low/medium	High/medium	High
Relative residential Density	High	High/medium	Low/medium	Low