UNITED BY OUR DIFFERENCE

WSP

Whitehill & Bordon Eco-town Parking Strategy

Hampshire County Council

February 2013

QM

Issue /revision	Issue 1	Revision 1	Revision 2	Revision 3	Revision 4	Revision 5	Revision 6
Remarks	WORKING DRAFT	PROGRESS DRAFT	ISSUED DRAFT	FINAL DRAFT	SECOND FINAL DRAFT	THIRD FINAL DRAFT	ISSUED FINAL DRAFT
Date						January 2013	February 2013
Prepared by	Grace Blizard	Grace Blizard	Grace Blizard	Grace Blizard	Grace Blizard	Grace Blizard	Grace Blizard
Signature							
Checked by	Stuart Morton	Stuart Morton	Stuart Morton	Stuart Morton	Stuart Morton	Stuart Morton	Stuart Morton
Signature							
Authorised by	Peter Day	Peter Day	Peter Day	Peter Day	Peter Day	Peter Day	Peter Day
Signature							
Project number	11581407	11581407	11581407	11581407	11581407	11581407	11581407
File reference	N:\IESE Framework\#HCC Whitehill Bordon Parking Strategy\TEXT\REPORTS\Parking Strategy\Whitehill and Bordon Parking Strategy - Feb 2013 - 210213.docx						

WSP Development and Transportation
Mountbatten House
Basing View
Basingstoke
Hampshire
RG21 4HJ

Tel: +44 (0)1256 318800
Fax: +44 (0)1256 318700
http://www.wspgroup.com

Contents

Executive Summary

STRATEGY PURPOSE

WSP has been appointed by Hampshire County Council (HCC) to produce a Parking Strategy to support the Emerging Transport Strategy and the Framework Masterplan for Whitehill & Bordon Eco-town.

The Parking Strategy seeks to assess the required level of parking both on and off site, by managing the level of demand for car-based travel in order to bring forward an exemplar sustainable development. A key consideration in the strategy is to maintain the commercial viability of development proposals in tandem with overall demand management in line with the Eco-town aspirations and Whitehill & Bordon transport policy.

ECO-TOWN GROWTH PROPOSALS

The Draft Framework Masterplan is a strategic framework showing how growth could occur in Whitehill & Bordon in the 20-25 years. It is the starting point for a wide range of more detailed studies culminating in planning applications over the coming years. The Framework Masterplan is an overall vision for the physical, social and economic and environmental improvement of the town to ensure that development takes place in a considered manner to deliver community benefits for the town as a whole. In summary, the Masterplan includes:

- Mixed use town centre with circa 30,000sqm retail and supporting uses;
- Around 4,000 new homes within identified new residential neighbourhoods and the town centre built to a zero carbon standard;
- A public sports hub with leisure centre and pitches;
- Local healthcare and emergency services;
- Around 70,000sqm eco-business park floor space and opportunities across the masterplan for the creation of at least 5,500 new jobs; and
- Around 127 hectares of new public greenspace.

UNRESTRICTED FUTURE PARKING DEMAND (REVISED MASTERPLAN)

An assessment of the potential unfettered parking demand has been undertaken for employment, retail and leisure, and residential land uses in the Eco-town masterplan. This forecasts peaks in parking demand based on typical accumulations within other UK developments.

Forecasted parking demand for proposed employment sites indicated that a peak accumulation of 1335 parked vehicles would occur between the hours of 14:00-15:00.

An assessment of the likely future parking demand for retail/leisure uses in the Extended Town Centre revealed the peak demand to occur between the hours of 12:00-13:00 for 1549 spaces.

The peak in parking accumulation associated with the 4000 proposed new dwellings will occur between 18:00-19:00, with 4794 spaces required for Masterplan Option 1 and 5035 spaces for Masterplan Option 2.

Drawing together parking demand for all uses, the overall peak demand for parking in the proposed Eco-town will occur between 18:00-19:00, with a total of 5934 and 6175 spaces required for Options 1 and 2 respectively, before measures to reduce parking demand are explored.

REDUCED PARKING OPTIONS APPRAISAL

Consideration is given to the potential of a range of parking provision approaches, demand management measures and wider smarter choices initiatives for reducing parking demand within the Whitehill & Bordon Eco-town. This includes the impact of the forecast trip containment within the Eco-town as a result of locating land uses in proximity to each other, the layout of the internal road network to facilitate local walking and cycling trips, and the availability of schools and other community facilities. Specific parking approaches and practices reviewed include:

- **Shared-Use parking arrangements** - Shared-use parking arrangements combine parking provision for a range of land uses as opposed to providing them individually. Typically this is usual for non-residential uses with town centre car parks serving many land uses. This ensures that parking spaces remain well utilised across the full day with complimentary land uses calling on parking demand at varying times.
- **Parking Barns** - "parking houses" where cars can be parked and kept out of view. They can be provided in the way of multi-storey car parks, or in discrete blocks under buildings or landscape, providing unallocated car parking to nearby dwellings.
- **Allocated and unallocated parking provision –** The provision of allocated or unallocated parking spaces can influence the efficiency of the parking stock and reduce the level of land take associated with providing parking. It can also reduce the dependence on the use of the private car.
- **Park and Ride -** Park & Ride schemes would allow visitors to park outside of the town, reducing the parking demand in the town centre. However, Park & Ride schemes are generally more suited to larger towns and cities where the town/city centre is a major attractor in the area.
- **Car clubs** - Community car clubs are a way of catering for the occasional car essential trips without the necessity to own a car. They are operated as a car sharing pool on a pay-as-you-go basis, and should be placed close to residential areas to appear as a convenient alternative to private car ownership
- **Residential parking charges** - Applying charges for the parking of a vehicle in residential area. Similar approaches can be found in many parts of the UK where permit parking is in operation, and residents must pay to purchase a permit. Schemes can be flexible in terms of eligibility and setting charges associated with buying/renting a parking space (for example a set cost for the second household permit, and a higher price for the third permit and so on).
- **Workplace Parking Levies** - Workplace parking levies are a way of managing the parking demand at proposed employment sites. This approach would require employers to hold annual licences to cover the maximum number of workplace parking spaces that can be provided at their site at any one time.
- **Decriminalised Parking Enforcement (DPE) / (CPZ)** – To reduce incidents of illegal on-street parking, abuse of parking restrictions and to supplement residential parking schemes, parking enforcement measures such as Controlled Parking Zones (CPZs) would need to be introduced at adjacent residential areas. This would help deter any overflow from residential permit only areas and alleviate the existing illegal parking problem in Whitehill & Bordon.

CONSULTATION PROCESS

The consultation process commenced in two stages, allowing firstly for stakeholder and public consultation to inform the development of the Parking Strategy and secondly an opportunity for stakeholders to comment on the strategy recommendations.

As a result of the first stage of consultation, it has been established that there is currently a generous supply of free car parking in Whitehill & Bordon. With the increased pressure for parking associated with the proposed Eco-town, it is important to derive a balance between the contrasting needs of different users, including existing and future residents and businesses.

Following the setting of the Strategy's Recommendations, a further consultation period was undertaken between September-December 2012 to allow stakeholders and the public to comment on the parking recommendations. Overall the level of provision was deemed stringent and would be a step to far initially.

VIABILITY

Savill's have undertaken a viability assessment for the proposed parking strategy at Whitehill & Bordon Eco-town. This highlights that providing car parking lower than existing parking standards will be more achievable for smaller residential units, supported by many of the accessibility principles included in the Masterplan and phased in over time. The mix of commercial uses will influence the level of parking that is required, with office based employment requiring greater parking provision than other uses, although it is noted that current town centre office locations within Southampton, Portsmouth and Basingstoke have confined levels of parking.

Overall the assessment highlights that reduced parking standards could have an impact on the value of new housing, with a 15% decline in values anticipated for a reduced car parking standard.

PARKING STRATEGY RECOMMENDATIONS

Recommend levels of parking that should be provided within Whitehill & Bordon based on achievements seen at exemplar case studies, the feasibility work to assess how successful these measures could be, responses from consultation and the viability appraisal of parking restraint at Whitehill & Bordon beyond existing Hampshire County Council parking standards are presented. These are phased in their delivery for residential Options 1 and 2 with any shared use opportunities between complimentary uses taken into consideration. The levels of provision become more stringent through the development delivery stages, due to the more generous provision initially.

Delivery Phasing for Parking Provision (Option 1)

<table>
<tr><th colspan="2" rowspan="2">Phase</th><th colspan="2">Residential</th><th colspan="2">Employment</th><th>Extended Town Centre</th></tr>
<tr><th>Units</th><th>Provision</th><th>Jobs</th><th>Provision</th><th>Provision</th></tr>
<tr><td rowspan="3">1</td><td>Provision</td><td>150</td><td>250</td><td>404</td><td>184</td><td rowspan="3">-</td></tr>
<tr><td>Shared Use</td><td colspan="4">50</td></tr>
<tr><td>Parking Standard</td><td colspan="2">2.00</td><td colspan="2">0.58</td></tr>
</table>

2	Provision	1400	2360	1791	422	200
	Shared Use	90				
	Parking Standard	1.75		0.33		
3	Provision	1400	1940	1364	239	-
	Shared Use	90				
	Parking Standard	1.45		0.28		
4	Provision	1050	1148	1249	208	70 (+55 spaces shared with residential use)
	Shared Use	55 (shared with retail)		-		
	Parking Standard	1.15		0.17		
TOTAL		5983		742 (at employment sites)		325
				541 (at extended TC) →		
Resulting Parking Standard		1.50 per dwelling		0.27 per employee		0.14 per shopper

Delivery Phasing for Parking Provision (Option 2)

Phase		Residential		Employment		Extended Town Centre
		Units	Provision	Jobs	Provision	Provision
1	Provision	150	250	404	184	-
	Shared Use	50				
	Parking Standard	2.00		0.58		
2	Provision	1400	2500	1791	422	200
	Shared Use	90				
	Parking Standard	1.85		0.33		
3	Provision	1400	2090	1364	239	-
	Shared Use	90				
	Parking Standard	1.56		0.28		
4	Provision	1050	1244	1249	208	70 (+55 spaces shared with residential use)
	Shared Use	55 (shared with retail)		-		
	Parking Standard	1.24		0.17		
TOTAL		6369		742 (at employment sites)		325
				541 (at extended TC) →		
Resulting Parking Standard		1.59 per dwelling		0.27 per employee		0.14 per sqm

1 Background

1.1 BACKGROUND

1.1.1 Whitehill & Bordon is one of four towns in the country which has been designated as an Eco-town, with the aim of becoming an exemplar for sustainable development.

1.1.2 The town currently has a population of around 14,000 people and 6,000 homes. The Ministry of Defence is due to leave Whitehill & Bordon, providing an opportunity for development and regeneration within the town.

1.1.3 An Emerging Transport Strategy has been prepared to support a Framework Masterplan for development of the Eco-town which aims to deliver 4,000 new homes (maximum 5300 homes), along with a new town centre providing commercial, retail and leisure facilities to regenerate the existing town centre offer. The provision of these supporting non-residential land uses will deliver up to 5,500 new jobs within Whitehill & Bordon.

1.1.4 The transport vision for Whitehill & Bordon is presented within the Emerging Transport Strategy (Hampshire County Council, September 2011) as follows:

"Achieve sustainable growth in the long term by delivering an integrated low carbon transport system that will be in the forefront of innovative thinking, providing high quality, affordable and deliverable alternatives to the private car, managing transport demand and maximising the use of existing assets to become an example for modern day sustainable living".

1.2 STUDY CONTEXT

1.2.1 WSP has been appointed by Hampshire County Council (HCC) to produce a suite of Transportation Strategies to support the Emerging Transport Strategy and the Framework Masterplan for Whitehill & Bordon Eco-town. These are intrinsically linked to deliver the Eco-Town movement and transport aspirations;

- **Walking and Cycling Strategy**
  - The Walking and Cycling Strategy outlines provision for walking and cycling, which will encourage current and future residents of Whitehill & Bordon, to use alternative modes of travel to the car;
- **Parking Strategy**
  - The Parking Strategy seeks to manage the availability of parking both on and off site, managing the level of demand. A key consideration in the strategy is to maintain the commercial viability of development proposals in tandem with overall demand management.
- **Traffic Management Strategy**
  - The Traffic Management Strategy seeks to mitigate the impact of Eco-town proposals on villages surrounding Whitehill & Bordon.

1.2.2 HCC anticipates that the strategies will inform future interventions and infrastructure requirements for the Whitehill & Bordon Eco-town project.

1.3 SUPPORTING DOCUMENTATION

1.3.1 During the development of the Whitehill & Bordon Eco-town proposals, a considerable amount of supporting documentation has been produced, including:

- Framework Masterplan, AECOM, June 2010
- Green Infrastructure Study, Halcrow, July 2011
- Emerging Transport Strategy, Hampshire County Council, September 2011
- Framework Travel Plan, Hampshire County Council, June 2011
- Transport Assessment, Amey, September 2011

1.3.2 This material has been utilised to inform the Parking Strategy where relevant with consideration given to both technical and strategic findings of these supporting documents.

1.4 AIMS OF THE PARKING STRATEGY

1.4.1 The existing town creates over 60,000 trips per day across all modes. The main mode of travel to work amongst the population of Whitehill & Bordon is the car, with car driver trips accounting for 74% of journeys.

1.4.2 Managing the demand for car-based travel will be central to bringing forward an exemplar sustainable development that assists with the regeneration and future economic prosperity of the town, and meet the Eco-town aspirations on travel patterns and behaviour as presented within Whitehill & Bordon Transport Policy 12.

Car Parking – *Development at Whitehill & Bordon will provide an appropriate level of car parking in accordance with a Car Parking Strategy prepared for Whitehill & Bordon. The strategy will balance the need to provide car parking and the need to promote sustainable transport. Car parking management measures will be implemented from the early stages of development to ensure that parking facilities are well managed, and that detrimental impact of informal car parking is reduced, allowing for the safe and efficient operation of the transport network.*

1.4.3 A parking strategy will be an important aspect in managing future car demand within the home, workplace and town centre. The strategy can help to foster sustainable, low carbon travel patterns amongst residents and workers alongside wider investment in transport services, and actively support the viability and regeneration of the town centre.

1.4.4 The Transport Vision defined above is supported by a range of transport objectives to which the parking strategy can contribute directly towards or support as summarised below;

- ***Support sustainable economic regeneration and town growth****;* A balance of parking provision which supports town centre vitality and commercial sustainability of all Eco-town land uses.
- ***Improve the environment by reducing congestion and the associated pollution****;* Manage the demand for parking to discourage vehicular trips within the traffic peaks.
- ***Enable sustainable movement by developing high quality public transport, walking and cycling alternatives to the private car;***

- ***Balance the need for people to travel with the importance of protecting the environment****;*
- ***Reduce journey length and the need to travel outside of the town****;*
- ***Manage car demand within, through and outside of the town maximising the use of existing assets****;* and
- ***Promote clean vehicle technologies to reduce carbon emissions.*** Provide parking privileges to those with clean technology vehicles.

1.5 STUDY METHODOLOGY

1.5.1 The car parking strategy for Whitehill & Bordon has been developed by following a staged process with completion of the following tasks:

- An examination of the national, regional and local policy context for provision of car parking and consider recent changes to parking policy direction;
- A review of parking measures and management system employed elsewhere to provide an indication of what can be achieved in terms of modal shift and reduced demand for parking (refer to Case Studies included within Appendix A);
- An understanding of the current provision of off street car parking spaces in Whitehill & Bordon and existing residential parking demand;
- An assessment of daily traffic volumes related to the land uses included in the development proposals;
- Review of future parking demand for the range of land uses contained within the Whitehill & Bordon Eco-town Masterplan with consideration of associated daily parking profiles and Parking Strategy viability advice received from Savill's; and
- Refinement of parking demand forecasts following implementation of parking measures and management options based on the current Masterplan and mix of both residential and non-residential land uses.

1.6 REPORT STRUCTURE

1.6.1 This document is set out to report on the above stages of the project in the following chapters:

- Chapter 2 provides a policy and legislation context to the parking strategy for Whitehill & Bordon, giving consideration to recent parking guidance and policy direction;
- Chapter 3 provides a review of the current baseline parking supply for Whitehill & Bordon including parking accumulation and feedback from resident consultation events;
- Chapter 4 outlines the key components of the Whitehill & Bordon Eco-town Masterplan proposals describing the land use changes proposed and commentary on the immediate proposals put forward in terms of parking supply and management;
- Chapter 5 shows the methodology applied to assess the future demand for parking within Whitehill & Bordon Eco-town. This chapter considers unfettered parking demand based on typical parking provision rates;

- Chapter 6 then considers the impact of parking demand measures that could be applied to the Eco-town based on accessibility levels and experience from other areas where innovative parking measures are adopted; and
- Chapter 7 summarises the recommendations for parking provision in Whitehill & Bordon according to the revised Masterplan, including the best methods of provision and measures to reduce car parking demand.

2 Planning Policy and Context

2.1 INTRODUCTION

2.1.1 The hierarchy of transport policy guidance and legislation is an important framework for setting the context of a parking strategy for the proposed Whitehill & Bordon Eco-town. Parking is covered at a national level within the Planning Policy Guidance and the Government's White Paper. Information collated and reported in this section is used to develop our car parking strategy in combination with data collected. The elements that are included as part of the strategy have been developed with this policy guidance in mind.

2.2 NATIONAL POLICY

NATIONAL PLANNING POLICY FRAMEWORK, DCLG, MARCH 2012

2.2.1 Adopted on 27 March 2012, the National Planning Policy Framework (NPPF) seeks to reduce the complexity and improve the accessibility of the planning system, whilst protecting the environment and encouraging growth in a sustainable manner.

2.2.2 The NPPF replaces all previous Planning Policy Guidance Notes and Statements, becoming the definitive national planning guidance from which local planning authorities can, in collaboration with their communities, produce local plans appropriate to the character and needs of their area.

2.2.3 Key to the NPPF and its success is the following statement from Paragraph 14:

"At the heart of the National Planning Policy Framework is a ***presumption in favour of sustainable development,*** *which should be seen as a golden thread running through both plan-making and decision-taking."*

2.2.4 Transport forms one of the 12 core land use planning principles set out by the NPPF. This principle directs that locations which are sustainable or which can be made sustainable should become the focus for significant development. Opportunities to utilise sustainable modes to their fullest, such as public transport, walking and cycling should be actively taken and these considerations are discussed as part of the Eco-towns' Walking and Cycling Strategy. Paragraph 7 of the NPPF notes three 'dimensions' of sustainable development:

- Economic,
- Social, and
- Environmental.

2.2.5 Transport is able to contribute significantly to a development's adherence to these, through means such as providing infrastructure to support economic growth, enhancing accessibility to services and fulfilling the social needs of people and providing solutions which minimise pollution and environmental impact.

2.2.6 As encouraged in the NPPF (paragraph 29), the proposed Eco-town has been planned in such a way that gives people a "real choice" regarding their mode of travel. Its density and proximity to existing and proposed local facilities ensures that sustainable modes can be considered a favourable option for local trips.

2.2.7 The NPPF sets out a list of criteria which should be considered by local Planning Authorities when determining parking standards for residential and non-residential parking standards. Paragraphs 39 and 40 state the following:

"If setting local parking standards for residential and non-residential development, local planning authorities should take into account:

- *The accessibility of the development;*
- *The type, mix and use of development;*
- *The availability of and opportunities for public transport;*
- *Local car ownership levels; and*
- *An overall need to reduce the use of high-emission vehicles.*

Local authorities should seek should seek to improve the quality of parking in town centres so that it is convenient, safe and secure, including appropriate provision for motorcycles. They should set appropriate parking charges that do not undermine the vitality of town centres. Parking enforcement should be proportionate."

CREATING GROWTH, CUTTING CARBON: MAKING SUSTAINABLE LOCAL TRANSPORT HAPPEN (DFT WHITE PAPER, 2011)

2.2.8 The Government's Transport White Paper entitled 'Creating growth, cutting carbon: Making sustainable local transport happen' sets out the Government's vision for a sustainable local transport system that supports the economy and reduces carbon emissions.

2.2.9 The Transport White Paper states that action taken locally is best placed to support economic growth and deliver near term reduction in transport-related carbon emissions. This can be achieved by providing people with options to choose sustainable modes for everyday local transport choices to, for example, help boost economic growth by facilitating access to local jobs.

2.2.10 The Government's strategy is "*to manage traffic in ways which tackle congestion as well as reduce carbon emissions and bring road safety and air quality benefits*", and recognise that parking strategies have been shown to be beneficial to local growth, particularly in town centres.

PLANNING POLICY GUIDANCE

2.2.11 In addition to the strategic advice published in its White Paper, the Government issues important national policy guidance in the form of Planning Policy Guidance (PPG) and Statement (PPS) notes, intended to guide the development plans of local authorities. Although these policies are due to be superseded by the recently published NPPF, they have been included here due to the transition period spanning 12 months from the NPPF publish date.

2.2.12 PPG 13: Transport, sets out the government's key objectives of integrating planning and transport at the national, regional, strategic and local level to:

- *"Promote more sustainable transport choices for both people and for moving freight;*
- *Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling, and*
- *Reduce the need to travel, especially by car."*

2.2.13 Parking policy is one method used to deliver these objectives. In particular, PPG 13 realises the significant influence parking has on the mode of transport people use, making specific reference to the "*use of parking policies, alongside other planning*

and transport measures, to promote sustainable transport choices and reduce reliance on the car for work and other journeys".

2.2.14 Also in relation to parking policies, PPG 13 states that parking standards "*should be designed to be used as part of a package of measures to promote sustainable transport choices and the efficient use of land, enable schemes to fit into central urban sites, promote linked-trips and access to development for those without use of a car and to tackle congestion." In terms of an overall approach to parking, covering both the local transport plan and development plan, "local authorities should adopt on-street measures to complement land use policies. Local authorities should set out appropriate levels and charges for parking which do not undermine the vitality of town centres. Parking enforcement should be proportionate*."

A research paper undertaken on behalf of the Department for Transport: Research into the Use and Effectiveness of Maximum Parking Standards, June 2008, examined the evidence which supports the claim that national maximum parking standards are a key part of a local authority's demand management toolkit. It was concluded that without the support and guidance provided within PPG13, it would be difficult for local authorities to resist developer pressure and could lead to less restrictive parking policies than they currently have.

2.2.15 PPS4: Planning for Sustainable Economic Growth contains policy on car parking for non-*residential development (Policy EC8), and states that "In setting their maximum standards, local planning authorities should take into account:*

- *The need to encourage access to development for those without use of a car and promote sustainable transport choices, including cycling and walking;*
- *The need to reduce carbon emissions;*
- *Current, and likely future, levels of public transport accessibility;*
- *The need to reduce the amount of land needed for development;*
- *The need to tackle congestion;*
- *The need to work towards the attainment of air quality objectives;*
- *The need to make provision for adequate levels of good quality secure parking in town centres to encourage investment and maintain their vitality and viability;*
- *The need to encourage the shared use of parking, particularly in town centres and as part of major developments;*
- *The need to provide for appropriate disabled parking and access;*
- *The needs of different business sizes and types and major employers; and*
- *The differing needs of rural and urban areas."*

DFT RESEARCH REPORT

2.2.16 Earlier in 2011 the Department for Transport (DfT) published a research report conducted by TAS on Parking Measures and Policies. It contained the following description of a paradigm shift in parking policy:

In the UK, and now increasingly in North America, parking planning has undergone a paradigm shift, a fundamental change in how a problem is perceived and solutions evaluated. The old paradigm assumed that parking should be abundant and free at most destinations. The aim was to maximise supply and minimise price.

The old paradigm assumed that parking spaces should almost never fill, that parking facility costs should be incorporated into the costs of buildings or be subsidised by local government, and that every destination should satisfy its own parking needs.

It is evident that conventional parking practice is still widely used within suburban areas propagating low density development and urban sprawl.

The new paradigm strives to use parking facilities efficiently. It considers full car parks to be acceptable and that any spillover problems, such as congestion or carbon emissions, should be addressed. It emphasises the sharing of parking facilities between different destinations. It favours charging parking costs directly to users, and providing financial rewards to people who reduce their parking demand. The new paradigm strives to provide optimal parking supply and price accordingly. It considers too much supply as harmful as too little, and prices that are too low as harmful as those that are too high.

The new paradigm recognizes that transport and land-use conditions evolve so parking planning practices need frequent adjustment. It allows new approaches to be tried until their effectiveness (or lack thereof) is proven.

The old paradigm results in predict and provide planning, in which past trends are extrapolated to predict future demand, which planners then try to satisfy. This often creates a self-fulfilling prophecy, since abundant parking supply tends to increase vehicle use and urban sprawl, causing parking demand and parking supply to increase further.

2.3 LOCAL POLICY

HAMPSHIRE LOCAL TRANSPORT PLAN 3 (2011-2031)

2.3.1 Hampshire County Council's Local Transport Plan 3 (LTP3) was approved in February 2011 and adopted once the previous LTP2 expired in March 2011. It consists of two parts: a long term vision for how the county's transport network will be developed over the next 20 years, and a short term three year implementation plan.

2.3.2 The overall vision for LTP3 is a transport strategy that will help HCC realise:

"Safe, efficient and reliable ways to get around a prospering and sustainable Hampshire".

2.3.3 The strategic transport priority is to make the most of the existing transport network in light of a current environment of restricted government expenditure. Therefore over the next five years maintenance, safety and management have been prioritised. The three main priorities are listed below.

- Main Priority 1: To support economic growth by ensuring the safety, soundness and efficiency of the transport network in Hampshire.

- Main Priority 2: Provide a safe, well-maintained, and more resilient road network in Hampshire as the basic transport infrastructure of the county on which all forms of transport directly or indirectly depend, and the key to continued casualty reduction.
- Main Priority 3: Manage traffic to maximise the efficiency of existing network capacity, improving journey time reliability and reducing emissions, thereby supporting the efficient and sustainable movement of people and goods.

2.3.4 Chapter 6 of the LTP3 recognises that there are a number of significant transport challenges facing Central Hampshire, reflecting the rural nature of the area. This includes:

"delivery of appropriate transport solutions to support sustainable development in Whitehill & Bordon eco-town, which is expected to accommodate 4,000 new dwellings and significant employment development. There is a need to improve self-containment and reduce car dependency for both existing and new residents."

2.3.5 In relation to the strategic inter-urban network, the LTP states its intent to explore the potential for direct rail connection to Whitehill & Bordon in support of the public transport network, through collaboration with public transport industry partners.

2.3.6 Among other towns in the county, Whitehill & Bordon is described as an urban centre offering the "greatest potential within the strategy area as a whole for measures that improve travel choice and reduce dependency on the private car". It is also recognised that scope exists to improve quality of bus services and develop walking and cycling networks in the area.

2.3.7 Whitehill & Bordon is identified as an area of growth that is expected to provide new residential, commercial and retail uses, and through exemplary sustainable re-development between 2015 and 2036, envisages the existing population to double in size in the process.

2.3.8 The LTP refers to the Emerging Transport Strategy (ETS) published in September 2011, and outlines its purpose to set "a framework for the future transport system and aim to provide for the needs of the future resident population."

2.4 SUMMARY

2.4.1 Arising from national, regional and local policy, this report confirms the following objectives which will be included in the development of the Parking Strategy for Whitehill & Bordon:

- Capped maximum parking standards;
- Mixed use of parking provision;
- Use of parking as a policy tool; and
- Adoption of a different approach to parking provision, in accordance with framework provided by DfT guidance.

2.4.2 The development proposals for Whitehill & Bordon assume mitigated parking stock to meet Eco-town status & LTP3 policies. Various policies and measures are developed in the report aimed at achieving the above objectives and addressing other issues identified during the course of the study.

3 Baseline Parking Provision

3.1 INTRODUCTION

3.1.1 A key element in the development of the parking strategy is consideration of baseline parking provision within Whitehill & Bordon. This includes current residential car ownership levels (Census 2001) and demand for off street parking in terms of type, location and demand through the day.

3.1.2 To capture off street parking information site visits were undertaken of all car parks in the area and an occupancy survey was undertaken on the Forest Centre car park on a typical weekday and on a Saturday. This information is presented below.

3.2 EXISTING RESIDENTIAL PARKING DEMAND

3.2.1 The existing levels of car ownership have been determined using 2001 Census "car ownership by dwelling type" data for the Whitehill & Bordon and Lindford wards which are deemed to cover the study area sufficiently. This dataset indicates how many cars are owned by houses and flats of varying sizes and provides a good indication of existing demand for residential parking within the study area. It should be noted that car ownership levels for military personnel based at the barracks is included within the data for the Whitehill Hogmoor ward. With the departure of the MoD, Whitehill & Bordon's car ownership could be slightly higher than the 2001 Census data indicates, being more reflective of other residential areas. Tables 3.1 and 3.2 present this data for flats and houses in both wards.

Table 3.1: Car Ownership for Flats

Flats by Tenure	Total Units	Car Ownership Levels					Existing Parking Demand	Average Car Ownership
		None	One	Two	Three	Four+		
Owner Occupied	262	29	164	63	3	3	311	1.187
1 room	11	0	8	3	0	0	14	1.273
2 rooms	26	3	20	3	0	0	26	1.000
3 rooms	107	6	70	31	0	0	132	1.234
4 rooms	91	14	56	18	0	3	104	1.143
5+ rooms	27	6	10	8	3	0	35	1.296
Shared Ownership & Rented	461	162	252	44	3	0	349	0.757
1 room	23	6	17	0	0	0	17	0.739
2 rooms	39	15	21	3	0	0	27	0.692
3 rooms	145	71	65	9	0	0	83	0.572
4 rooms	193	56	114	23	0	0	160	0.829
5+ rooms	61	14	35	9	3	0	62	1.016
Summary	723	191	416	107	6	3	660	0.913

Table 3.2: Car Ownership for Houses

Houses by Tenure	Total Units	Car Ownership Levels					Existing Parking Demand	Average Car Ownership
		None	One	Two	Three	Four+		
Owner Occupied	3861	188	1449	1660	433	131	6592	1.707
2 rooms	27	7	14	6	0	0	26	0.963
3 rooms	136	6	77	41	9	3	198	1.456
4 rooms	700	68	348	256	28	0	944	1.349
5 rooms	1197	65	512	483	115	22	1911	1.596
6 rooms	787	26	279	347	99	36	1414	1.797
7 rooms	502	7	124	267	82	22	992	1.976
8+ rooms	512	9	95	260	100	48	1107	2.162
Shared Ownership & Rented	1157	202	632	271	36	16	1346	1.163
2 rooms	9	0	6	3	0	0	12	1.333
3 rooms	64	23	32	6	0	3	56	0.875
4 rooms	277	57	154	54	12	0	298	1.076
5 rooms	449	76	259	107	3	4	498	1.109
6 rooms	210	29	108	61	9	3	269	1.281
7 rooms	106	14	52	27	7	6	151	1.425
8+ rooms	42	3	21	13	5	0	62	1.476
Summary	5018	390	2081	1931	469	147	7938	1.582

3.2.2 Tables 3.1 and 3.2 indicate that parking demand is lower for flats than houses with average car ownership per dwelling standing at 0.913 and 1.582 respectively. The majority (58%) of flats have one car whether owner occupied or rented, 26% have no car which suggests there is potential for some car free residential areas within the Whitehill & Bordon Eco-town Masterplan. For houses, 43% of owner occupied houses have 2 cars whilst this falls to 23% for rented houses. Only 8% of houses have no car with 41% having one car. It can be seen that the total number of cars owned by dwellings in the Whitehill & Bordon and Lindford wards is 8598, kept by 5741 dwellings. Hence, average car ownership for Whitehill & Bordon as a whole equates to 1.50 cars per dwelling. If the Whitehill & Bordon Eco-town proposals can target potential two car houses through smarter choice initiatives and parking demand management measures then residential parking demand would reduce significantly within the Eco-town. This is discussed further in Chapter 6.

3.3 CURRENT HAMPSHIRE PARKING STANDARDS

3.3.1 To set the car ownership levels assessment in to context, a review against HCC existing parking standards are presented in Table 3.3 below. In addition, dwelling numbers by household size in the Whitehill & Bordon wards detailed in Tables 3.1 and 3.2 have been used to calculate parking provision based on Hampshire County Council's (HCC) current standards.

Table 3.3: Hampshire's Current Parking Standards

Dwelling Size	Hampshire Parking Standards	Dwellings within Whitehill & Bordon wards	Parking Provision (based on HCC standards)
1 bedroom units	1 space	587	587
2-3 bedroom units	2 spaces	3,992	7,984
4 or more bedroom units	3 spaces	1,162	3,486
	TOTAL	**5,741**	**12,057**

3.3.2 HCC's existing parking standards for residential land uses suggests a theoretical maximum of 12,057 parking spaces for the current dwelling mix within the Whitehill & Bordon wards. This equates to an average 2.1 spaces per dwelling, far higher than the current average car ownership of 1.5 spaces per dwelling.

3.4 OFF-STREET PUBLIC CAR PARKING (COUNCIL OPERATED)

3.4.1 An audit of existing parking provision was undertaken on Monday 24th October 2011 taking account of the type of provision and the existing capacity, along with observed occupancies recorded twice between 10:00-15:00. Each of the car parks are summarised below and it was noted that all car parks were free to use with no restriction on length of stay. Figure 3.1 illustrates the locations of current public car parking provision in Whitehill & Bordon.

GUADALOUPE CAR PARK

3.4.2 Guadaloupe car park is located in the town centre west of the Chalet Hill / A325 High Street junction. This public car park has a capacity of at least 26 spaces, and an observed occupancy of 96%. These are unmarked spaces so high demand may cause vehicles to park in any viable space.

SUTTON FIELD CAR PARK

3.4.3 Sutton Field car cark is located approximately 1km south of the High Street / Chalet Hill junction, on the western side of Petersfield Road. It has a capacity of 20 spaces arranged in marked bays which serve customers to local convenience shops on the opposite side of the road. It was also observed to act as an overflow to residents and visitors to local streets, and has an observed occupancy of 48%.

WESTERN CAR PARK, FOREST CENTRE

3.4.4 This is the western car park at the Forest Centre adjacent to Lidl and Wilkinsons. It has a capacity of 108 standard, 10 disabled and 4 parent & child spaces, laid out in marked bays. This car park has an observed occupancy of 64%. There is no fee associated with parking here, and no restriction on length of stay.

MIDDLE CAR PARK, FOREST CENTRE

3.4.5 Located to the rear of Lidl and Forest Centre local shops, this is the car park in the centre of the three available car parks at the Forest Centre. It is also free to park here, and length of stay is unrestricted. It has capacity for 45 standard and 2 disabled spaces in marked bays, with an observed occupancy rate of 34%.

EASTERN CAR PARK, FOREST CENTRE

3.4.6 The largest of the three Forest Centre car parks, this car park is closest to the Co-op / Peacocks and other local shops. Parking is arranged in marked bays and there is capacity for a total of 138 cars; 133 standard, 2 disabled and 3 parent & child spaces. The car park was observed to have a low occupancy rate of 18%.

FOREST COMMUNITY CENTRE CAR PARK

3.4.7 Situated on Pinehill Road opposite the middle Forest Centre car park, this is an unrestricted, free to park car park serving the Community Centre. It has a capacity of 45 standard and 4 disabled spaces laid out in marked bays. Its observed occupancy was 29%.

3.5 OFF-STREET CAR PARKING (PRIVATELY OPERATED)

TESCO CAR PARK

3.5.1 Tesco's is located on High Street approximately 200m south of the junction with Chalet Hill. It has a capacity of 199 marked spaces in total; 179 standard, 12 disabled and 8 parent & child. The car park is unrestricted in terms of charging and length of stay, and had an observed occupancy rate of approximately 44%.

COOMERS CAR PARK

3.5.2 Coomers Car Park is another private car park for its customers only although there are no restrictions in place to deter non-customers from parking here. There is a capacity of 28 standard spaces and 2 disabled spaces arranged in marked bays, and observed occupancy is at a level of 57%.

ELIZABETH DIBBEN CLINIC

3.5.3 This car park is private and for patient parking only. It has a capacity of 28 standard spaces and 2 disabled spaces, and had an observed occupancy rate of 53%.

3.6 ON-STREET PUBLIC PARKING SPACES

CHALET HILL (TOWN CENTRE)

3.6.1 Chalet Hill on-street parking serves the main town centre shops, and consists of marked parking bays on the southern side of the road with capacity for approximately 13 cars. It is free to park, although restrictions are in place Monday to Saturday 9am-6pm which limit length of stay to one hour, with no return within 30 minutes. Whilst observed occupancy is taken to be around 65% on Chalet Hill, immediately south of this

marked parking, there is further on-street unrestricted parking leading into Tilbury's Close. There is an approximate capacity for around 12 cars here and a high occupancy level was recorded of between 80-100%.

3.6.2 Further east along Chalet Hill, on-street parking restrictions terminate at Tilbury's Close. No on-street parking was recorded upon observation; however there are some unallocated parking laybys on the north and south sides of the road adjacent to residential properties, which had an occupancy level of around 40-50%. After the first Savile Crescent junction, there is signage for parking at both the Forest Centre (West) accessed via Forest Road (next right) and the Forest Centre (East) via Alma Road (fourth right).

HIGH STREET

3.6.3 Double yellow lines restrict parking between the Tesco Access and Chalet Hill junctions, whilst north and south of this section has no restriction on parking. Signage to traffic entering Whitehill & Bordon from both directions guides cars to free parking at the Guadaloupe Car Park.

WOOLMER WAY

3.6.4 Woolmer Way is a trading estate to the west of the High Street, and is accessed via both the Tesco Access junction and the Conde Way roundabout further south. There are no on-street parking restrictions along Woolmer Way, and the majority of units located on this road have their own on-site private parking. It has been observed that on-street parking occupancy on Woolmer Way is low.

CONDE WAY / HOLLYBROOK PARK

3.6.5 Conde Way leads off the lower end of the High Street and changes into Hollybrook Park which then meets Chalet Hill, forming a loop to the east of Whitehill & Bordon. No parking restrictions are in place along this road, and drivers are directed to the Forest Centre car parks.

FOREST ROAD

3.6.6 Forest Road stretches between Chalet Hill in the north and Conde Way in the south and passes to the west of the Forest Centre. Although there are no parking restrictions in place along this road, there were no parked cars observed during the audit. This is most likely due to there being sufficient residential on-plot parking, and ample parking provision at the Forest Centre for shoppers. Traffic calming measures are in place along the entirety of Forest Road in the form of road narrowing down to approximately 3.5m.

EXISTING PARKING PROVISION

3.6.7 The provision of public car parks in Whitehill & Bordon has been investigated to understand the existing level of provision in the town. To summarise, there are currently six main car parks for public use, all of which are unrestricted. In addition there is some on-street parking along the southern side of Chalet Hill which is restricted a one hour limit with no return within 30mins on Monday – Saturday, 9am – 6pm. Table 3.4 outlines the existing parking provision.

Table 3.4: Summary of Existing Public Car Parking Capacity

Location	Capacity		
	Standard	Disabled	Parent & Toddler
Forest Centre Car Park (eastern side)	133	2	3
Co-op Car Park (centre)	45	2	0
Lidl Car Park (western side)	108	10	4
Forest Community Centre Car Park	45	4	0
Guadaloupe Car Park	26	0	0
Sutton Field Car Park	20	0	0
Chalet Hill	13	0	0
TOTAL	**390**	**18**	**7**

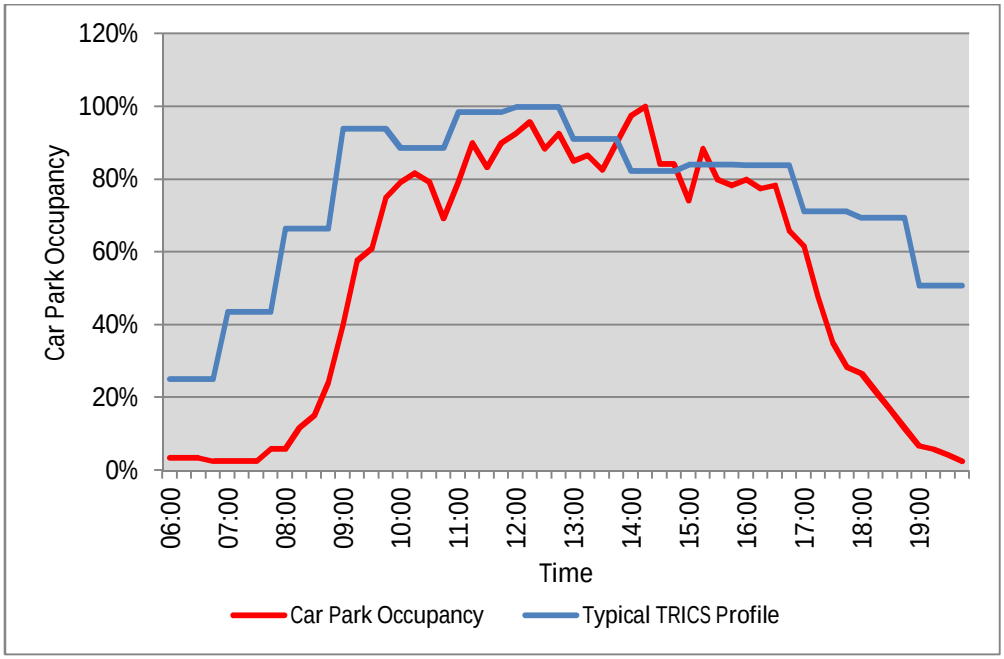
3.7 TOWN CENTRE PARKING OCCUPANCY ANALYSIS

3.7.1 To assist in the development of parking baseline occupancy, surveys were undertaken within the Forest Centre car parks which were deemed to be representative of local off street public parking profiles. These surveys were undertaken on Thursday 8th December 2011 and Saturday 10th December 2011 between 06:00 and 20:00. These surveys were conducted to establish the typical parking profile of town centre car parks and to identify the potential that central car parks could be utilised as shared use between residential and non-residential land uses. The results of the occupancy surveys are summarised below. For purposes of comparison, a typical daily profile for similar surveyed sites in TRICS has been included on each graph.

FOREST CENTRE - WESTERN CAR PARK

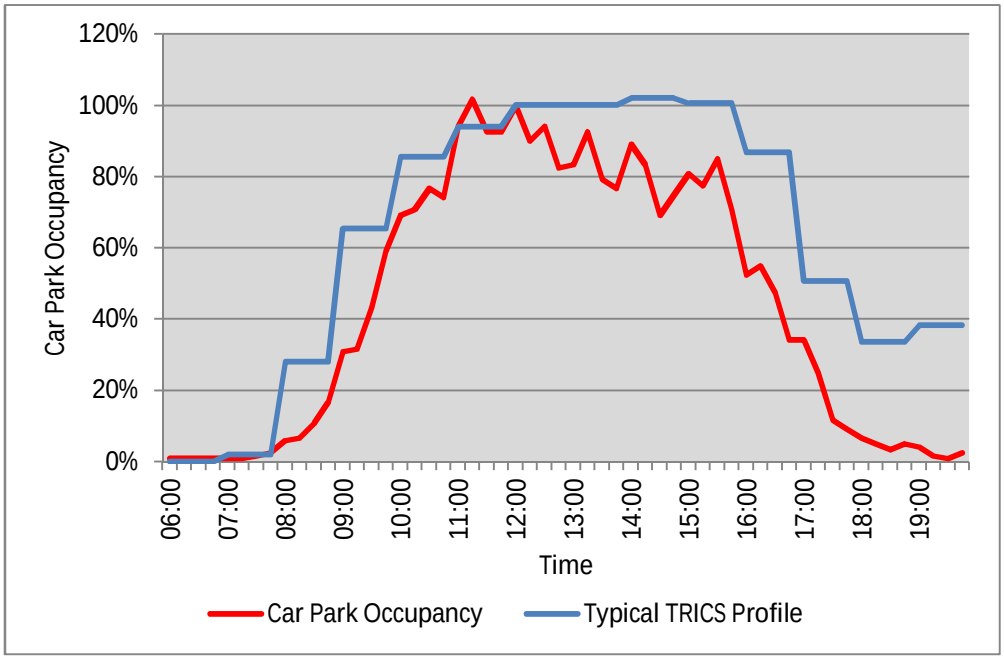
3.7.2 The weekly daily parking profile for Forest Centre western car park is shown in Figure 3.3 below. The car park reached capacity at 14:15 with occupancy exceeding 100 vehicles from 11:00 onwards. The car park starts to fill rapidly for 08:30 and demand decreases from 16:30.

Figure 3.3 Weekday Daily Parking Profile



3.7.3 The Saturday daily parking profile for Forest Centre western car park is shown in Figure 3.4 below. Demand for parking increases significantly from 08:15 reaching a peak at 11:15. Demand slowly drops until 15:30 before dropping rapidly to below 20 vehicles by 17:30.

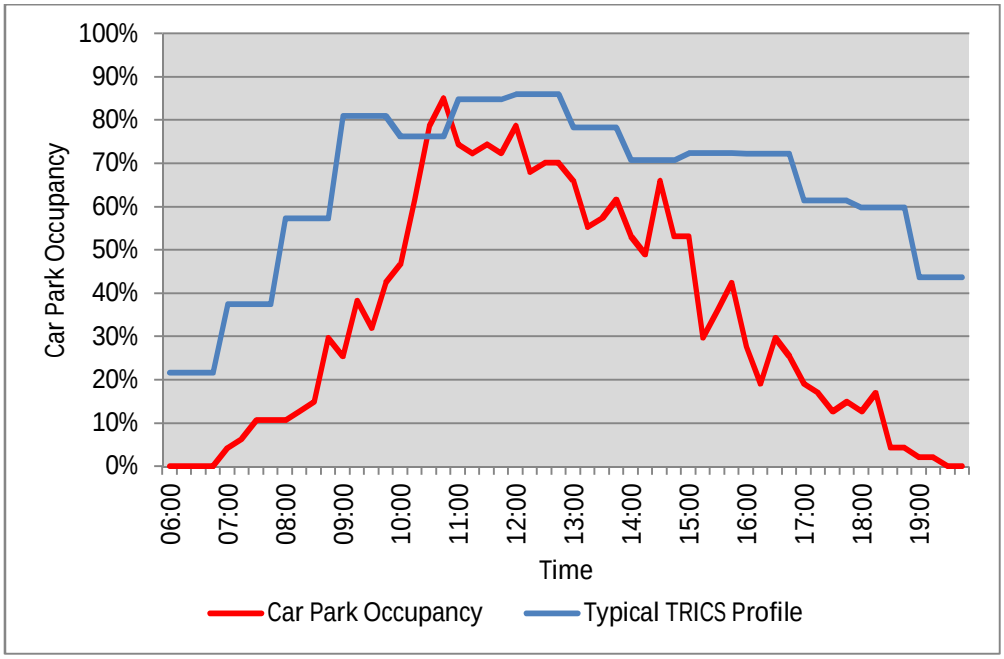
Figure 3.4 Saturday Daily Parking Profile



FOREST CENTRE - MIDDLE CAR PARK

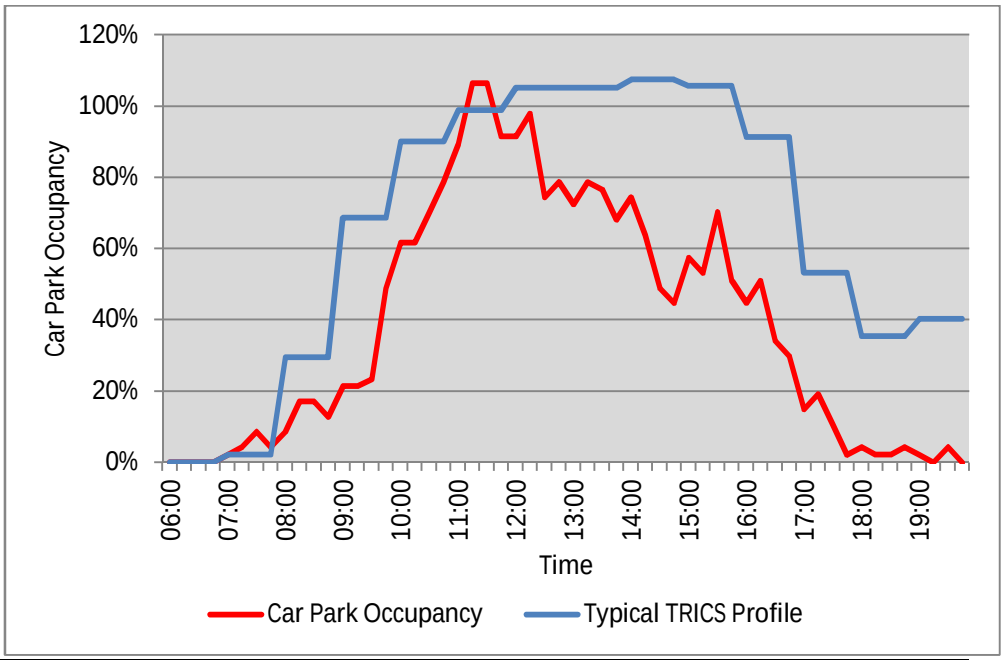
3.7.4 The weekly daily parking profile for Forest Centre middle car park is shown in Figure 3.5 below. Peak demand occurs at 10:45 steadily rising from 08:00. Demand slowly drops throughout the rest of the day with no pronounced dip unlike the western car park.

Figure 3.5 Weekday Daily Parking Profile



3.7.5 Figure 3.6 shows the Saturday daily parking profile for middle car park. Demand for parking increases significantly from 09:30 reaching a peak at 11:15 with 50 vehicles. Demand slowly drops and is almost empty by 18:00.

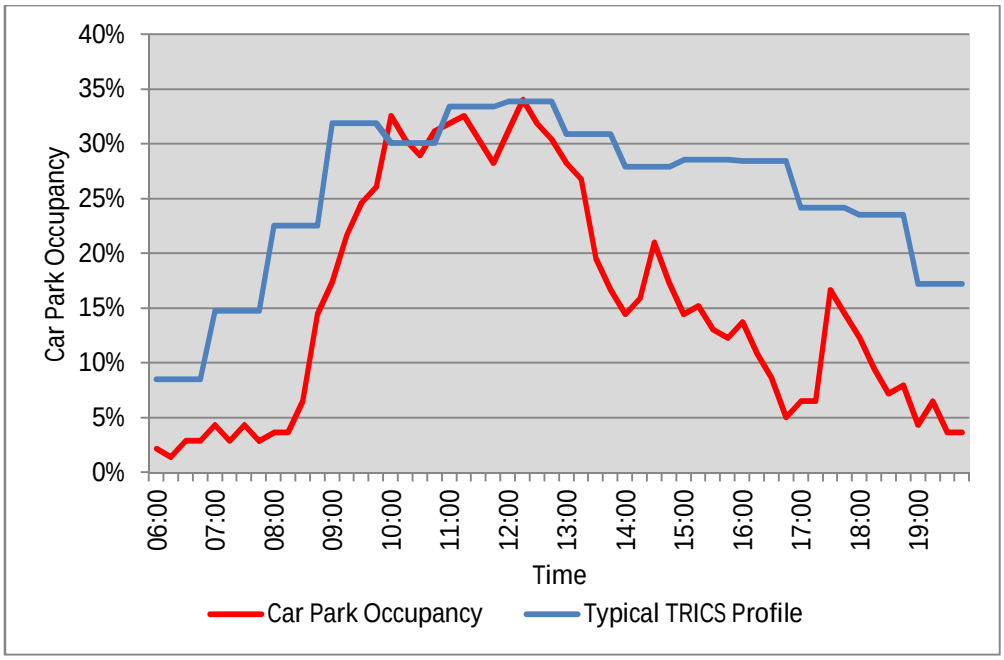
Figure 3.6 Saturday Daily Parking Profile



FOREST CENTRE - EASTERN CAR PARK

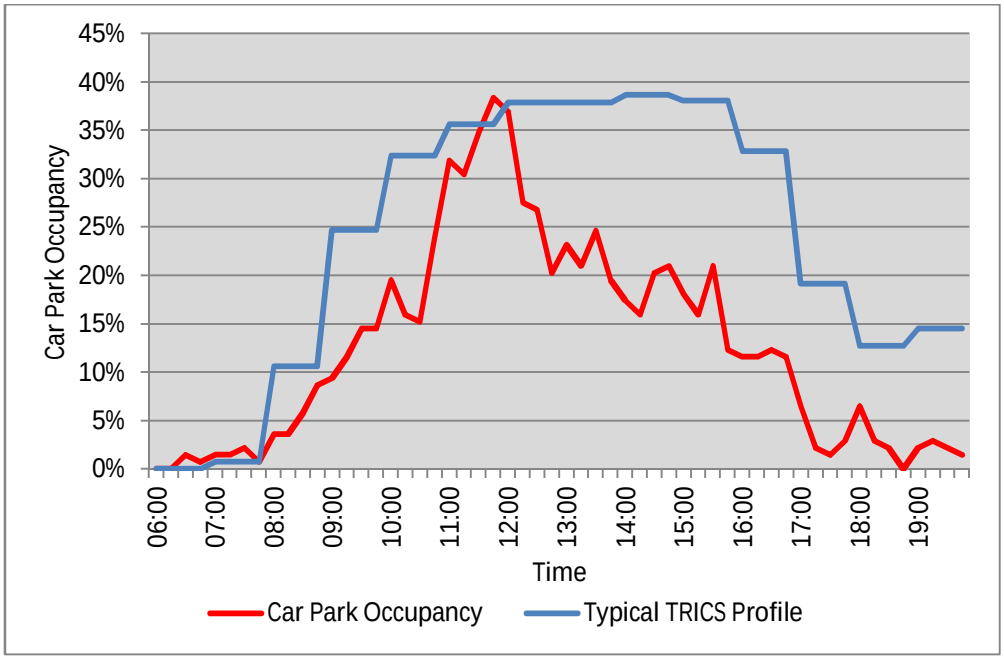
3.7.6 The weekly daily parking profile for Forest Centre eastern car park is shown in Figure 3.7 below. Demand for this car park is well below capacity reaching a plateau of approximately 30% occupancy at 10:00 Demand slowly drops from 12:00 with no pronounced dip.

Figure 3.7 Weekday Daily Parking Profile



3.7.7 Figure 3.8 shows the Saturday daily parking profile for eastern car park. Again demand for this car park is well below capacity reaching a peak at 11:45. The car park is almost empty by 17:15.

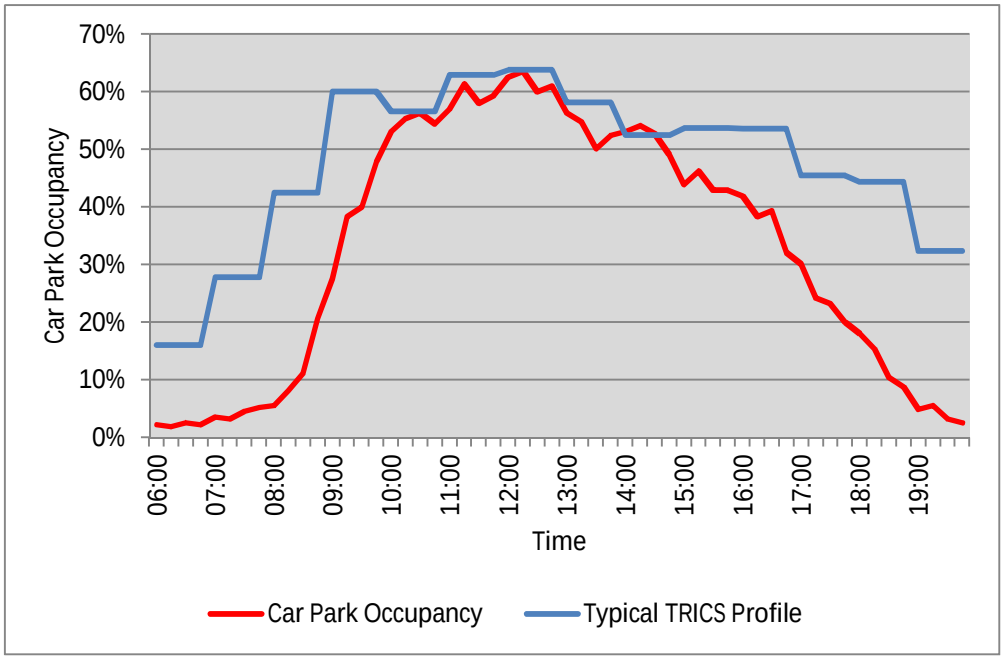
Figure 3.8 Saturday Daily Parking Profile



FOREST CENTRE CAR PARKS COMBINED

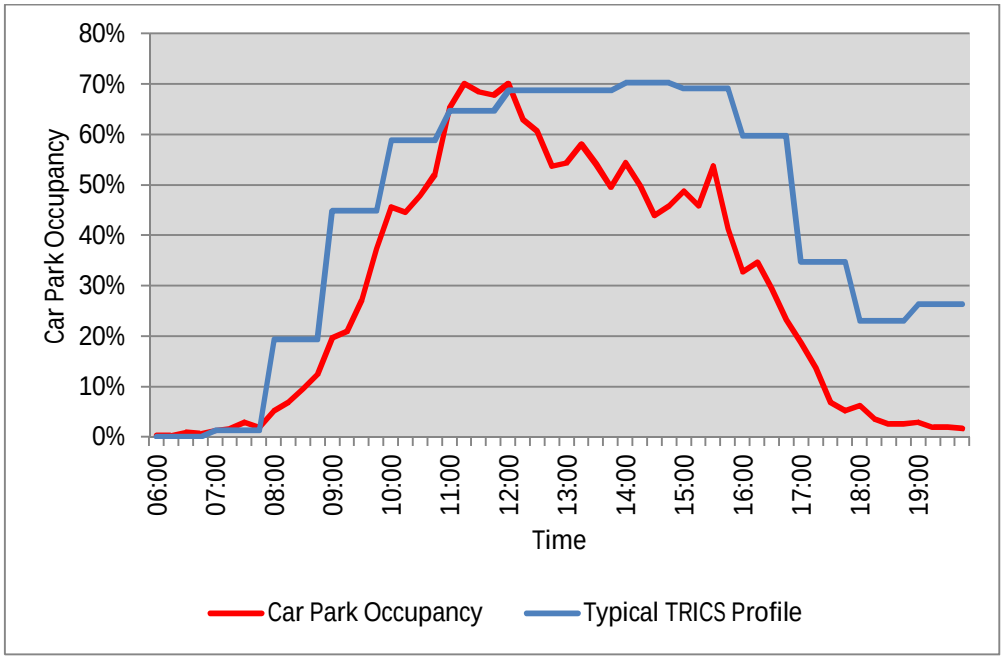
3.7.8 Daily profile for a combination of the three Forest Centre car parks has been presented with weekly daily parking profile shown in Figure 3.9 below. This illustrates how the demand for all Forest Centre car parks is below capacity overall reaching just above 60% occupancy by 11:00 and gradually reducing to below 20% after 18:00.

Figure 3.9 Weekday Daily Parking Profile – Forest Centre Car Parks Overall



3.7.9 Figure 3.10 shows the Saturday daily parking profile for all Forest Centre car parks combined. Demand for parking increases steadily from 08:00 reaching a peak at 11:15 with 214 vehicles. Demand slowly drops and is almost empty by 18:00.

Figure 3.10 Saturday Daily Parking Profile – Forest Centre Car Parks Overall



PARKING OCCUPANCY SUMMARY

3.7.10 The parking occupancy surveys have identified that demand for parking tends to not occur until circa 08:30 and drops to below 10% occupancy by 18:00. Overall parking demand remains consistent during a weekday and on Saturday, with average peak occupancy across all Forest Centre car parks equating to 68% and 74% respectively. With the level of spare occupancy between 18:00 and 07:00 there is real potential for residential parking demand to park within these central car parks overnight, with appropriate duration restrictions in place.

3.8 STRATEGY DEVELOPMENT CONSULTATION

3.8.1 Stakeholder engagement has been undertaken to inform the development of the Walking, Cycling and Parking strategies. A consultation strategy was approved by HCC in early January 2012. This section provides an outline of the consultation process and a summary of the outputs of the consultation undertaken to date.

CONSULTATION PROCESS

3.8.2 The consultation process has been commenced in two stages, allowing firstly for stakeholder and public consultation to inform the development of the draft transport strategies (Stage 1). Following this, a second stage provided an opportunity for stakeholders to comment on the draft strategies before they are finalised.

3.8.3 Stage 1 consultation was carried out through two community drop-in sessions held in early January, which were publicised by the local media to enable the community to feed into the development of the draft strategies. Additionally, a paper and web-based questionnaire was designed to gather feedback on the Masterplan proposals in relation to barriers and potential solutions to walking, cycling and parking issues. This was distributed during the community drop-in sessions and publicised through the Eco-town website.

3.8.4 Following the community drop-in sessions, WSP invited a range of stakeholders to attend a workshop as a final process of the Stage 1 consultation.

SUMMARY OF STRATEGY DEVELOPMENT CONSULTATION OUTCOMES

3.8.5 As a result of the consultation process, it has been established that there is currently a generous supply of free car parking in Whitehill & Bordon. With the increased pressure for parking associated with the proposed Eco-town, it is important to derive a balance between the contrasting needs of different users, including existing and future residents and businesses. The following key themes emerged from the consultation process, which need to be addressed by the parking strategy:

- Pressures on existing residential parking are deemed be due to insufficient private off-street provision, which in turn give rise to safety concerns and create difficulties for pedestrians and cyclists.
- Stakeholders have expressed the need for better enforcement, to tackle the above issue but conversely measures such as permit schemes would not be favourable to residents. However, enforcement measures would be essential in order to tackle this issue, as the problems are due to the sheer volume of vehicles since many households own two or more vehicles;
- The need for security and / or complementary measures in car parks to reduce antisocial behaviour and fear of crime;
- Provision for the elderly and mobility impaired – ensuring that some parking is located in the centre of the town;
- A desire to maintain a supply of free car parking to sustain the economic viability of the shops in the existing and future extended town centre proposed in the Masterplan;
- Concerns that parking on verges/green spaces will increase if only limited parking is provided for the new dwellings;
- The need for cheap (free), frequent public transport services and provision of walking and cycling infrastructure from the outset to minimise car use.

3.9 BASELINE CONDITIONS SUMMARY

3.9.1 This chapter has gathered information on the current levels of car ownership within Whitehill & Bordon, and has provided a summary of the existing on and off-street public/private car parking provision. An indication of the current car park occupancy levels has been provided, showing that many public car parks are currently under-utilised and that there is potential for these spaces to be shared with proposed land uses.

3.9.2 A summary of the results from the stakeholder and public consultation process so far has highlighted the issues and barriers to current and future parking, and has indicated where solutions should be sought as part of the parking strategy.

4 Eco-Town Growth Proposals

4.1 INTRODUCTION

4.1.1 The Draft Framework Masterplan is a strategic framework showing how growth could occur in Whitehill & Bordon in the 20-25 years. It is the starting point for a wide range of more detailed studies culminating in planning applications over the coming years. The Framework Masterplan is an overall vision for the physical, social and economic and environmental improvement of the town to ensure that development takes place in a considered manner to deliver community benefits for the town as a whole.

4.1.2 The aim of the Masterplan specific to transportation is twofold:

- To establish sustainable patterns of movements to and within the town; and
- To minimise use of the private car through the provision of appropriate, appealing and realistic alternatives.

4.2 MASTERPLAN DEVELOPMENT SCHEDULE

4.2.1 In summary, the Masterplan proposes:

- Mixed use town centre with circa 30,000sqm retail and supporting uses;
- Up to three new primary schools and early years centres and a new children's centre;
- Re-building of Mill chase Community Technology College on a new site with room for later expansion;
- Skills training and further education facilities;
- Around 4,000 new homes within identified new residential neighbourhoods and the town centre built to a zero carbon standard;
- A public sports hub with leisure centre and pitches;
- Local healthcare and emergency services;
- Around 70,000sqm eco-business park floor space and opportunities across the masterplan for the creation of at least 5,500 new jobs;
- Around 127 hectares of new public greenspace;
- A central public transport hub and a modern public transport systems;
- Retrofitting of existing homes and businesses to improve energy;
- A biomass powered CHP plant; and
- Walking and Cycling Provision.

4.3 MASTERPLAN TRANSPORTATION PROPOSALS

4.3.1 The Framework Masterplan outlines the following key elements for the Transport Strategy:

- Public Transport spine along the High Street (existing A325), with pedestrian priority area in the town centre to reinforce integration between the existing and proposed extension to the town;

- A central hub in the town centre, where all local bus services interconnect and information is provided on a range of sustainable travel options;
- A new through street connecting the development sites will become the primary vehicular route taking traffic off the existing High Street route;
- Green Loop and Grid for pedestrians and cyclists connecting all residential areas to key facilities;
- Overall 50% parking reduction to existing EHDC standards phased to suit development coming forward;
- Car free zone within heart of town centre, where no parking will be permitted (disabled and servicing access only);
- High quality bus routes servicing the three levels of passenger usage – strategic, local, town wide;
- A safe guarded rail corridor for future development and an indicative station location close to the town centre;
- A network of clear and direct cycle routes connecting Whitehill & Bordon with surrounding towns, villages and stations; and
- Traffic management strategy for surrounding villages.

4.4 PARKING PROPOSALS

4.4.1 The Framework Masterplan outlines its vision for parking provision within the proposed Eco-town. It recognises that providing the right balance of parking will be crucial in creating a successful new development, and suggests reducing parking provision by up to 50% from the existing maximum parking standards, once public transport infrastructure is installed. Where current standards allow for up to 3 spaces per dwelling, it is proposed that this should be gradually reduced to 1 space per dwelling, and even lower where alternative sources of transport are readily accessible.

4.4.2 In terms of types and levels of parking provision, the Masterplan envisages a new Eco-town where cars do not dominate the local streets, so car parking should fit sympathetically within the new development. Cycle parking should be located closer to front doors than car parking to encourage the use of cycles over the private car. In addition, central areas should promote a pedestrian focus with a suggested car free zone in the heart of the town centre. Although provision should be made for parking in the town centre for viability, the Masterplan suggests that it is not placed in the central zone where only service vehicles will be allowed access at certain times of the day.

4.5 SUMMARY

4.5.1 This section has outlined the overall vision of the Framework Masterplan and included its key objectives to comprise a transport strategy which supports the aspiration to deliver an exemplar Eco-town at Whitehill & Bordon. A package of measures to support more sustainable travel choices have been put forward, whilst the desirable parking provision looks to reduce current standards by up to 50% following the facilitation of ‘greener’ methods.

5 Unrestricted Future Parking Demand

5.1 INTRODUCTION

5.1.1 This section presents the assessment methodology used to derive future parking demand for the proposed Whitehill & Bordon Eco-town. It should be noted, on the basis that there has been a revised Masterplan during the production of this document, the results in the tables contained in this chapter are subsequently updated in Chapter 7. The chapters' content should be solely viewed as a guide to the methodology used.

5.1.2 The section firstly considers likely unfettered parking demand for the land uses defined in Section 4. This is based on typical parking provision rates provided within other UK developments through interrogation of the TRICS 2012(a)v6.9.1 (Dec 2011) database. This analysis is then broken down to provide a daily profile of parking accumulation to identify peak parking demand and provides a breakdown against journey purpose. This allows further consideration of how these journey purposes can be targeted to provide a reduced overall parking provision and to meet Eco-town policy objectives.

5.2 UNFETTERED DEMAND LED APPROACH TO PARKING PROVISION

5.2.1 Firstly an assessment of parking demand for each of the individual land uses included within the Whitehill & Bordon Eco-town Masterplan is presented below. This review does not at this stage consider multi journey purpose trips and the resulting reduction of parking demand this would lead to.

5.3 NEW EMPLOYMENT LAND USES

5.3.1 The Masterplan outlines four specific sites to be developed for employment land uses as part of the Whitehill & Bordon proposals. These sites consist of an Eco-Business Park, employment within Mixed-Use areas at two locations, and a commercial extension to the Town Centre. Unfettered future parking demand is reviewed individually for each of these sites to establish the overall peak parking demand, as summarised below;

- Louisburg will be a new Eco-business park site providing a northern gateway to the town. It will comprise of Light Industrial, Office, High Tech and Small Business units providing approximately 1100 new jobs.
- Viking Mixed Use Development will be an extension to an existing business park to the south of the Town Centre bringing new employment opportunities, along with some leisure and residential uses. The additional employment land uses within the area will provide approximately 410 new jobs.
- An employment area consisting of small business units and offices will be located to the western side of the expanded Town Centre. This will stretch to the west of Chalet Hill, west of the junction between High Street and Budds Lane, and will provide approximately 700 new jobs.
- The Quebec Mixed Use area is proposed to include Light Industrial, Office, High Tech and Small Business units to the east of Camp Road and is set to replace the existing MOD barracks located there. The site will include residential dwellings and is forecast to provide approximately 275 new jobs just north of the Town Centre.

FORECAST EMPLOYMENT BUSINESS PARK PARKING DEMAND

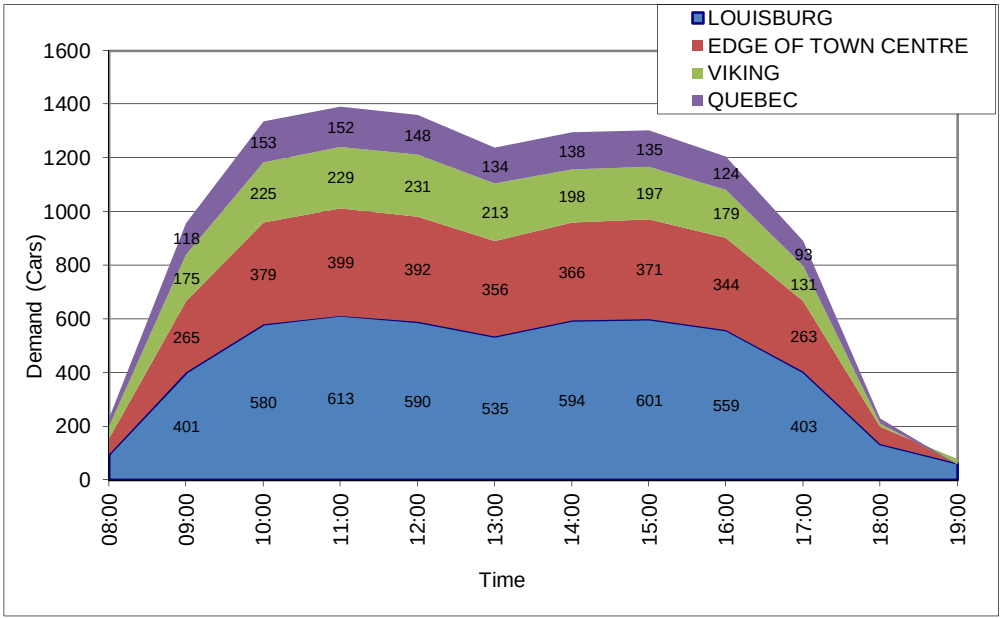
5.3.2 In order to estimate the likely parking demand which will be associated with the proposed new employment sites identified above, vehicular trip rates have been derived from the TRICS 2012(a)v6.9.1 (Dec 2011) database for sites which share a similar number of employees to those proposed. TRICS output from this analysis can be found in Appendix B.

5.3.3 Using the information collated from TRICS, a daily parking profile has been generated of the accumulation in car parking demand for each of the new employment areas. Table 5.1 presents this forecast accumulation for these employment sites with graphical output included as Figure 5.1.

Table 5.1: Car Park Accumulation at Proposed Employment Sites

Time	Louisburg	Edge of Town Centre	Viking	Quebec	Overall
07:00-08:00	96	59	46	31	**232**
08:00-09:00	401	265	175	118	**959**
09:00-10:00	580	379	225	153	**1337**
10:00-11:00	613	399	229	152	**1393**
11:00-12:00	590	392	231	148	**1361**
12:00-13:00	535	356	213	134	**1238**
13:00-14:00	594	366	198	138	**1296**
14:00-15:00	601	371	197	135	**1304**
15:00-16:00	559	344	179	124	**1206**
16:00-17:00	403	263	131	93	**890**
17:00-18:00	134	65	12	19	**230**
18:00-19:00	64	13	-19	1	**59**

Figure 5.1: Car Park Accumulation at Proposed Employment Sites



Opportunities for shared use of spaces where employment and residential land uses are adjacent

5.3.4 Figure 5.1 demonstrates that between 18:00 and 08:00 the following day, parking demand for the defined employment areas remains below 15% of peak parking capacity. Since these employment areas are located in proximity to proposed residential uses within the Whitehill & Bordon Eco-town Masterplan there is potential for a proportion of the non-utilised parking spaces (after conventional employment hours) to be allocated as shared use and assigned to serve residential parking demand. The opportunity for these practices to be adopted and the associated management systems which would need to accompany shared use provision is discussed in Chapter 6 below.

5.4 RETAIL AND LEISURE LAND USES

5.4.1 As part of the Whitehill & Bordon Eco-town Masterplan proposals, the extended Town Centre will consist of a mix of retail and leisure land uses in addition to areas of high density residential units. Table 5.2 provides a breakdown in the provision of new jobs across the various Town Centre land uses (page 160 of the Masterplan).

Table 5.2: Proposed Extended Town Centre Retail and Leisure Uses

Land Use	Floorspace (sqm)	Jobs
A1 Retail	24,046	1002
A2 Financial / Professional Services	2,805	140
A3 / A5 Restaurants, Food, Takeaway, Pubs	4,008	308
B1 Town Centre Offices	10,113	506
C1 Hotel	n/a	50
Leisure Park (Edge of Centre / Viking Park Commercial Leisure)	n/a	62

5.4.2 To estimate the likely parking demand which will be associated with the extended Town Centre, trip rates have been extracted from the TRICS database for each individual land use. It should be noted at this stage no account for combined retail and/or leisure trips has been made. Using the TRICS outputs a daily profile car parking accumulation has been forecast. Table 5.3 presents this accumulation for each land use and for the extended Town Centre as a whole. TRICS output from this analysis can be found in Appendix B.

Table 5.3: Unfettered Car Park Accumulation for Extended Town Centre

Time	A1 Retail	A2 Finance	A3 Food	B1 Office	C1 Hotel	Leisure Park	Overall
07:00-08:00	40	6	8	37	28	0	119
08:00-09:00	173	20	12	151	21	0	377
09:00-10:00	399	46	45	222	22	0	734
10:00-11:00	558	68	69	231	21	13	960
11:00-12:00	581	86	143	232	20	23	1085
12:00-13:00	703	115	276	216	18	37	1365
13:00-14:00	627	112	274	217	18	46	1294
14:00-15:00	592	98	189	217	19	61	1176
15:00-16:00	588	96	178	200	18	65	1145
16:00-17:00	471	93	199	127	19	73	982
17:00-18:00	391	99	271	32	23	79	895
18:00-19:00	202	95	310	6	29	96	739
19:00-20:00	112	95	337	0	34	120	698
20:00-21:00	112	90	298	0	36	125	661
21:00-22:00	0	0	182	0	36	119	336
22:00-23:00	0	0	100	0	33	84	218
23:00-24:00	0	0	7	0	35	43	85

DISAGGREGATING EMPLOYMENT TRIPS ASSOCIATED WITH RETAIL AND LEISURE LANDUSES

5.4.3 All land uses proposed for the Extended Town Centre will contain an element of employment commuting trips. An assessment has been undertaken to quantify the commuting parking demand associated with retail and leisure land uses in the Extended Town Centre since these frequently undertaken trips could potentially be targeted for mode shift and reduced parking demand. To undertake the assessment Department for Transport (DfT) Table NTS0502 'Trip start time by trip purpose' has been used to disaggregate the proportion of commuting, shopping and leisure/entertainment trips by time of day.

5.4.4 The Masterplan states that an additional 2068 jobs will be provided by the Extended Town Centre. Through the application of the DfT's 'Trip start time by trip purpose' data to Table 5.3, it is possible to determine what proportion of the Extended Town Centre's car park accumulation will come from commuting trips, as shown in Table 5.4.

Table 5.4: Proportion of Commuting Trips for Extended Town Centre

Time	A1 Retail	A2 Finance	A3 Food	B1 Office	C1 Hotel	Leisure Park	Overall
07:00-08:00	38	6	8	37	26	0	115
08:00-09:00	158	18	11	151	19	0	358
09:00-10:00	298	34	37	222	18	0	609
10:00-11:00	329	40	51	231	15	10	675
11:00-12:00	288	43	94	232	13	15	685
12:00-13:00	318	52	168	216	11	22	787
13:00-14:00	269	48	157	217	10	26	728
14:00-15:00	243	40	104	217	10	33	648
15:00-16:00	240	39	95	200	10	35	618
16:00-17:00	200	40	107	127	10	39	524
17:00-18:00	180	45	150	32	13	44	464
18:00-19:00	95	45	165	6	15	51	377
19:00-20:00	52	44	166	0	17	59	338
20:00-21:00	52	42	137	0	17	57	305
21:00-22:00	0	0	78	0	15	51	145
22:00-23:00	0	0	41	0	14	34	89
23:00-24:00	0	0	3	0	14	16	33

5.4.5 Table 5.4 indicates that the maximum accumulation would occur between 12:00 – 13:00, with 787 spaces required for commuting related trips. This equates to 58% of town centre spaces required for commuting trips.

5.4.6 When added to the car park accumulation at employment sites (shown in Table 5.1), the maximum car parking demand arising from commuting trips within Whitehill & Bordon would be 2068 spaces and occur between 10:00 – 11:00. This would result in a maximum parking demand of 0.45 spaces per employee, for a total of 4550 jobs.

5.5 UNFETTERED FUTURE RESIDENTIAL PARKING DEMAND

5.5.1 This section presents a "status quo" assessment of residential parking demand associated with new dwellings proposed within the Whitehill & Bordon Eco-town Masterplan. The Masterplan consists of 3 classes of residential development which are to be developed in the proposed Eco-town as follows;

- '**Green Views'** – 2 to 3 bedroom houses and flats close to the town centre and transport links. It is proposed that 1020 new homes will be provided in these areas, and an emphasis will be on smaller family homes with a target mix of 70% houses and 30% flats. In addition, 580 new homes will be built within the Extended Town

Centre, with a target mix of 90% flats and 10% houses. This translates to 772 houses and 828 flats with 2-3 bedrooms.

- '**Green Streets'** - 1850 new 3-4 bedroom properties are proposed for the majority of the Technical Training Area, Louisburg Barracks and north of Budds Lane. Housing types in 'Green Streets' areas would include townhouses, terraces, mews, duplexes and apartments, and a smaller number of larger detached and semi-detached properties. Around 85% houses to 15% flats is the target mix for these neighbourhoods, which translates as 1572 houses and 278 flats.
- '**Green Roots'** - 550 new 4-5 bedroom houses to be located at the edge of the town close to Bolley Avenue and parts of the Louisburg Barracks. Housing types will range from larger villas and semi-detached properties through to small cottage terraces, and will be of 1-3 storeys in height.

5.5.2 With the existing level of car ownership by dwelling type known (see section 3.2), this is applied to the development schedule for the three different sized housing types for the 'Green Views, Green Streets and Green Roots' areas.

5.5.3 Table 5.5 shows the forecasted unfettered car ownership for future residential development in Whitehill & Bordon which overall equates to a parking ratio of 1.32 per dwelling. Greatest parking demand comes from Green Streets, followed by Green Views which offers opportunity to reduce parking demand based on the dwelling mix and proposed central locations.

Table 5.5: Unfettered Car Ownership for Proposed Residential Development

Dwelling Type		Green Views	Green Streets	Green Roots	Overall
House	Dwellings	772	1572	550	2894
	Average car ownership levels per dwelling	*1.271*	*1.473*	*1.761*	-
	Cars	**981**	**2316**	**969**	**4266**
Flat	Dwellings	828	278	0	1106
	Average car ownership levels per dwelling	*0.894*	*0.970*	*N/A*	-
	Cars	**740**	**270**	**0**	**1010**
Total		**1721**	**2586**	**969**	**5276**

5.5.4 A daily profile of generated trips associated with the residential element of the development has been derived using the TRICS database, with output included within Appendix B. Since the residential surveys contained within TRICS span the hours of 07:00 – 19:00, an assumption has been made after 19:00 that the parking accumulation associated with residential land uses will gradually increase to its peak by 21:00. Peak accumulation for residential parking may occur later than this, however for purposes of robustness, the peak has been assumed at 21:00 for this assessment. Table 5.6 presents this data.

Table 5.6: Residential Trip Generation

Time	Arrival Rate	Arrivals	Departure Rate	Departures	TOTAL ACCUMULATION*
					5012 (before 07:00)
07:00-08:00	0.069	346	0.192	962	4396
08:00-09:00	0.132	662	0.318	1594	3464
09:00-10:00	0.146	732	0.182	912	3284
10:00-11:00	0.117	586	0.142	712	3158
11:00-12:00	0.122	611	0.134	672	3097
12:00-13:00	0.157	787	0.153	767	3117
13:00-14:00	0.155	777	0.156	782	3112
14:00-15:00	0.153	767	0.166	832	3047
15:00-16:00	0.239	1198	0.183	917	3328
16:00-17:00	0.26	1303	0.176	882	3749
17:00-18:00	0.319	1599	0.186	932	4416
18:00-19:00	0.269	1348	0.199	997	4767
19:00-20:00	-	-	-	-	4592
20:00-21:00	-	-	-	-	4416
21:00-22:00	-	-	-	-	4416
22:00-23:00	-	-	-	-	4416
23:00-24:00	-	-	-	-	4416

* Based on 5276 vehicles, assuming 95% accumulation at 07:00 for 4000 dwellings

5.6 TOTAL UNFETTERED FUTURE DEMAND

5.6.1 Drawing together all future unfettered parking demands arising from the various land uses outlined above, it is possible to determine the total unfettered demand for Whitehill & Bordon once the future development is implemented. Table 5.7 summarises the future demand using the analysis presented in this chapter.

Table 5.7: Total Future Car Parking Demand

Land Use	Maximum Future Parking Demand
Employment Sites	1393
Extended Town Centre (inclusive of retail & office use elements)	1365
Proposed Residential	5276
TOTAL	**8034**

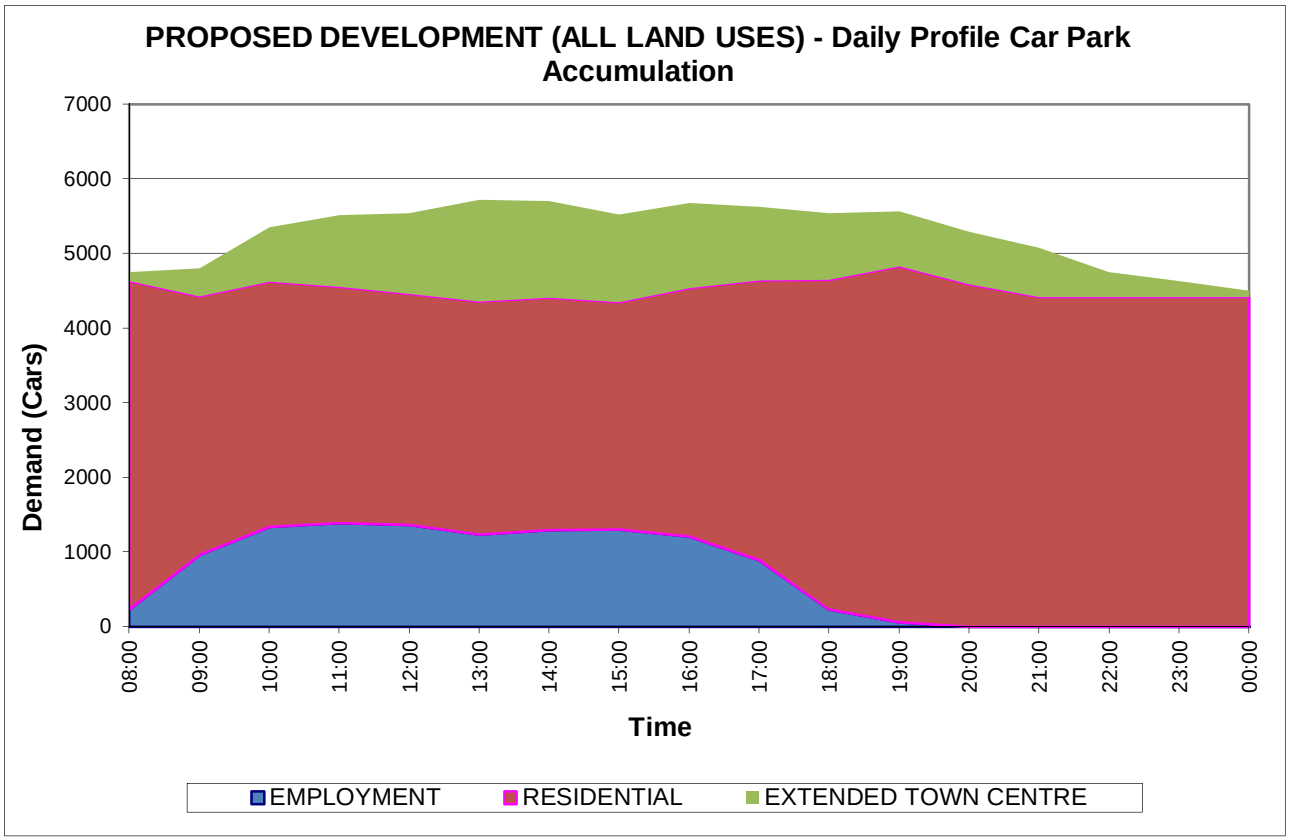
5.6.2 A summary of all daily profiles relating to the proposed development has been tabulated in order to highlight the fluctuations in parking demand throughout the day. Table 5.8 presents this data.

Table 5.8: Summary Daily Profile for Future Development

Time	Employment	Extended Town Centre	Residential	TOTAL
07:00-08:00	232	119	4396	4747
08:00-09:00	959	377	3464	4800
09:00-10:00	1337	734	3284	5355
10:00-11:00	1393	960	3158	5511
11:00-12:00	1361	1085	3097	5543
12:00-13:00	1238	1365	3117	5720
13:00-14:00	1296	1294	3112	5702
14:00-15:00	1304	1176	3047	5527
15:00-16:00	1206	1145	3328	5679
16:00-17:00	890	982	3749	5621
17:00-18:00	230	895	4416	5541
18:00-19:00	59	739	4767	5565
19:00-20:00	0	698	4592	5290
20:00-21:00	0	661	4416	5077
21:00-22:00	0	336	4416	4752
22:00-23:00	0	218	4416	4634
23:00-24:00	0	85	4416	4501

5.6.3 Figure 5.2 illustrates the daily profile of accumulation for all proposed land uses in the new Eco-town.

Figure 5.2: Daily Profile of Accumulation for Development Proposals



5.6.4 Figure 5.2 demonstrates that there are opportunities to assign parking spaces in the proposed Whitehill & Bordon for shared use between residential, and employment/ extended town centre land uses.

5.7 SUMMARY

5.7.1 The main points from the future demand assessment can be summarised as follows:

- The peak in parking accumulation associated with proposed employment sites will occur between 10:00 – 11:00, with 1393 spaces required;
- The peak in parking accumulation associated with the proposed extended town centre will occur between 12:00 – 13:00, with 1365 spaces required;
- The peak in parking accumulation associated with the 4000 proposed new dwellings will occur between 18:00 – 19:00, with 4767 spaces required; and

5.7.2 As a result, the overall peak demand for parking in the proposed eco-town will occur between 12:00 – 13:00, with a total of 5720 spaces required before measures to reduce parking demand are explored.

6 Reducing Parking Demand – Options Appraisal

6.1 INTRODUCTION

6.1.1 This chapter considers the potential of a range of parking provision approaches, demand management measures and wider smarter choices initiatives for reducing parking demand within the Whitehill & Bordon Eco-town. These are then individually applied to the unfettered parking demand future baseline presented in Chapter 5 to demonstrate the levels of reduction that can be achieved.

6.1.2 It should be noted, on the basis that there has been a revised Masterplan during the production of this document, the measures explored in this chapter are based on the superseded results of Chapter 5. Therefore, the computed impact of the explored measures is subsequently presented in Chapter 7 based on the revised Masterplan. This chapters' content should be solely viewed as a guide to the methodology used.

6.1.3 The chapter firstly considers the impact of the forecast trip internalisation rate and the effect of cross visitation to retail and leisure land uses. Secondly a review of parking provision methods is presented followed by consideration of parking management approaches. These are considered within the context of what impact they have to relevant land uses and associated potential reduction of unfettered parking demand forecasts presented in Chapter 5.

6.1.4 Finally, a summary matrix table outlining the performance of the measures against a range of criteria is provided to demonstrate which measures will be most compatible with the Whitehill & Bordon Eco-town Masterplan.

6.2 ECO-TOWN TRIP INTERNALISATION AND CROSS-VISITATION

6.2.1 This section considers trip demand changes attributable to journeys remaining internal to Whitehill & Bordon Eco-town as a result of the range of facilities and services being available within the proposed Eco-town masterplan, thus removing the necessity for residents to travel beyond the Eco-town. Trip Internalisation is considered as a sensitivity test as part of the Whitehill & Bordon Transport Assessment. This section also reviews the impact cross-visitation (visiting a range of land uses within a single trip) has on the demand for parking within the Eco-town.

TRIP INTERNALISATION

6.2.2 There are two factors which significantly impact on travel patterns as follows:

- Proximity of residential and employment land uses to each other; and
- Accessibility of public transport services.

6.2.3 Integrating employment and residential areas closely will reduce travel distances for those living and working within Whitehill & Bordon. Similarly the proximity of public transport connections to residential and employment uses and density of development will influence travel within, from and to Whitehill & Bordon.

6.2.4 Internalisation of employment trips will be achieved by creating jobs within the proposed Eco-town for its new and existing residents, provided that new jobs complement the skills set and salary expectations of the Whitehill & Bordon residents.

6.2.5 As mentioned above, in order to achieve trip internalisation, the arrangement of the proposed development layout will need to illustrate significant integration between housing and employment uses. As part of the development proposals outlined in the

masterplan, it is shown that many of the proposed employment sites will be located adjacent to, or amongst proposed residential development, such as the sites at Louisburg, Quebec, Viking and the Edge of Town Centre. The integration of housing and jobs will create the potential for many residents to seek employment within Whitehill & Bordon, resulting in a medium to high level of trip internalisation.

6.2.6 The degree to which trip internalisation will affect traffic impact in absolute terms is uncertain, however, the Transport Assessment considers two sensitivity tests with future residential trip containment targets of 30% and 50%. With respect to employment trips arising from the town, it is likely that trip containment targets will be more difficult to achieve in the early years, since existing residents will have already established commuting patterns to employment areas outside of Whitehill & Bordon. With the view to providing a robust assessment, it would be reasonable to assume that a minimum of 20% reduction in external trips would occur with a medium level of trip internalisation, with the possibility of a higher level of 30%. This potentially reduces non-residential parking demand as shown in Table 6.1 below.

Table 6.1: Potential Impact of Trip Internalisation

Time	Employment			Extended Town Centre		
	Total	-20%	-30%	Total	-20%	-30%
07:00-08:00	232	185	162	119	95	84
08:00-09:00	959	767	671	377	302	264
09:00-10:00	1337	1069	936	734	587	514
10:00-11:00	1393	1114	975	960	768	672
11:00-12:00	1361	1088	952	1085	868	759
12:00-13:00	1238	991	867	1365	1092	956
13:00-14:00	1296	1037	907	1294	1036	906
14:00-15:00	1304	1042	912	1176	941	823
15:00-16:00	1206	965	844	1145	916	801
16:00-17:00	890	712	623	982	786	688
17:00-18:00	230	184	161	895	716	627
18:00-19:00	59	47	41	739	591	517
19:00-20:00	0	0	0	698	559	489
20:00-21:00	0	0	0	661	529	463
21:00-22:00	0	0	0	336	269	235
22:00-23:00	0	0	0	218	175	153
23:00-24:00	0	0	0	85	68	60

6.2.7 Being entirely design-led, trip internalisation relates to the types and locations of employment opportunities within Whitehill & Bordon, the layout of the internal road network to facilitate local walking and cycling trips and the location and availability of schools and other community facilities. Demand management issues such as car clubs and levels of parking provision are considered later in this chapter.

CROSS-VISITATION TRIPS

6.2.8 Within mixed use developments with multiple retail and leisure uses in close proximity, there is potential for cross-visitation of trips. The TRICS Research Report (05/1 'Trip Attraction Rates of Developments with Multiple Retail and Leisure Uses) suggests that the greater the number of individual non-residential uses located in close proximity within one site, the greater the potential for cross-visitation with reductions in demand of up to 20%.

6.2.9 Since the proposed Eco-town masterplan includes a range of retail and leisure uses within the new Extended Town Centre a 20% reduction could reasonably be applied to A1, A2, A3 and the Leisure Park uses within the Extended Town Centre. The impact on parking demand for these land uses within the Extended Town Centre is presented in Table 6.2 below. It should be noted Office and Hotel uses have not been considered for cross-visitation and therefore parking demand remains as previously presented.

Table 6.2: Cross-Visitation Car Park Accumulation for Extended Town Centre

Time	A1 Retail	A2 Finance	A3 Food	B1 Office	C1 Hotel	Leisure Park	Overall
07:00-08:00	32	5	6	37	28	0	108
08:00-09:00	139	16	10	151	21	0	336
09:00-10:00	319	37	36	222	22	0	636
10:00-11:00	446	54	55	231	21	11	818
11:00-12:00	465	69	114	232	20	18	918
12:00-13:00	563	92	221	216	18	29	**1139**
13:00-14:00	502	90	219	217	18	37	1083
14:00-15:00	474	78	152	217	19	49	988
15:00-16:00	471	77	142	200	18	52	959
16:00-17:00	377	74	159	127	19	58	815
17:00-18:00	313	79	217	32	23	63	727
18:00-19:00	162	76	248	6	29	77	598
19:00-20:00	90	76	270	0	34	96	565
20:00-21:00	90	72	239	0	36	100	536
21:00-22:00	0	0	145	0	36	95	276
22:00-23:00	0	0	80	0	33	68	181
23:00-24:00	0	0	6	0	35	34	75

6.2.10 Based on the potential for cross-visitation within the Extended Town Centre the unfettered peak parking requirement reduces from 1365 spaces to 1139. This reduction is largely attributable to a reduction in retail parking demand which reduces from a peak of 703 spaces to 563.

6.3 ECO-TOWN PARKING PROVISION

INTRODUCTION

6.3.1 This section draws on best practice impacts achieved in exemplar case studies, which are included in Appendix A. It explores several methods which have proved successful elsewhere, and looks at how these can be applied to Whitehill & Bordon.

6.3.2 The manner in which car parking is accommodated within the Whitehill & Bordon Eco-town is to be reflective of the sustainability aspirations and ethos of the Eco-town Masterplan. The Eco-town will not necessarily follow conventional formats to providing parking but will adopt a range of approaches which seek to ultimately reduce the need to travel by car without necessitating zero car ownership. It is considered that the approaches should target reduced parking at trip ends as opposed to trip origins meaning car ownership by residents is not specifically penalised. The following items are considered within this section:

- Shared-Use parking arrangements;
- Parking Barns;
- Allocated and unallocated parking provision;
- Park and Ride;
- Car clubs;
- Disabled parking;
- Residential parking charges;
- Workplace Parking Levies; and
- Decriminalised Parking Enforcement (DPE) / (CPZ).

SHARED-USE PARKING ARRANGEMENTS

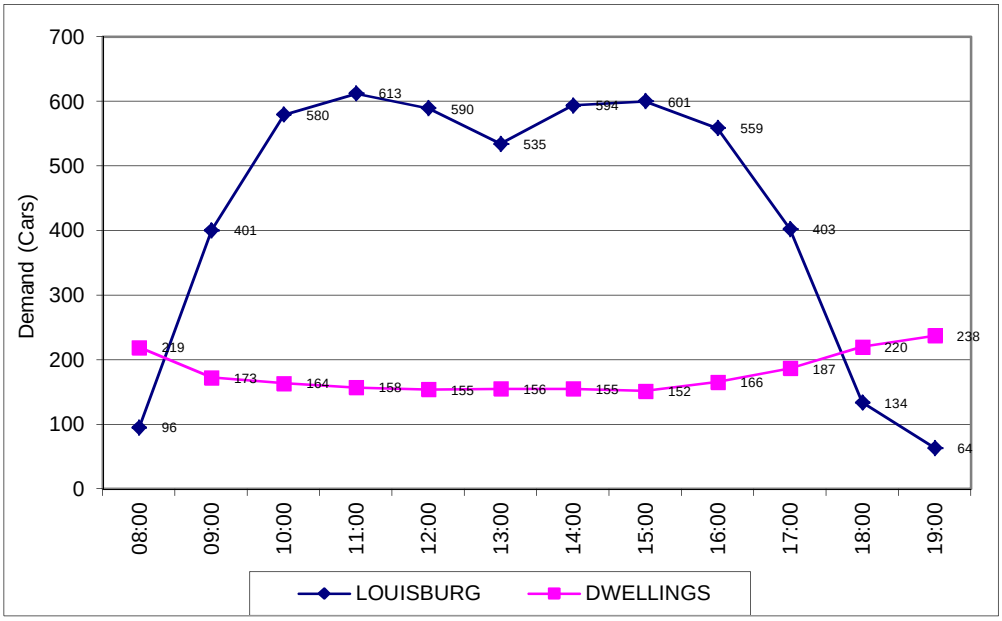
6.3.3 Shared-use parking arrangements combine parking provision for a range of land uses as opposed to providing them individually. Typically this is usual for non-residential uses with town centre car parks serving many land uses. This ensures that parking spaces remain well utilised across the full day with complimentary land uses calling on parking demand at varying times.

6.3.4 The potential for extending this principle to employment and residential uses is considered here within the context of the Eco-town masterplan. The four main employment sites (Louisburg, Edge of Town Centre, Viking and Quebec) are all located within or adjacent to residential areas, as shown on Figure 6.1. Parking provision could potentially be shared with demand for employment parking occurring generally between 08:00 and 18:00 with a proportion of residential demand generally occurring outside of these times.

6.3.5 To demonstrate this, an assessment has been undertaken to show the parking accumulation at a typical housing development (TRICS) and compared to parking accumulation forecasts for the extended town centre and four employment sites (refer to Figures 6.2 to 6.6 below). This is based on the Eco-town masterplan and an estimate of the number of dwellings in proximity to each employment site. For the purposes of this assessment these dwelling estimates are as follows:

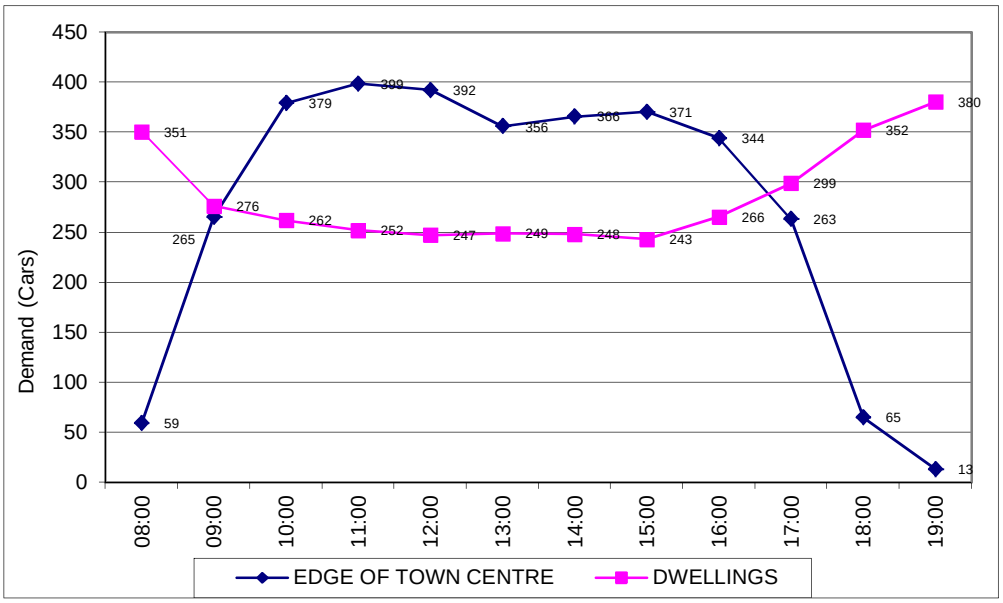
- Louisburg – 250 dwellings;
- Edge of Town Centre – 400 dwellings;
- Viking – 150 dwellings;
- Quebec – 200 dwellings; and
- Extended Town Centre – 400 dwellings.

Figure 6.2: Louisburg Employment Parking Accumulation against Residential



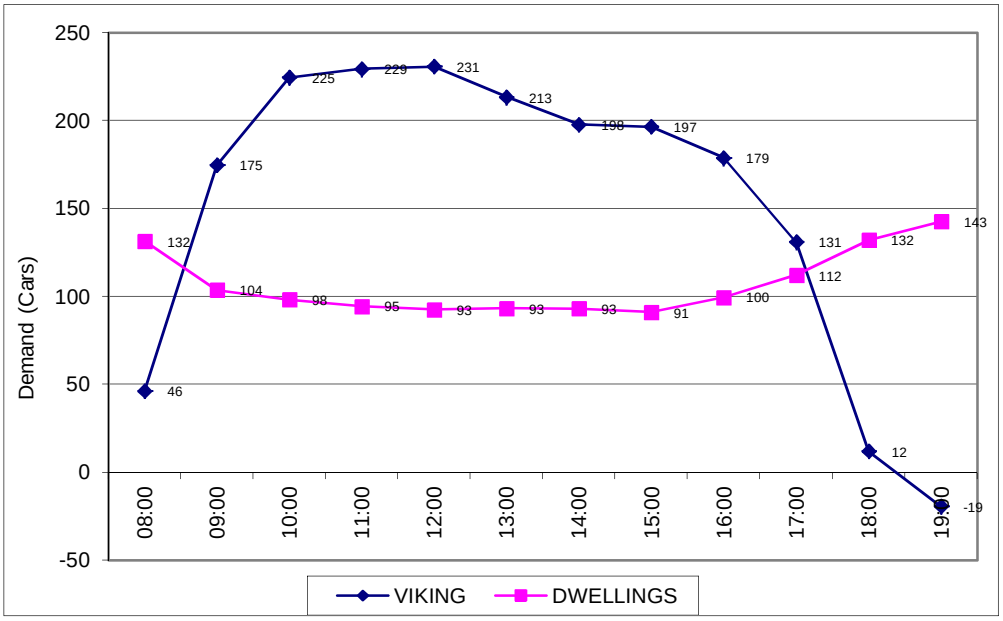
6.3.6 Figure 6.2 indicates that residential parking demand for the estimated 250 dwellings in close proximity to Louisburg reduces by approximately 70 spaces during 08:00 and 18:00. This provides scope for parking spaces to be utilised by employment demand during standard working hours and assigned as offsite overnight residential parking for nearby residential areas. There would be potential therefore to reduce Louisburg parking provision by approximately 10% should shared-use parking be adopted within the area.

Figure 6.3: Edge of Town Centre Employment Parking Accumulation against Residential



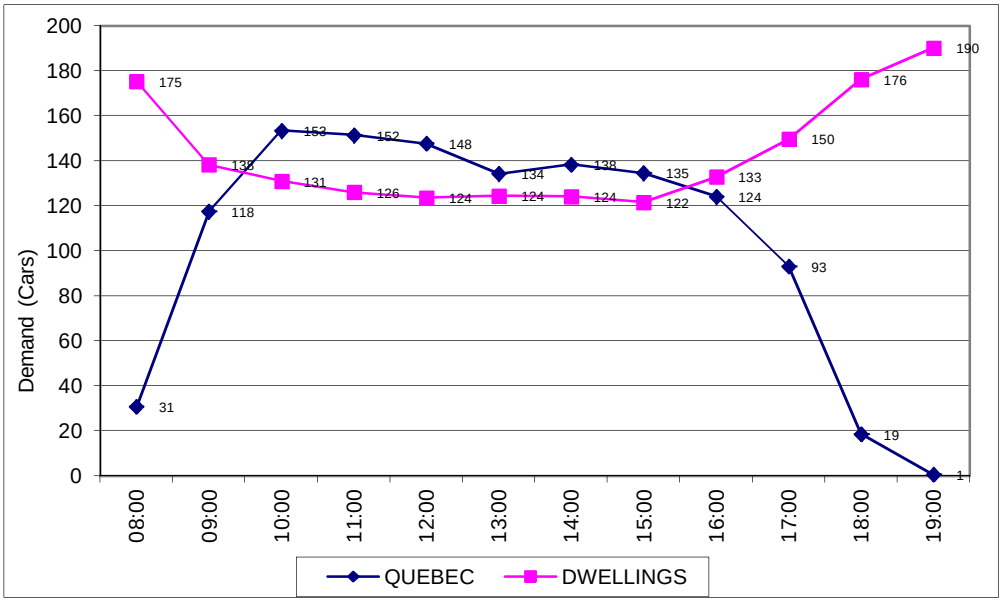
6.3.7 Figure 6.3 shows that residential parking demand for the estimated 400 dwellings in close proximity to the Edge of Town Centre Eco-Business Park reduces by approximately 110 spaces during 08:00 and 18:00 which equates to approximately 25% of the required employment parking provision. Shared-use parking in this location offers significant potential to reduce the quantum of parking provided within this area of the Eco-town.

Figure 6.4: Viking Employment Parking Accumulation against Residential



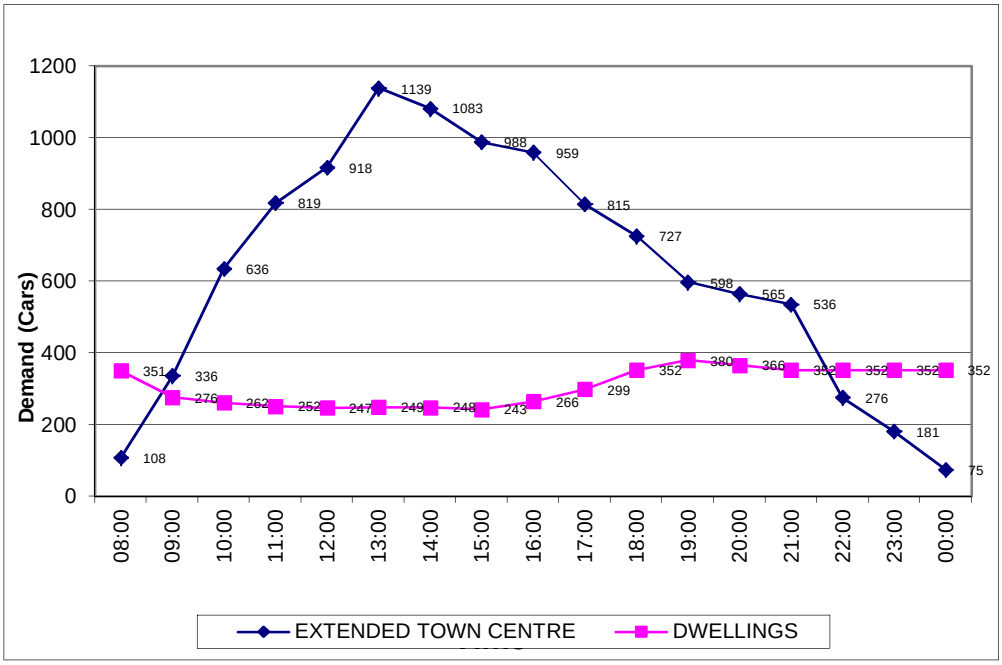
6.3.8 Residential parking demand for the estimated 150 dwellings in close proximity to Viking Eco-business Park falls by approximately 40 spaces between 08:00 and 18:00. If these empty spaces were utilised by employees and visitors at the Eco-business Park the parking provision for the employment area could reduce by approximately 20%.

Figure 6.5: Quebec Employment Parking Accumulation against Residential



6.3.9 Figure 6.5 shows that residential parking demand for the estimated 200 dwellings in close proximity to the Quebec Eco-Business Park reduces by approximately 50 spaces during 08:00 and 18:00 which equates to approximately 35% of the required employment parking provision. Shared-use parking in this location offers significant potential to reduce the quantum of parking provided within this area of the Eco-town.

Figure 6.6: Extended Town Centre Employment Parking Accumulation against Residential



6.3.10 Figure 6.6 shows that residential parking demand for the estimated 400 dwellings in close proximity to the Extended Town Centre reduces by approximately 110

spaces during 08:00 and 18:00 which equates to approximately 10% of the required extended town centre parking provision. Shared-use parking in this location offers significant potential to reduce the quantum of parking provided within this area of the Eco-town.

6.3.11 Overall this section has demonstrated that there is potential to reduce parking combined parking demand within the vicinity of the proposed Eco-business parks between 10% and 30% should share-use parking principles be adopted. This would need to be supplemented with appropriate parking control mechanisms to ensure necessary restrictions are implemented and enforced to control the demand from both the residential and employment land uses particularly during the AM and PM peak when demand cross over occurs.

PARKING BARNS

6.3.12 Parking Barns are effectively "parking houses" where cars can be parked and kept out of view. They can be provided in the way of multi-storey car parks, or in discrete blocks under buildings or landscape, providing unallocated car parking to nearby dwellings.

6.3.13 As the presented case studies indicate, Parking Barns have proven to be a successful way of providing residential parking in developments which endeavour to encourage sustainable methods of travel.

6.3.14 Adopting a method of parking provision such as this would require residents to undertake a short walk between their properties and vehicles, making the use of the private car less convenient and encouraging residents to think more carefully about their travel choices, particularly where trip lengths are short and could potentially be undertaken on foot or by bicycle.

6.3.15 Parking barns established close to proposed residential sites could also fit in with the idea of shared use parking arrangements addressed above, providing parking for employment sites where there is no on-site parking. Potential locations where Parking Barns could be located are shown in Figure 6.6

ALLOCATED AND UNALLOCATED PARKING PROVISION

6.3.16 Keeping vehicles out of view in the streets is a proven successful strategy to reducing the dependence on the use of the private car, as implemented in the Vauban, Hammarby Sjöstad and Augustenborg case studies. If people witness more walking and cycling occurring, and fewer cars on the road, attitudes towards smarter travel choices will begin to change for the better.

6.3.17 The creation of Parking Barns adjacent to proposed residential development would allow residential streets to be less dominated by both stationary and non-stationary vehicles, as demonstrated in the Augustenborg and Vauban case studies. These could be located underground for increased discretion. It would be possible to sell / charge a rental fee for parking in these spaces to discourage the ownership of a car, but this would need to be considered carefully since it may deter potential buyers. In addition, if charges were to be set for use of these Parking Barns, parking for electric cars could be charged at a much lower rate than that for fossil fuel cars.

6.3.18 If parking provision was set at below one space per dwelling in some areas in accordance with the Masterplans' vision and case study successes, and spaces were allocated by way of on-site residential parking, this would result in some properties being

provided with at least one space and others none. Those properties with a space would be more inclined to utilise their space if it were freely available. By providing the majority of parking at Parking Barns, this would allow more flexibility to control parking demand.

6.3.19 Case Studies at Seldown Eco-village, Hammarby Sjöstad and Augustenborg illustrate the successful implementation of parking management schemes through applying residential parking charges in unmarked bays, on-site car clubs and the provision of parking barns. Collectively, these measures have helped to achieve a rate of 0.7 spaces per dwelling or less. Whether parking is located on-street or in Parking Barns, these schemes work best where spaces are unallocated to particular dwellings. Instead, parking would be provided at an average rate of 0.7 per dwelling at proposed residential developments, and residents could apply to rent / buy a space through a parking system. Subsequently over time, measures to lower private car use in Whitehill & Bordon will in turn lower parking demand. Parking provision could then be reduced in phases by a gradual conversion of bays to green spaces, working towards that achieved in other eco-town case studies.

6.3.20 Application of this scheme at Whitehill & Bordon would result in the provision shown in Table 6.3. This takes the future residential development shown in Table 5.5 and applies a parking standard of an average of 0.7 spaces per dwelling which could be considered as an end state scenario achievable over time with incremental reductions in parking provision as development phases come forward.

Table 6.3: Fettered Car Ownership for Proposed Residential Development

Dwelling Type		Green Views	Green Streets	Green Roots	Overall
House	Dwellings	772	1572	550	2894
	Average car ownership levels per dwelling	*0.629*	*0.803*	*1.123*	-
	Cars	**486**	**1262**	**618**	**2366**
Flat	Dwellings	828	278	0	1106
	Average car ownership levels per dwelling	*0.377*	*0.444*	*N/A*	-
	Cars	**312**	**123**	**0**	**436**
Total		**798**	**1386**	**618**	**2801**

6.3.21 Table 6.3 above illustrates to what extent the average parking could be lowered to a site wide average of 0.7 spaces per dwelling and the resulting parking standard that would then apply to each of the proposed residential development types. With evidence from previous case studies, this could be a long term goal.

PARK AND RIDE

6.3.22 The provision of a Park & Ride site in Whitehill & Bordon Eco-town has been outlined as a potential measure within the overall Transport Strategy for the Eco-town. It could potentially serve as a key feature of the overall Parking Strategy for Whitehill & Bordon Eco-town but would require a range of conditions to be in place if ever to be

viable or beneficial. The following incentives would affect the overall deliverability of a Park & Ride site:

- Distance from the town centre;
- Number of spaces in the Park & Ride site;
- Cost of parking in the town centre;
- Number of spaces in the town centre;
- Level of bus service to be provided; and
- Opportunity to combine parking with other uses where car parks are not heavily utilised during standard working hours.

6.3.23 Park & Ride schemes would allow visitors to park outside of the town, reducing the parking demand in the town centre. There would be other advantages such as alleviated congestion in the town centre, less nuisance parking and safer, quieter roads. However, Park & Ride schemes are generally more suited to larger towns and cities where the town/city centre is a major attractor in the area. To provide an acceptable level of service of every 15 minutes or better would require 3 buses or more. The demand for the new town centre from external areas is unlikely to support this.

CAR CLUBS

6.3.24 Community car clubs are a way of catering for the occasional car essential trips without the necessity to own a car. They are operated as a car sharing pool on a pay-as-you-go basis, and should be placed close to residential areas to appear as a convenient alternative to private car ownership.

6.3.25 Implementation of a car club within the Whitehill & Bordon Eco-town proposals offers the potential to reduce car parking demand particularly from residential dwellings. It is likely a proportion of larger dwellings and town centre apartments could most effectively utilise a car club scheme where this could replace a second car. Evidence from Hammarby Sjöstad suggests that take up of 10% could be achieved. If it is assumed that 1276 dwellings have more than one car (4000 dwellings against 5276 spaces), a 10% uptake in car club membership could result in an overall reduction in residential parking demand of 528 spaces bringing the overall requirement down to 4748 spaces.

6.3.26 Drawing from case studies at Slateford Green and Hammarby Sjöstad, the number of cars provided has been 4 cars for 120 dwellings and 25 cars for 10,000 dwellings respectively. Based on this, an initial provision of 40 cars for 4000 dwellings would be a good starting point, with scope to increase this provision as demand grows. This level of provision would allow the 1276 dwellings that would be assumed to have more than one car, and a proportion of those dwellings without a car, to be provided with the same proportion of car club vehicles per dwelling as that in Slateford Green. To support sustainability and set an example to Whitehill & Bordon residents, a proportion of vehicles used for this scheme could be environmentally friendly, with lower-rate hire costs and electric charging points. Dedicated parking spaces at the edge of residential sites should be provided, and optimum locations for placement of car club vehicles can be seen on Figure 6.7.

6.3.27 This initiative could also be applied at proposed employment sites where there is potential for workplaces to join a car club for business use. In accordance with targets

set at the Hammarby Sjöstad Eco-town, the uptake in membership of 5% of all workplaces could result in an overall reduction in employment-related parking demand of 70 spaces, lowering the overall requirement from 1393 down to 1323 spaces.

DISABLED PARKING

6.3.28 Free of charge disabled parking is currently provided for at the Forest Centre, Community Centre and Tesco car parks, with no time limit. However, no provision is made at the Sutton Field and Guadaloupe car parks. Disabled parking at all new development in the Eco-town should aim to make provision in accordance with the national standards, which presently indicate that around 5-6% of total parking spaces should be for disabled users.

6.3.29 The issue of charging for disabled drivers has been considered in the context of experience elsewhere. A number of towns and cities have introduced parking charges for disabled users to provide consistency between public and private car park providers. A number of towns have proposed to introduce parking charges for the disabled, which has been met with a certain amount of public resistance. This occurred in recent years in Basingstoke, where the strategy was called in to a scrutiny procedure, before being granted approval. However, in Whitehill & Bordon, in the interest of social inclusion, it is recommended that parking for disabled initially be provided free of charge, but be subject to review.

6.4 ECO-TOWN PARKING MANAGEMENT

VMS SIGNING / PEDESTRIAN SIGNING ROUTES FROM CAR PARKS

6.4.1 VMS Signing is a proven method in managing car park traffic. It can provide motorists with real time information on the locations of available parking spaces within the town centre, allowing them to make a more informed choice about where they intend to park. Together with enabling and encouraging drivers to utilise the nearest available car park, this in turn will help to ensure the most efficient use of the remaining parking spaces and help to reduce needless circulation by vehicles.

6.4.2 Through the use of VMS signing, during the busy peak periods, visitors are likely to be directed to a town centre car park which they may not usually use. Signing pedestrian routes from car parks will play an important role in directing infrequent visitors from car parks to the main town centre. In built-up areas such as the town centre, car parks may need to be signed to help direct pedestrians back to the right car park. Furthermore, it is important that the pedestrian environment linking car parks to the main town centre is safe and provides a positive image. A dangerous and unappealing environment may discourage casual or infrequent visitors from returning to Whitehill & Bordon.

OWNERSHIP AND CONTROL OF PARKING SUPPLY

6.4.3 Whilst the local authority cannot directly control the levels of car ownership, there are more indirect methods to achieving this. A benefit of retaining ownership of the parking supply in Whitehill & Bordon would be that EHDC could control the levels of parking provision and parking charges. Policies for charging for and the supply of both on and off-street parking throughout the eco-town would influence parking demand, parking space turnover and, ultimately, car use and ownership. The provision of unallocated spaces and parking barns for residential parking would assist in the control of future parking supply.

PARKING TARIFF STRUCTURE

6.4.4 Parking charges are an important mechanism for controlling the use and length of stay at car parks. It is vital that the correct pricing structure is set for parking in the extended town centre, in order to balance private car use whilst retaining the attraction for internal and external shoppers to visit the town centre. An assessment of parking tariffs currently in place at town centre car parks in neighbouring settlements has been undertaken, as summarised in Table 6.4.

Table 6.4: Parking Tariffs at Neighbouring Town Centres

Location	Time Period	Existing Charges
Alton	Up to 1 hour 1 – 2 hours 2 – 3 hours 3 – 4 hours 4 – 5 hours 5 – 9 hours All Day	£0.50 £1.00 £1.40 £2.50 £3.00 £4.80 £6.00
Grayshott	Unlimited	Free
Liphook	Max stay 5 hours	Free
Petersfield	Up to 1 hour 1 – 2 hours 2 – 3 hours 3 – 4 hours 4 – 5 hours 5 – 9 hours All Day	£0.50 £1.00 £1.40 £2.50 £3.00 £4.80 £6.00

6.4.5 Whilst free parking is provided in Liphook and Grayshott, the development proposal for the Whitehill & Bordon town centre may be more comparable to that currently on offer at the existing town centres in Alton and Petersfield. In line with the eco-towns' aspirations to encouraging more sustainable methods of travel, a pricing structure similar to that of Alton and Petersfield would ensure that consistency of charging is achieved between competing centres.

6.4.6 All public car parking in Whitehill & Bordon is currently provided free of charge, with no time restrictions in place. For the proposed eco-town, retained car parks would need to establish new tariffs / restrictions to length of stay, in order to unify all car parking controls and ensure that these existing car parks are not abused.

6.5 ECO-TOWN PARKING ENFORCEMENT

RESIDENTIAL PARKING CHARGES

6.5.1 Applying charges for the parking of any vehicle in residential areas has, in practice at Seldown, Vauban and Mälmo, proven to be successful. Similar approaches can be found in many parts of the UK where permit parking is in operation, and residents must pay to purchase a permit. Although this method allows for flexibility in setting charges associated with buying/renting a parking space, it could be considered by potential buyers to be a severe/unfair method of cutting down on car ownership,

particularly as most adjacent existing residential areas will have free on-site parking. As a result, illegal/nuisance parking may begin to occur.

6.5.2 Enforcing charges for parking any vehicle associated with a dwelling may not be feasible in the eco-town at Whitehill & Bordon. However, the application of charges to enable any dwelling to park a second vehicle on a residential development may be a more viable method here. This system would also operate on a system similar to permit parking, where dwellings would need to apply for a permit for each vehicle. The first vehicle permit would be free, with all permits thereafter to be charged at high costs to the applicant. This cost may increase in relation to number of permits required, for example, a set cost for the second household permit, and a higher price for the third permit and so on. These costs could increase over time, becoming more stringent as the eco-town develops. As indicated by Table 5.5, cutting down on second car ownership could have the potential to reduce car parking demand in Whitehill & Bordon by up to 1276 spaces.

6.5.3 As a further incentive for residents to choose not to own a car in Whitehill & Bordon, any dwelling that does not apply for a resident's parking permit could be eligible for either a council tax reduction or, if estate management fees are applicable to the dwelling, a reduction in these costs. Owners of environmentally-friendly vehicles such as electric cars could also be provided with a discount.

WORKPLACE PARKING LEVIES

6.5.4 Workplace parking levies are a way of managing the parking demand at proposed employment sites. This approach would require employers to hold annual licences to cover the maximum number of workplace parking spaces that can be provided at their site at any one time. Employers would be free to pass some or all of this cost onto their employees, with the option to reduce this charge for car sharing participants, and alleviated for those that require their car to be parked on site for business use. Some thought will be required by the employer as to possible ways of managing this levy, but it is an ideal way of encouraging workplaces to think more carefully about how they manage their parking provision.

6.5.5 These charges could be increased gradually over time, continually helping to discourage the use of the private car for travelling to work. Collected funds should then be put towards improvements to aid the use of more sustainable travel methods such as better public transport services and improved walking/cycling facilities.

6.5.6 A team of compliance officers could undertake spot checks at employment sites to ensure that the number of vehicles parked on site does not exceed the number of licences held by the employer, with heavy penalties for failed compliance.

DECRIMINALISED PARKING ENFORCEMENT (DPE) / (CPZ)

6.5.7 It has been highlighted through public consultation and on-site observation that illegal on-street parking and abuse of parking restrictions currently occurs within many areas of Whitehill & Bordon. If residential permit parking is to be introduced for the proposed development, this situation would only worsen. Therefore, parking enforcement measures such as Controlled Parking Zones (CPZs) would need to be introduced at adjacent residential areas where there is little restriction to on-street parking. Benefits of CPZs would be twofold; they would not only deter any overflow from residential permit only areas, but they would help to alleviate the existing illegal parking problem in Whitehill & Bordon.

6.6 INTEGRATION WITH WIDER TRANSPORT STRATEGY

LINK TO SMARTER CHOICES

6.6.1 In order to develop an eco-town where there is reduced reliance on the private car, it is recognised that a high quality and reliable public transport system with excellent linkages is required. The likelihood of the provision of rail services at Whitehill & Bordon is unknown at this stage, therefore the public transport focus is placed on the provision of high quality bus services. The measures that are envisaged in Whitehill & Bordon as part of the Eco-town masterplan are summarised below:

- Bus stops placed within 400m (5 minutes' walk) of all existing and proposed new homes in Whitehill & Bordon;
- Strategic bus routes serving longer distance journeys: at least 2 buses per hour, i.e. 1 bus every 30mins. High quality, low emission, single decker bus vehicles are suggested to operate on these routes;
- Local bus routes serving surrounding villages: at least 4 buses per hour, i.e. 1 bus every 15mins. High quality, low emission, mini bus type vehicles (approx. 30 seats) suggested to operate on these routes;
- Town wide bus routes serving key facilities around the town: at least 6 buses per hour, i.e. 1 bus every 10mins. High quality, low emission, mini bus type vehicles suggested (approx. 20 seats) to operate on these routes;
- A central transport hub is proposed to be located along the existing High Street in the town centre. It will act as a focus to change people's perceptions of travel by public transport, and offer state of the art journey planning information with real time passenger information, information on bus routes, cycle routes, cycle hire, walking routes, car clubs, car share schemes, all supported by a high tech community message board for travel updates. Other services might include bike parking, sustainable living information centre, social community meeting place, internet access, bank, library, café and bike shop/repair centre.
- Aim to increase trips on foot from the existing 20% to 25%. An improved network of pedestrian routes is proposed to aid with this, along with the new 'Green Loop and Grid' which will connect existing town wide and long distance routes via new streets and footpaths. Initiatives such as 'walking buses' to schools and internet shopping will also be encouraged.
- Aim to increase the modal share of trips by cycle from 2% to 12% through the provision of safe and secure cycle parking facilities adjacent to, or at the front door of dwellings, employment hubs and transport interchanges, with showering facilities. Also included in the masterplan is an improved cycle infrastructure, facilities for taking cycles on buses and trains, bike hire schemes and cycle training programmes.

6.6.2 These measures will have an effect of reducing the demand for parking in the town centre due to the reduced reliance on the car that these measures will engender. In parallel with these measures, the introduction of decriminalised parking enforcement in Whitehill & Bordon would be beneficial, as discussed below.

6.6.3 In conjunction with the methods of reducing car parking demand explored thus far, Travel Plans will play a vital role in achieving the eco-town aspirations for less private car use. These could be set up across most land uses, particularly working well for schools, places of work and residential. Initial targets to reduce private car use by 10-

15% in the first five years could be set, and continue thereafter, setting more rigorous targets as the eco-town develops.

TRANSPORT STRATEGY MEASURES

6.6.4 The Emerging Transport Strategy for Whitehill & Bordon contains a package of measures proposed to be implemented as part of the new eco-town at Whitehill & Bordon. These measures are aimed at improving the facilities for walking, cycling and public transport users, which in turn will collectively reduce the necessity of private car journeys, thus reducing car parking demand in Whitehill & Bordon. The proposed measures include:

- **WBTP1 – Reducing the Need to Travel**
  - Development at Whitehill & Bordon will implement a series of measures to reduce the need to travel outside of the town. The development will provide necessary facilities within the town, through the provision of adequate jobs, shops and services to encourage trip containment to Whitehill & Bordon. This will be supported by the delivery of a number of initiatives including remote working facilities and the delivery of high-speed broadband to make working within the town more easy.
- **WBTP2 – Transport Hub**
  - Development at Whitehill & Bordon will include the construction of a Transport Hub located within the new Town Centre to provide a transport interchange and to provide a focal point for all town travel information and services. The development areas will include a series of well-located of 'Sub-Hubs' to act as local information points close to the town's populations.
- **WBTP3 – Public Transport System Improvements**
  - Development at Whitehill & Bordon will provide significant enhancements to the current public transport system to deliver a high-quality, frequent, modern and attractive public transport system, comprising a 'three-tiered' bus system offering Town-Wide Services, Local Services and Strategic Services to key destinations.
  - The three-tiered bus service will be implemented from the early stages of development, with frequency and capacity increasing as demand within the town grows, providing an attractive alternative to travel by the private car for local and longer distance journeys, including providing frequent and reliable connections to the rail network.
  - Smart Ticketing will be provided across the town's transport systems to provide for a seamless transition between mode and hassle-free travel.
- **WBTP4 – Public Transport Infrastructure Improvements**
  - Development at Whitehill & Bordon will deliver high-quality bus infrastructure throughout the development including public transport priority measures and modern and attractive environmentally friendly bus stops and bus shelters which offer excellent travel information systems located within 400m (5 minutes' walk) of each home. This will include the provision of Real Time Passenger Information.

- **WBTP5 – Potential Rail Land Safeguarding**
  - Development of Whitehill & Bordon will safeguard the land necessary to deliver a future rail connection north from Whitehill & Bordon to Bentley and will safeguard land for the delivery of a well-connected, conveniently located rail station within the town, if proven to be viable.
- **WBTP6 – Walking and Cycling Improvements**
  - Development at Whitehill & Bordon will deliver a comprehensive network of well signed walking and cycling routes, offering a 'Green Grid' of walking and cycling Routes in and around the town to provide safe, convenient and attractive travel options for non-car modes of travel from the home to the town's facilities, schools, services and employment areas.
  - The delivery of the Green Grid will be phased with development to ensure that opportunities to walk and cycle within Whitehill & Bordon are delivered from the first stages of development and that these provide a genuine alternative to the private car.
  - Opportunities to provide longer-distance connections from Whitehill & Bordon will be explored.
- **WBTP8 – Cycle Parking Facilities**
  - Development at Whitehill & Bordon will deliver excellent cycle parking facilities within its district centres, the town centre, at employment locations and within each residential area. High quality and attractive cycle parking facilities will be provided from the first stages of development to ensure that cycling is an attractive form of travel within Whitehill & Bordon.
- **WBTP13 – Travel Plans**
  - Development at Whitehill & Bordon will ensure the implementation of a Town-Wide Travel Plan which provides an innovative and comprehensive balanced package of measures to encourage smarter travel choices to be made and to maximise opportunities for sustainable travel.
  - The Town-Wide Travel Plan will be implemented before the development begins and will provide measures including personalised travel planning, cycle hire schemes, car clubs, quality travel information systems, measures to promote home-working and marketing and promotion campaigns.
  - The Town-Wide Travel Plan will be supported by the securing of individual travel plans from significant travel generators within the town through the planning process, and those developed for existing employers, retailers and schools.
- **WBTP14 – Low Carbon Vehicles**
  - Development at Whitehill & Bordon will promote the use of low-carbon vehicles, including electric vehicles and other alternative low-carbon fuel technology, to reduce the carbon emissions resulting from the development.
  - The development will promote and deliver the necessary infrastructure to support electric vehicles and alternative fuel travel.

6.7 VIABILITY APPRAISAL

6.7.1 Savill's have been commissioned to undertake a viability assessment for the proposed Eco-town at Whitehill & Bordon. Their report is included in Appendix C, with their main findings summarised below.

RESIDENTIAL PARKING STANDARDS

6.7.2 In terms of residential parking provision, it is believed that lower car parking expectations for smaller units such as one and two bedroom dwellings would allow for reduced provision. With this in mind, the location of dwellings of this size should be within walking/bus distance of the town centre to encourage sustainable methods of transport. This is in accordance with the Masterplan, which locates the smallest dwellings classified as 'Green Views' close to the town centre. Furthermore, housing for the elderly and retirees should be located close to local grocers/supermarkets, with consideration that a 0.5 mile level walk is the maximum viable distance.

6.7.3 Larger housing aimed at families tends to be associated with greater commuting distances and therefore the need for at least one parking space is greater. If there are easy walking/cycle routes to schools and main shopping areas, this would encourage parents to walk with their children. As the Eco-town develops, more major employers would be expected to locate within the town, reducing the number of car trips made by the working parent, thus allowing greater opportunity to reduce car ownership.

6.7.4 Savill's advise that reduced parking standards could have an impact on the value of new housing, with a 15% decline in values anticipated for a reduced car parking standard.

6.7.5 Recommended incentives to achieve reduced residential parking provision include:

- "Regular Bus Routes;
- Cycle Tracks;
- Direct footpaths to the town centre;
- Car Club;
- Good rail service to London from local railway stations;
- Sustainable employment opportunities within Whitehill & Bordon;
- Sustainable location of new residential dwellings (proximity to town centre); and
- Innovative incentives (such as commuter shuttle bus included within a service charge provision for all dwellings).

  As mentioned above it is possible to invoke a 'service charge' for all new build residential units to contribute to a shuttle bus service. This will make the bus service seem worthwhile using which should hopefully encourage its use. It is important that this does not impact on values and is seen as a nominal charge per annum. There may be other incentives to consider such as a reduced council tax to offset this charge."

6.7.6 It is recognised within Savill's appraisal that eco-town aspirations contained in the Masterplan are ambitious in comparison with existing HCC standards. This is likely

to have an impact on the saleability of property to new buyers and anticipates a 15% reduction in house values with the reduced parking standards.

COMMERCIAL PARKING

6.7.7 It is expected that Office Use (B1a) will require more parking than research and development (B1b), light industry (B1c), general industry (B2) and storage and distribution (B8) uses, which is due to the high density of employees. The draft report highlights how locations such as Southampton, Portsmouth and Basingstoke have a high proportion of office space close to the town centre where car parking is naturally confined. Where this is the case, employees are likely to travel from within walking/cycling/bus distance of their office location.

6.7.8 Home working is becoming much more popular, with larger companies now operating a hot desk system. It is envisaged that as larger employers move into Whitehill & Bordon, this could help reduce commercial parking demand. Savill's report recommends the following incentives to reduce commercial parking demand:

- Encourage Home Working;
- Infrastructure to allow for High-Speed Broadband;
- Local Employment;
- Cycle to Work Scheme;
- Bus Route to and from the employment area;
- Easy Pedestrian access (incorporate with leisure routes); and
- Congestion charge.

RETAIL PARKING

6.7.9 It is recognised that the level of car parking required by retail land uses is very much dependant on where retail is located. The current Forest Centre is ideally located close to residential areas for walking/cycling accessibility, but this will be too far for new residential areas proposed in the Masterplan. It is recommended that a new shopping area is created closer to the Eco-town. Also, A4 uses (drinking establishments) will likely be located in more suburban locations and therefore require a greater level of parking provision than other retail.

6.8 SUMMARY OF MEASURES

6.8.1 Drawing together all aforementioned possible options to reduce car parking demand in Whitehill & Bordon, Table 7.5 presents their likely impact, deliverability, viability, cost and applicability to the various land uses proposed in the Eco-town Masterplan.

Table 7.5: Assessment of Possible Measures for Reducing Parking Demand

Measure	Impact	Deliverability	Viability	Cost		Applicability to Land Uses		
				Capital	Revenue	Residential*	Employment	Extended Town Centre
Shared Use Parking Arrangements	1	1	1	1	-	GS / GV	Yes	Yes
Parking Barns	1	2	2	3	Yes	GR / GS / GV	Yes	-
Unallocated Parking	2	2	1	1	Yes	GR / GS / GV	Yes	-
Allocated Parking	3	1	1	1	-	GR / GS / GV	-	-
Park & Ride	2	2	3	3	Yes	-	-	Yes
Car Clubs	1	2	2	2	Yes	GR / GV	Yes	-
Workplace Parking Levies	1	2	2	2	Yes	-	Yes	-
Decriminalised Parking	1	1	2	2	Yes	GR / GS / GV + existing areas	-	Yes
VMS Signing	1	2	2	2	-	-	-	Yes
Car Share	2	1	1	1	-	GR / GS / GV	Yes	Yes
Travel Plans	2	1	1	2	-	GR / GS / GV	Yes	Yes

* Classified under 3 residential development profiles: GR = Green Roots, GS = Green Streets, GV = Green Views

Note: All measures ranked 1-3, 1 indicates greatest positive impact / most deliverable / most viable / most cost effective / most applicable

7 Parking Strategy Recommendations (Revised Masterplan)

7.1 INTRODUCTION

7.1.1 In May 2012, a revised Masterplan was published and was developed by the Eco-town team on behalf of the Whitehill & Bordon Eco-town Delivery Board. Its main changes affecting the Parking Strategy are as follows:

- A maximum of 4000 new homes to be delivered;
- Housing density no longer restricted to three categories- a mix of housing densities across the development areas with a new 'character area' approach;
- Changes to Retail, Employment and Leisure proposals;
- No housing on Viking Park; and
- A revised Masterplan layout.

7.1.2 These amendments have an impact on the levels of development assessed for parking, although the methodology previously outlined will remain relevant. A previous version of this report contained the Parking Strategy Recommendations based on the original Whitehill & Bordon Masterplan (June 2010), which are now included in Appendix E. This Chapter details the results associated with a repeat of the assessments in Chapters 5 and 6 based on the revised Masterplan.

7.2 STRATEGY RECOMMENDATIONS CONSULTATION

7.2.1 Following the setting of the Strategy's Recommendations, a further consultation period was undertaken between September-December 2012 in order to allow stakeholders and the public to comment on the parking recommendations based on the revised Masterplan. A summary of the comments received from Amec on behalf of the Defence Infrastructure Organisation, Lindford Parish Council, members of the public and the Delivery Board at the Standing Conference, are included in Appendix F. Responses to these comments have also been provided.

7.2.2 Below is a summary of the general themes that were observed as an outcome of the Strategy Recommendations Consultation:

- Depreciation of housing value where residential parking provision is restricted;
- Overspill parking, congestion and conflict caused by restricted parking;
- Financial viability in setting up initiatives such as residential permits, workplace levies, council tax incentives, Controlled Parking Zones etc.;
- Difficulties in achieving shared parking between land uses i.e. changeover, insurance, access, security etc.;
- Restricted parking/ parking charges will decrease attractiveness to investors/shoppers/employees and send them elsewhere;
- The use of 2001 Census data in the Strategy;
- Strategy is optimistic in the likely future use of sustainable travel modes by residents; and
- Case studies contain much smaller developments.

7.2.3 In response to these comments, the Strategy's recommendations for residential parking provision have been amended to provide a less stringent approach to future parking provision.

7.3 UNRESTRICTED FUTURE PARKING DEMAND

EMPLOYMENT LAND USES

7.3.1 Amendments as part of the revised Masterplan result in some changes to the development proposals at the four main employment sites. These employment sites will now consist of the following:

Table 7.1: Employment Site Development Schedule

Employment Site / Use		Floor Area (sqm)	Number of Jobs
Louisburg Barracks – Eco-business Park	High Tech	22,353	390
	Light Industrial	4,932	86
	Business Park Offices	6,165	506
	Serviced Offices	1,241	102
Edge of Town Centre	Mixed TC uses (A2)	3,947	202
	General Offices	7,744	529
	Commercial Leisure	7,744	91
Viking Park	Industrial	10,263	179
	Commercial Leisure	6,090	71
Quebec Barracks	Small Business Offices	1,880	154
	TOTAL	72,359	2310

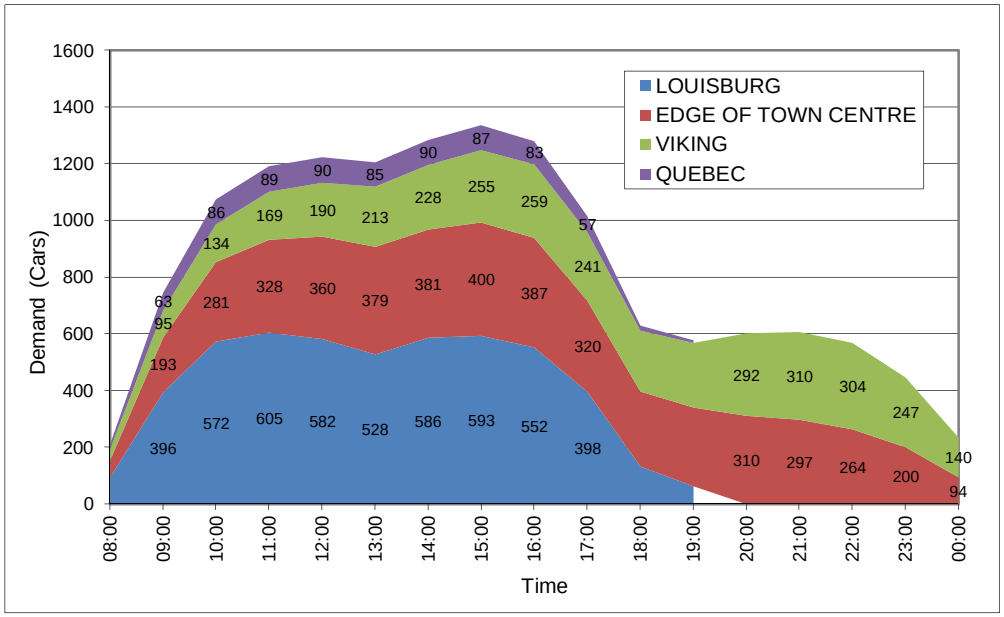
7.3.2 Using revised TRICS trip rate analyses, the accumulation in car parking demand has been derived to determine peak demand at employment sites. Table 7.2 presents the daily parking profiles for each of the employment sites, whilst Figure 7.1 includes the graphical output and Appendix D includes the TRICS output.

Table 7.2: Unfettered Car Park Accumulation at Proposed Employment Sites

Time	Louisburg	Edge of Town Centre	Viking	Quebec	Overall
07:00-08:00	94	61	39	17	211
08:00-09:00	396	193	95	63	746
09:00-10:00	572	281	134	86	1073
10:00-11:00	605	328	169	89	1191
11:00-12:00	582	360	190	90	1222
12:00-13:00	528	379	213	85	1205
13:00-14:00	586	381	228	90	1285
14:00-15:00	593	400	255	87	1335
15:00-16:00	552	387	259	83	1280
16:00-17:00	398	320	241	57	1015
17:00-18:00	132	264	215	18	629
18:00-19:00	63	278	228	7	577
19:00-20:00	-	310	292	-	602
20:00-21:00	-	297	310	-	607
21:00-22:00	-	264	304	-	568
22:00-23:00	-	200	247	-	448
23:00-24:00	-	94	140	-	234

7.3.3 Table 7.2 shows that the peak demand for spaces at employment sites will be 1335, occurring between 14:00-15:00. This compares to a peak demand of 1393 spaces for employment sites in the original Masterplan, which occurred between 10:00-11:00. The change in daily profile of accumulation is due to the increase of Commercial Leisure uses included at employment sites in the revised Masterplan.

Figure 7.1: Car Park Accumulation at Proposed Employment Sites



DISAGGREGATING LEISURE TRIPS ASSOCIATED WITH EMPLOYMENT LAND USES

7.3.4 The revised Masterplan outlines Commercial Leisure proposed for the Edge of Town Centre and Viking employment sites, which did not exist in the original Masterplan. In order to quantify the level of parking demand associated with leisure trips to these sites, the DfT's 'Trip start time by trip purpose' dataset has been used. By applying this data to Table 7.2, the proportion of the Edge of Town Centre and Viking's car park accumulation which will arise from leisure trips is presented in Table 7.3.

Table 7.3: Trips by Journey Purpose at Employment Sites

Time	Louisburg	Edge of Town Centre		Viking		Quebec	Overall Commuting Trips
	Commuting	Commuting	Leisure	Commuting	Leisure	Commuting	
07:00-08:00	94	57	4	37	2	17	205
08:00-09:00	396	177	16	87	8	63	723
09:00-10:00	572	231	50	110	24	86	1000
10:00-11:00	605	240	87	124	45	89	1058
11:00-12:00	582	238	123	125	65	90	1035
12:00-13:00	528	230	149	129	84	85	972
13:00-14:00	586	219	163	130	97	90	1025
14:00-15:00	593	220	181	140	115	87	1040
15:00-16:00	552	207	180	138	120	83	980
16:00-17:00	398	172	148	130	111	57	756
17:00-18:00	132	146	118	119	96	18	415
18:00-19:00	63	148	130	121	107	7	339
19:00-20:00	-	153	158	144	148	-	296
20:00-21:00	-	137	161	142	167	-	279
21:00-22:00	-	114	150	131	173	-	245
22:00-23:00	-	82	119	101	146	-	183
23:00-24:00	-	36	58	54	86	-	90

7.3.5 Table 7.3 indicates that the maximum accumulation relating to leisure trips would occur between 14:00-15:00 at the Edge of Town Centre site and between 21:00 – 22:00 at the Viking site. The quantum of parking demand relating to leisure trips equates to 45% of Edge of Town Centre spaces and 57% of Viking Park spaces.

RETAIL AND LEISURE LAND USES

7.3.6 The revised Masterplan also includes changes to the Town Centre land use quantum. Table 7.4 outlines the updated development schedule for the Town Centre.

Table 7.4: Proposed Extended Town Centre Retail and Leisure Uses

Land Use	Floor Area (sqm)	Number of Jobs
A1 Retail	30,119	1,300
A2 Financial / Professional Services	3,514	180
A3 / A5 Restaurants, Food, Takeaway, Pubs	5,020	229
B1 Town Centre Offices	11,546	789
TOTAL	50,199	2,498

7.3.7 Revised trip rates have been derived to reflect the changes in land use mix for the Extended Town Centre. A daily accumulation profile is included in Table 7.5 for each land use and for the town centre as a whole.

Table 7.5: Unfettered Car Park Accumulation at Proposed Extended Town Centre

Time	A1 Retail	A2 Financial Services	A3 / A5 Food	B1 Office	Overall
07:00-08:00	52	7	6	58	122
08:00-09:00	225	23	9	235	493
09:00-10:00	517	50	34	346	947
10:00-11:00	724	74	52	360	1209
11:00-12:00	754	83	106	361	1305
12:00-13:00	913	94	205	337	1549
13:00-14:00	814	90	204	338	1447
14:00-15:00	768	89	141	338	1336
15:00-16:00	763	89	132	312	1296
16:00-17:00	611	81	148	198	1038
17:00-18:00	507	74	202	50	833
18:00-19:00	263	62	231	9	564
19:00-20:00	146	56	251	-	452
20:00-21:00	146	57	222	-	425
21:00-22:00	-	-	135	-	135
22:00-23:00	-	-	75	-	75
23:00-24:00	-	-	5	-	5

7.3.8 Peak demand of 1549 spaces for the proposed extended town centre will occur between 12:00-13:00, which can be compared to a peak demand at the same time for 1365 spaces arising from the demand assessment for the original Masterplan. This change has occurred due to variations to the land use mix proposed for the extended town centre as part of the revised Masterplan.

DISAGGREGATING EMPLOYMENT TRIPS ASSOCIATED WITH RETAIL AND LEISURE LAND USES

7.3.9 In order to quantify the level of parking demand associated with commuting trips to the Extended Town Centre, the DfT's 'Trip start time by trip purpose' dataset has been used. By applying this data to Table 7.5, the proportion of the Extended Town Centre's car park accumulation which will arise from commuting trips is presented in Table 7.6.

Table 7.6: Proportion of Commuting Trips for Extended Town Centre

Time	A1 Retail		A2 Financial Services		A3 / A5 Food		B1 Office	Overall Commuting Trips
	Shopping	Commuting	Shopping	Commuting	Leisure	Commuting	Commuting	
07:00-08:00	3	49	0	6	0	6	58	119
08:00-09:00	20	205	2	21	1	8	235	470
09:00-10:00	131	386	13	38	6	28	346	797
10:00-11:00	298	426	30	43	14	38	360	867
11:00-12:00	380	374	42	41	36	70	361	847
12:00-13:00	500	413	51	42	81	125	337	917
13:00-14:00	465	349	52	39	87	117	338	843
14:00-15:00	453	316	52	36	64	77	338	768
15:00-16:00	452	311	52	36	62	71	312	729
16:00-17:00	351	260	46	34	68	80	198	572
17:00-18:00	274	233	40	34	90	112	50	429
18:00-19:00	139	123	33	29	108	123	9	284
19:00-20:00	78	68	30	26	127	123	-	217
20:00-21:00	78	68	30	27	120	102	-	197
21:00-22:00	-	-	-	-	77	58	-	58
22:00-23:00	-	-	-	-	44	30	-	30
23:00-24:00	-	-	-	-	3	2	-	2

7.3.10 Table 7.6 indicates that the maximum accumulation would occur between 12:00 – 13:00, with 917 spaces required for commuting related trips. This equates to 59% of town centre spaces required for commuting trips.

7.3.11 When added to the car park accumulation arising from commuting trips to employment sites (shown in Table 7.3), the maximum car parking demand arising from commuting trips within Whitehill & Bordon would be 1925 spaces and occur between 10:00 – 11:00. This would result in a maximum parking demand of 0.40 spaces per employee, for a total of 4808 jobs.

7.3.12 In comparison to the previous assessment, 787 spaces were required for commuting related trips to the proposed town centre, totalling 2068 spaces across the town for all commuting related trips. This previously resulted in a maximum parking demand of 0.45 spaces per employee for a total of 4550 jobs.

UNFETTERED FUTURE RESIDENTIAL PARKING DEMAND

7.3.13 The revised Masterplan adopts a place-based approach to developing neighbourhood character and identifies four broad 'Character Areas' defining types and sizes of housing. The residential development schedule is summarised as follows:

- Town Centre – between 960 and 1200 new homes, mostly 1-2 bed flats with some 2-3bed terraces and 3-4 bed townhouses;
- Parkland – between 960 and 1800 new homes, 85% 3-4 bed houses and 15% 1-2 bed flats;
- Satellite – between 720 and 1080 new homes, 90% houses and 10% flats; and
- Rural/Woodland – between 170 and 510 new homes, all 4-6 bed houses.

7.3.14 Using the same method as previously adopted in section 5.5, existing car ownership levels for each size property (1, 2, 3 bed etc.) have been applied to the proposed housing mix to provide a forecast for car ownership levels within the new Eco-town. It has been assumed that the number of houses delivered for each character area is approximately midway between the ranges set out above. Table 7.7 presents a summary of the expected car ownership levels for future residential development in Whitehill & Bordon which overall equates to 1.33 per dwelling.

Table 7.7: Unfettered Car Ownership for Proposed Residential (Option 1)

Dwelling Type		Town Centre	Parkland	Satellite	Rural/ Woodland	Overall
House	Dwellings	362	1248	885	343	2838
	Average car ownership levels per dwelling	*1.400*	*1.470*	*1.523*	*1.847*	*1.523*
	Cars	**507**	**1835**	**1348**	**633**	**4323**
Flat	Dwellings	844	220	98	-	1162
	Average car ownership levels per dwelling	*0.845*	*0.845*	*0.845*	-	*0.845*
	Cars	**714**	**186**	**83**	**-**	**983**
Total		**1220**	**2021**	**1431**	**633**	**5306**

7.3.15 The overall unfettered demand for parking based on the previous Masterplan was for 5276 spaces, equating to 1.32 spaces per dwelling (calculated by dividing overall spaces by dwellings). The revised level of 1.33 per dwelling has occurred due to alterations made to the dwelling mix.

7.3.16 Using the same TRICS analysis for 'Mixed Private/Non-Private Housing' as referred to in paragraph 5.5.4, a daily profile of residential parking accumulation has been derived. The same assumptions which were used in section 5.5 have been repeated here, and the results are presented in Table 7.8.

Table 7.8: Residential Trip Generation

Time	Arrival Rate	Arrivals	Departure Rate	Departures	TOTAL ACCUMULATION*
					5041 (before 07:00)
07:00-08:00	0.069	348	0.192	968	4421
08:00-09:00	0.132	665	0.318	1603	3483
09:00-10:00	0.146	736	0.182	917	3302
10:00-11:00	0.117	590	0.142	716	3176
11:00-12:00	0.122	615	0.134	675	3115
12:00-13:00	0.157	791	0.153	771	3136
13:00-14:00	0.155	781	0.156	786	3130
14:00-15:00	0.153	771	0.166	837	3065
15:00-16:00	0.239	1205	0.183	923	3347
16:00-17:00	0.26	1311	0.176	887	3771
17:00-18:00	0.319	1608	0.186	938	4441
18:00-19:00	0.269	1356	0.199	1003	4794
19:00-20:00	-	-	-	-	4618
20:00-21:00	-	-	-	-	4441
21:00-22:00	-	-	-	-	4441
22:00-23:00	-	-	-	-	4441
23:00-24:00	-	-	-	-	4441

* Based on 5306 vehicles, assuming 95% accumulation at 07:00 for 4000 dwellings

7.3.17 Based on parking accumulation, the peak demand for parking based on the previous Masterplan was for 4767 spaces, occurring between 18:00-19:00.

7.3.18 Before continuing with the analysis, it should be noted that Pages 103-104 of the Masterplan detail the housing mix proposed for the Town Centre area. Although the

document states that the majority of housing will be flats here, it later states that the town centre housing mix will be 70% houses and 30% flats. For this reason, a further assessment of forecast residential parking demand has been undertaken, Option 2, with the previous assessment referred to as Option 1 from here on. Tables 7.9 and 7.10 present this analysis based on this alternative town centre housing mix, which results in an unfettered demand for parking at 1.39 spaces per dwelling (calculated by dividing overall spaces by dwellings).

Table 7.9: Unfettered Car Ownership for Proposed Residential Development (Option 2)

Dwelling Type		Town Centre	Parkland	Satellite	Rural/ Woodland	Overall
House	Dwellings	844	1248	885	343	3320
	Average car ownership levels per dwelling	*1.400*	*1.470*	*1.523*	*1.847*	*1.523*
	Cars	**1182**	**1835**	**1348**	**633**	**4998**
Flat	Dwellings	362	220	98	-	680
	Average car ownership levels per dwelling	*0.845*	*0.845*	*0.845*	-	*0.845*
	Cars	**306**	**186**	**83**	**-**	**575**
Total		**1488**	**2021**	**1431**	**633**	**5573**

Table 7.10: Residential Trip Generation (Option 2)

Time	Arrival Rate	Arrivals	Departure Rate	Departures	TOTAL ACCUMULATION*
					5294 (before 07:00)
07:00-08:00	0.069	365	0.192	1016	4643
08:00-09:00	0.132	699	0.318	1683	3658
09:00-10:00	0.146	773	0.182	964	3468
10:00-11:00	0.117	619	0.142	752	3335
11:00-12:00	0.122	646	0.134	709	3272
12:00-13:00	0.157	831	0.153	810	3293
13:00-14:00	0.155	821	0.156	826	3288
14:00-15:00	0.153	810	0.166	879	3219
15:00-16:00	0.239	1265	0.183	969	3515
16:00-17:00	0.26	1376	0.176	932	3960
17:00-18:00	0.319	1689	0.186	985	4664
18:00-19:00	0.269	1424	0.199	1054	5035
19:00-20:00	-	-	-	-	4849
20:00-21:00	-	-	-	-	4664
21:00-22:00	-	-	-	-	4664
22:00-23:00	-	-	-	-	4664
23:00-24:00	-	-	-	-	4664

* Based on 5573 vehicles, assuming 95% accumulation at 07:00 for 4000 dwellings

TOTAL UNFETTERED FUTURE DEMAND

7.3.19 In order to derive the overall future unfettered parking demands for the proposed Eco-town, the individual parking demands arising from the various land uses in the revised Masterplan have been amalgamated. Table 7.11 summarises the overall future demand.

Table 7.11: Total Future Car Parking Demand

Land Use	Maximum Future Parking Demand
Employment Sites	1335
Extended Town Centre (inclusive of retail & office use elements)	1549
Proposed Residential	5306 / 5573*
TOTAL	**8190 / 8457***

* Option 2 – Higher proportion of houses than flats in Town Centre area

7.3.20 A summary of all daily profiles relating to the proposed development has been tabulated in order to highlight the fluctuations in parking demand throughout the day. Table 7.12 presents this data. From this it can be seen that Option 2 results in a higher peak demand of 241 spaces between 18:00-19:00.

Table 7.12: Summary Daily Profile for Future Development

Time	Employment	Extended Town Centre	Residential		TOTAL	
			Option 1	Option 2	Option 1	Option 2
07:00-08:00	211	122	4421	4643	4754	4976
08:00-09:00	746	493	3483	3658	4722	4897
09:00-10:00	1073	947	3302	3468	5322	5488
10:00-11:00	1191	1209	3176	3335	5576	5735
11:00-12:00	1222	1305	3115	3272	5642	5799
12:00-13:00	1205	1549	3136	3293	5890	6047
13:00-14:00	1285	1447	3130	3288	5862	6019
14:00-15:00	1335	1336	3065	3219	5737	5890
15:00-16:00	1280	1296	3347	3515	5923	6091
16:00-17:00	1015	1038	3771	3960	5824	6013
17:00-18:00	629	833	4441	4664	5904	6126
18:00-19:00	577	564	4794	5035	5934	6175
19:00-20:00	602	452	4618	4849	5672	5904
20:00-21:00	607	425	4441	4664	5473	5696
21:00-22:00	568	135	4441	4664	5145	5367
22:00-23:00	448	75	4441	4664	4963	5186
23:00-24:00	234	5	4441	4664	4681	4903

7.3.21 Figures 7.2 and 7.3 illustrate the daily profile of accumulation for all proposed land uses in the new Eco-town, for Options 1 and 2 respectively.

Figure 7.2: Daily Profile of Accumulation for Development Proposals (Option 1)

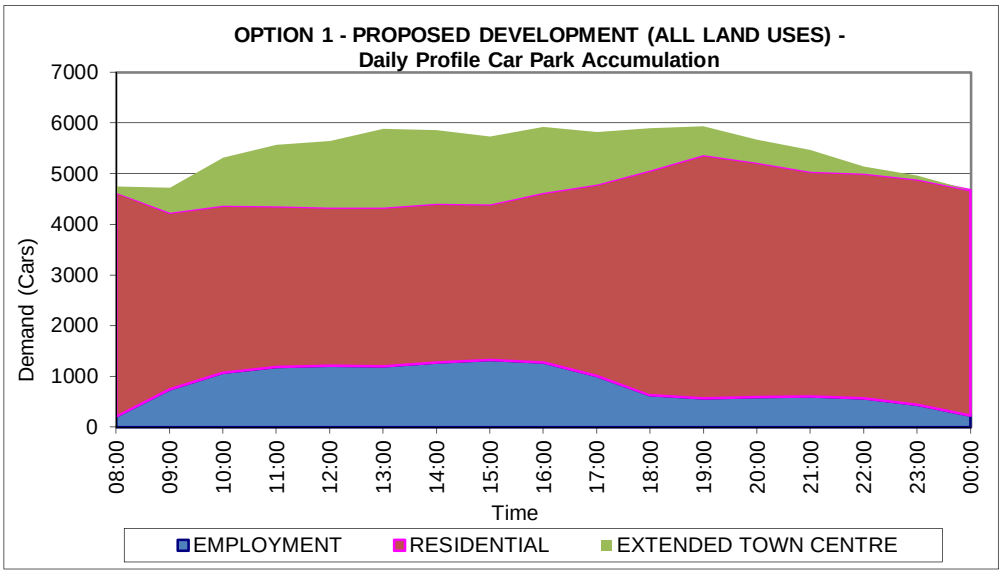
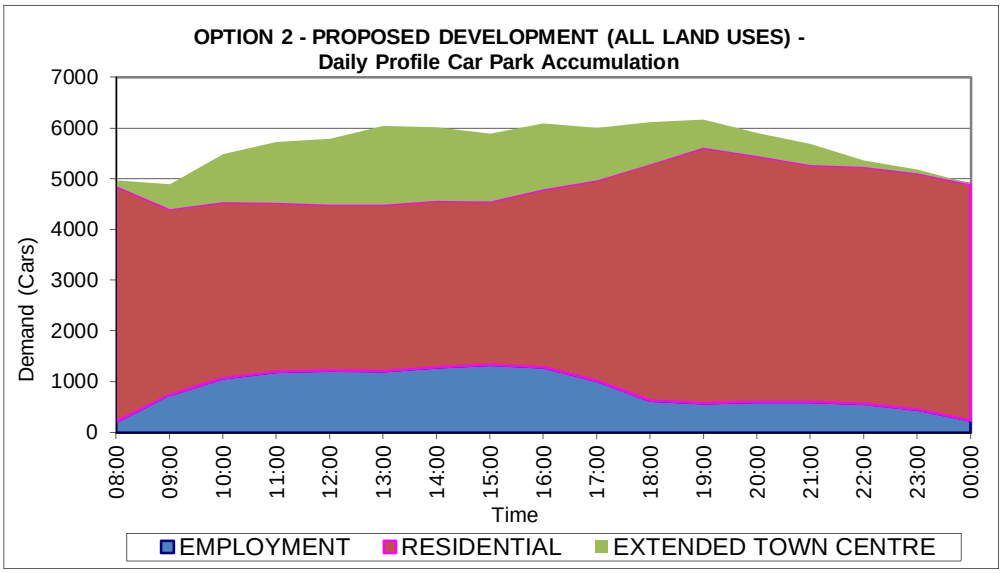


Figure 7.3: Daily Profile of Accumulation for Development Proposals (Option 2)



7.3.22 Figures 7.2 and 7.3 demonstrate that there would still be opportunities to assign parking spaces in the proposed Whitehill & Bordon for shared use between residential, and employment/ extended town centre land uses.

SUMMARY

7.3.23 The main points from the future demand assessment can be summarised as follows:

- The peak in parking accumulation associated with proposed employment sites will occur between 14:00-15:00, with 1335 spaces required;

- The peak in parking accumulation associated with proposed extended town centre will occur between 12:00-13:00, with 1549 spaces required; and
- The peak in parking accumulation associated with the 4000 proposed new dwellings will occur between 18:00-19:00, with 4794 spaces required for Option 1 and 5035 spaces for Option 2.

7.3.24 As a result, the overall peak demand for parking in the proposed Eco-town will occur between 18:00-19:00, with a total of 5934 and 6175 spaces required for Options 1 and 2 respectively, before measures to reduce parking demand are explored.

7.4 REDUCED PARKING DEMAND – OPTIONS APPRAISAL

7.4.1 All approaches and demand management measures explored in Chapter 6 of this report remain the same, however, the revised Masterplan will result in changes to the level of impact that these will have in the proposed Eco-town. This section seeks to re-visit the options appraisal, to present an updated assessment of how these measures will impact the revised levels of development.

TRIP INTERNALISATION

7.4.2 In exploring the potential levels of Trip Internalisation in the proposed Eco-town, it was recognised that a catalyst in this process would be the placement of employment uses adjacent to or amongst residential areas. Whilst this remains the case at the sites of Louisburg, Quebec and the Edge of Town Centre, proposed residential development within Viking Park no longer exists within the revised Masterplan. Since the quantum of housing at the Viking Park covered a relatively small area of the previous Masterplan, and a lower expectation of 20% trip internalisation was previously assumed for robustness, a rate of 20% trip containment is deemed still achievable. Table 7.13 illustrates the potential level of reduction in parking demand across the day as a result of trip internalisation, based on the revised Masterplan proposals.

Table 7.13: Potential Impact of Trip Internalisation

Time	Employment		Extended Town Centre	
	Total	-20%	Total	-20%
07:00-08:00	211	169	122	98
08:00-09:00	746	597	493	394
09:00-10:00	1073	859	947	758
10:00-11:00	1191	953	1209	967
11:00-12:00	1222	978	1305	1044
12:00-13:00	1205	964	1549	1239
13:00-14:00	1285	1028	1447	1157
14:00-15:00	1335	1068	1336	1069
15:00-16:00	1280	1024	1296	1037
16:00-17:00	1015	812	1038	830
17:00-18:00	629	503	833	667
18:00-19:00	577	461	564	451
19:00-20:00	602	482	452	362
20:00-21:00	607	486	425	340
21:00-22:00	568	455	135	108
22:00-23:00	448	358	75	60
23:00-24:00	234	187	5	4

CROSS-VISITATION TRIPS

7.4.3 The potential for cross-visitation trips to occur where there are clusters of retail and leisure land uses is considered to have an impact of up to 20% reduction in parking demand. Table 7.14 presents the impact on parking demand for land uses within the Extended Town Centre defined by the revised Masterplan.

Table 7.14: Car Park Accumulation following Cross-Visitation for Extended Town Centre

Time	A1 Retail	A2 Financial Services	A3 / A5 Food	B1 Office	Overall
07:00-08:00	42	5	5	58	109
08:00-09:00	180	19	7	235	441
09:00-10:00	414	40	27	346	827
10:00-11:00	579	59	41	360	1039
11:00-12:00	603	67	85	361	1116
12:00-13:00	730	75	164	337	1306
13:00-14:00	651	72	163	338	1225
14:00-15:00	615	71	113	338	1137
15:00-16:00	610	71	106	312	1099
16:00-17:00	489	65	119	198	870
17:00-18:00	406	59	161	50	677
18:00-19:00	210	49	185	9	453
19:00-20:00	116	45	200	-	362
20:00-21:00	116	46	178	-	340
21:00-22:00	-	-	108	-	108
22:00-23:00	-	-	60	-	60
23:00-24:00	-	-	4	-	4

7.4.4 Based on the potential for cross-visitation within the Extended Town Centre, the unfettered peak parking requirement reduces from 1549 spaces to 1306. This reduction is largely attributable to the reduction in retail parking demand which reduces from a peak of 913 to 730 spaces.

SHARED-USE PARKING ARRANGEMENTS

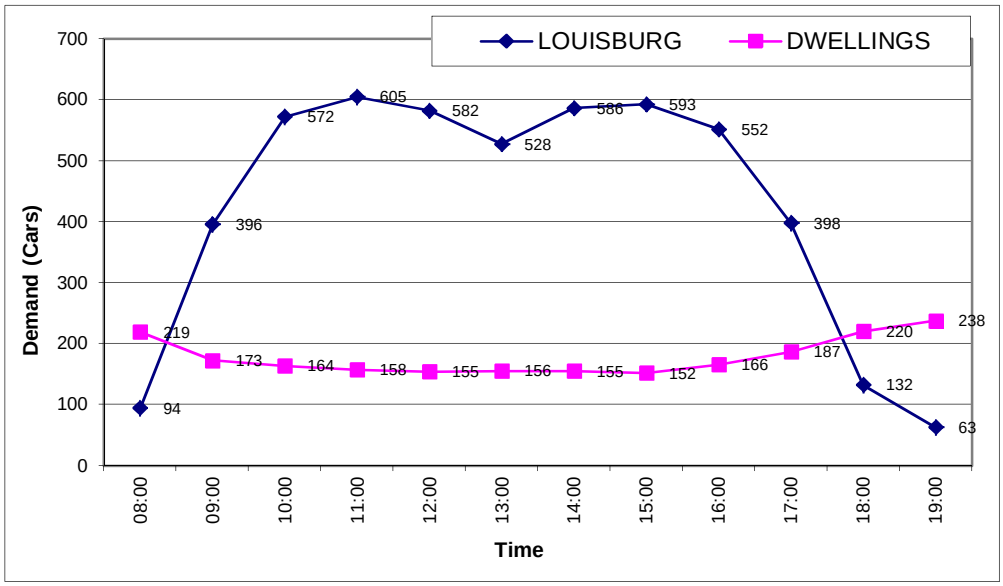
7.4.5 The revised Masterplan indicates that opportunities for shared-use parking for employment and residential uses remain feasible, although, since residential development proposed on the Viking Park site has been removed, shared-use parking here is no longer considered.

7.4.6 As in the original assessment undertaken, the TRICS database has been used to generate parking accumulation at a typical housing development then applied to the estimated housing numbers in proximity to employment sites based on the revised

Masterplan. Figures 7.4 to 7.7 compare the parking accumulation forecasts for each of the employment sites and for the adjacent housing. The approximate housing numbers remain the same as in the previous assessment, with Viking Park housing excluded:

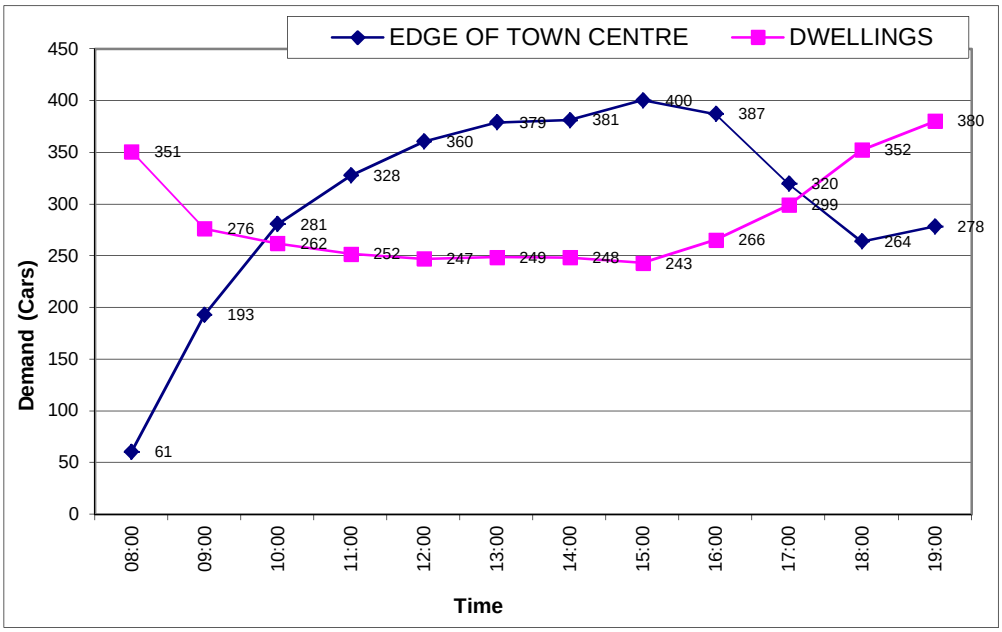
- Louisburg – 250 dwellings;
- Edge of Town Centre – 400 dwellings;
- Quebec – 200 dwellings; and
- Extended Town Centre – 400 dwellings.

Figure 7.4: Louisburg Employment Parking Accumulation against Residential



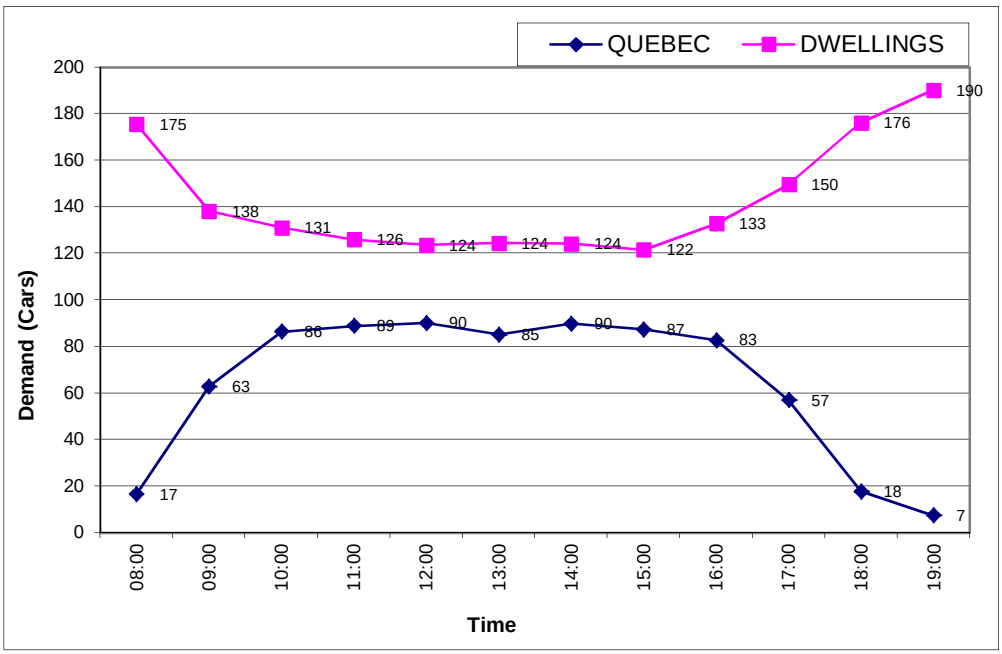
7.4.7 Figure 7.4 indicates that the residential parking demand in close proximity to the Louisburg employment site reduces by approximately 70 spaces during 08:00-18:00. If these empty residential spaces were utilised by employees and visitors during the day, the parking provision for the Louisburg Eco-business Park could reduce by up to 12%.

Figure 7.5: Edge of Town Centre Employment Parking Accumulation against Residential



7.4.8 Figure 7.5 indicates that the residential parking demand for the estimated 400 dwellings in close proximity to the Edge of Town Centre employment site reduces by approximately 110 spaces during 08:00-18:00 which equates to a potential reduction of more than 25% in employment parking provision.

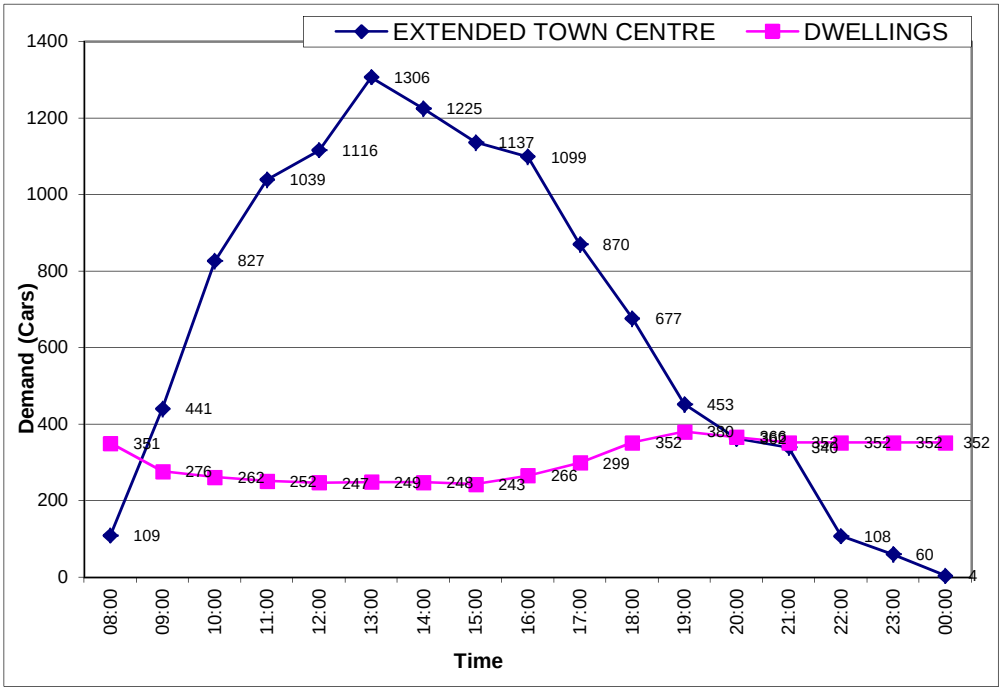
Figure 7.6: Quebec Employment Parking Accumulation against Residential



7.4.9 Figure 7.6 indicates that the residential parking demand for the estimated 200 dwellings in close proximity to the Quebec Eco-business Park reduces by approximately 50 spaces during 08:00-18:00 which equates to approximately 55% of the required

employment parking provision. Shared-use parking in this location offers significant potential to reduce the quantum of parking provided within this area of the Eco-town.

Figure 7.7: Extended Town Centre Employment Parking Accumulation against Residential



7.4.10 Figure 7.7 indicates that the residential parking demand for the estimated 400 dwellings in close proximity to the Edge of Town Centre employment site reduces by approximately 110 spaces during 08:00-18:00 which equates to approximately 10% of the required extended town centre parking provision. Shared-use parking in this location offers significant potential to reduce the quantum of parking provided within this area of the Eco-town.

7.4.11 It has been shown that there is potential to reduce parking provision within the vicinity of the proposed employment sites by between 10% and 25% through the adoption of shared-use principles.

ALLOCATED AND UNALLOCATED PARKING PROVISION

7.4.12 With reference to results from the Savill's Viability Appraisal presented in Chapter 6, it was established that lower car ownership levels could be expected of smaller 1-2 bedroom units, whilst larger units would require at least one car. If habited by families, these larger dwellings may require the use of a second car depending on the location of education and employment establishments. Over time, car ownership levels would be expected to reduce with increased major employers locating to the developing Eco-town.

7.4.13 Previously, this report discussed case studies where a parking provision of 0.7 spaces per dwelling had been achieved through the use of allocated and unallocated parking methods. Taking into consideration the results from Savills' Viability Appraisal, it is believed that this level of provision may be too optimistic and based on current economic conditions, may have a negative impact on the attractiveness to potential residents and therefore financial viability.

7.4.14 This section provides a revised assessment to show the level of provision required for each of the revised Masterplans' character areas, in accordance with the findings from the Viability Appraisal. This is presented in Tables 7.15 and 7.16 below for Options 1 and 2.

Table 7.15: Fettered Car Ownership for Proposed Residential Development (Option 1)

Dwelling Type		Town Centre	Parkland	Satellite	Rural/ Woodland	Overall
House	Dwellings	362	1248	885	343	2838
	Average car ownership levels per dwelling	*1.60*	*1.70*	*1.85*	*1.90*	-
	Cars	**579**	**2122**	**1637**	**652**	**4990**
Flat	Dwellings	844	220	98	-	1162
	Average car ownership levels per dwelling	*0.80*	*1.00*	*1.00*	-	-
	Cars	**675**	**220**	**98**	**-**	**993**
Total		**1254**	**2342**	**1735**	**652**	**5983**

Table 7.16: Fettered Car Ownership for Proposed Residential Development (Option 2)

Dwelling Type		Town Centre	Parkland	Satellite	Rural/ Woodland	Overall
House	Dwellings	844	1248	885	343	3320
	Average car ownership levels per dwelling	*1.60*	*1.70*	*1.85*	*1.90*	-
	Cars	**1350**	**2122**	**1637**	**652**	**5761**
Flat	Dwellings	362	220	98	-	680
	Average car ownership levels per dwelling	*0.80*	*1.00*	*1.00*	-	-
	Cars	**290**	**220**	**98**	**-**	**608**
Total		**1640**	**2342**	**1735**	**652**	**6369**

7.4.15 Tables 7.15 and 7.16 indicate lower parking standards for dwellings in the 'Town Centre' and 'Parkland' character areas, in line with achievements deemed feasible by Savills' Viability Appraisal. This results in an overall provision of 5983 and 6369 for options 1 and 2 respectively, equating to an increase of 677 and 796 from the unfettered demand presented in Tables 7.7 and 7.9.

7.4.16 These recommendations for residential parking provision supersede those presented in an earlier version of the strategy previous to the Strategy Recommendations Consultation (now included in Appendix G for reference), due to

comments that parking provision in line with current levels of car ownership within Whitehill & Bordon may be too stringent. It should however be noted that car ownership levels for military personnel based at the barracks is included within the data for the Whitehill Hogmoor ward. The quantum of fettered provision presented in Tables 7.15 and 7.16, which remains lower than that calculated by existing Hampshire Parking Standards, is to be taken forward as part of the strategy recommendations, and is summarised along with the likely impact of measures in Tables 7.17 and 7.18.

CAR CLUBS

7.4.17 Evidence from exemplar case studies indicated that a Car Club uptake of 10% is achievable. Based on the revised Masterplan, it could be assumed that 1306 / 1573 dwellings (option 1 / 2) will own more than one car (4000 dwellings against 5306 / 5573 cars). Therefore a 10% uptake in car club membership would result in an overall reduction in residential parking demand of 531 / 557 spaces respectively, bringing the overall requirement down to 4775 / 5016 spaces for Option 1 / 2 respectively.

7.4.18 Since the revised Masterplan consists of the same level of residential development at 4000 dwellings, 40 car club vehicles is still considered a reasonable level of initial provision with scope to increase with demand. This level of provision would allow the 1306 / 1573 dwellings that would be assumed to have more than one car, and a proportion of those dwellings without a car, to have convenient access to a car when needed. A revised plan showing optimum locations for placement of car club vehicles can be seen on Figure 7.8.

7.4.19 This measure would also remain beneficial for implementation at employment sites. As seen in exemplar case studies, a 5% uptake in membership of all workplaces could result in an overall reduction in employment-related parking demand of 67 spaces, lowering the overall requirement from 1335 down to 1268 spaces.

7.5 SUMMARY OF RECOMMENDATIONS

7.5.1 Due to amendments to the Masterplan, the assessment of future parking demand has been updated to accord with the new development schedule. As a result, the potential impact by the compiled package of measures to reduce parking demand has also been amended. This section seeks to update the previous Parking Strategy conclusions discussed in Appendix E.

EXEMPLAR CASE STUDIES

7.5.2 Through the compilation of exemplar case studies, it has been possible to identify best practice at developments with similar sustainable transport aspirations. These case studies highlighted the most successful parking management mechanisms, which have been explored as part of the parking strategy for the new eco-town at Whitehill & Bordon.

AUDIT OF BASELINE PARKING PROVISION

7.5.3 An analysis of the existing residential parking demand concluded that, based on an average existing car ownership of 1.50 vehicles, there is scope to reduce current demand to one vehicle per household through smarter travel choices and parking demand management measures.

7.5.4 It was established that existing car parks in Whitehill & Bordon are significantly under-utilised and hold potential, along with additional parking provision, to offer shared uses between residential and non-residential development.

ASSESSMENT OF FUTURE PARKING DEMAND

7.5.5 The revised Masterplan provides levels of development for employment, residential and land uses proposed as part of the extended town centre. Based on each of these land uses, trip generation methods were used to forecast the levels of future parking demand generated by the new development. It was determined that, before any options for reducing parking demand were considered, a total of 5934 / 6175 new spaces would be required based on Options 1 and 2.

RECOMMENDATIONS FOR REDUCING PARKING DEMAND

7.5.6 A number of measures have been examined as part of this parking strategy. The main recommendations deemed most effective and deliverable for the new eco-town are as follows:

- To provide unallocated parking where possible, in order to retain control over parking supply in the future;
- To develop an eco-town where cars do not dominate the streets, through the provision of discreet parking and aboveground / underground parking barns where possible;
- To create incentives / restrictions for dwellings in order to discourage the ownership of a second car, through council tax reductions for no car ownership / resident parking charges / reductions for environmentally-friendly cars;
- To consider the implementation of Workplace Parking Levies for employment sites, firstly ensuring a high quality public transport system is in place, and increasing these charges over time;
- To use existing and future parking supply to its full potential through providing shared use spaces for all complimentary land uses i.e. residential and employment uses;
- To develop proposals for a decriminalised parking regime in Whitehill & Bordon;
- To ensure that a suitable level of parking is provided for disabled users, initially free of charge;
- To set a pricing structure at all retained and proposed Whitehill & Bordon car parks which supports the aim to reduce private car use whilst maximising the viability of the town centre, concentrating short stay spaces in the town centre for access to its facilities and long stay spaces at the edge of the town;
- To improve and implement signage both for drivers by road to the car parks, and on foot from the car parks to the key town centre destinations, in a way which reduces traffic circulation and pedestrian movement around the town;
- To require developments to create and implement Travel Plans in accordance with Hampshire County Council policy, encouraging smaller developments to implement Travel Plans, even if not required; and
- To consider options for the introduction of car clubs for residential and employment use. These would have the most potential for impact if placed adjacent to the ‘Green

Views' and 'Green Roots', providing an alternative to the ownership of 1 or 2 cars respectively.

7.5.7 Whilst these options are considered to significantly manage the demand for parking in the future, they should be complemented by measures which provide alternative sustainable travel choices for journeys such as those outlined in section 6.4. These provide the balance of 'carrot and stick' methods which will be required to deliver policy objectives whilst accommodating likely future demand for parking.

7.6 PARKING STRATEGY

7.6.1 This section seeks to summarise the levels of parking that should be provided within Whitehill & Bordon, based on achievements seen at exemplar case studies, and the feasibility work carried out to assess how successful these measures could be at Whitehill & Bordon.

RECOMMENDED RESIDENTIAL PARKING PROVISION

7.6.2 Unfettered residential parking demand indicated a need for 5306 / 5573 spaces for 4000 new dwellings. In considering the measures explored in Chapter 6 of this report, including the updates for the revised Masterplan presented earlier in this Chapter, and the likeliness of their success as shown in Table 6.5, residential parking should be provided as shown in Tables 7.17 and 7.18.

Table 7.17: Overall Residential Parking Provision (Option 1)

Unfettered Demand		Impact of Measures			Fettered Provision
		Shared Use	Car Clubs	Overall Level of Reduction	
Town Centre	**1220**	-115	-122	-646	**1254**
Satellite	**2021**		-202		**2342**
Parkland	**1431**		-143		**1735**
Rural/Woodland	**633**		-63		**652**
TOTAL	**5306**	-115	-531	4660	**5983**

Table 7.18: Overall Residential Parking Provision (Option 2)

Unfettered Demand		Impact of Measures			Fettered Provision
		Shared Use	Car Clubs	Overall Level of Reduction	
Town Centre	**1488**	-115	-149	-672	**1640**
Satellite	**2021**		-202		**2342**
Parkland	**1431**		-143		**1735**
Rural/Woodland	**633**		-63		**652**
TOTAL	**5573**	-115	-557	4901	**6369**

7.6.3 Tables 7.17 and 7.18 present the potential reduction in parking demand caused by shared use spaces, which would comprise 230 spaces in total across the Eco-town at adjacent residential and employment sites. Half of these have been deducted from the residential parking demands above, whilst the other half will be deducted from employment-related demand. The assumption of a 10% reduction in parking demand triggered by the introduction of car clubs, as achieved in Hammarby Sjöstad, has also been presented.

7.6.4 It is recommended that residential spaces are provided as unallocated with consideration given to part of the provision being contained in discrete parking barns and/or underground parking with the aforementioned shared allocation, and supported by 5 car club locations as shown illustrated on Figure 7.8.

7.6.5 Along with other measures explored in Chapter 6 such as the provision of parking barns, the recommended level of provision would be consistent with that shown in Tables 7.15/7.16, where an average 1.50/1.59 unallocated spaces per dwelling is provided for options 1 and 2 respectively. This level of fettered provision is deemed viable in consideration of the likely higher unfettered position due to the removal of military personnel and the likely impact of measures, and therefore the fettered provision shown in Tables 7.17 and 7.18 is recommended by the strategy.

RECOMMENDED EMPLOYMENT PARKING PROVISION

7.6.6 Assessment of unfettered employment-related parking demand for Whitehill & Bordon indicated that 2322 spaces would be required, based on the peak demand at each individual employment site shown in Tables 7.2 and 7.6. In summary of the proposed measures outlined in Chapter 6, Table 7.19 presents their likely impact on the unfettered demand.

Table 7.19: Overall Employment Site Parking Provision

Unfettered Demand		Impact of Measures				TOTAL (Fettered)
		Shared Use	Car Clubs	Trip Internalisation	Travel Plan (i.e. Car Share)	
Louisburg	**605**	-35	-30	-121	-61	**358**
Edge of Town Centre	**400**	-55	-20	-80	-40	**205**
Viking	**310**	0	-16	-62	-31	**201**
Quebec	**90**	-25	-5	-18	-9	**33**
Employment in Extended Town Centre	**917**	-55	-46	-183	-92	**541**
TOTAL	**2322**	-170	-117	-464	-233	**1338**

7.6.7 Table 7.19 includes 50% of the reductions for shared use allocation between employment and residential, and employment with retail/leisure. A 5% employment-related parking demand reduction comparable to that achieved by the introduction of car clubs in Hammarby Sjöstad has also been applied. Trip Internalisation would result in a 20% reduction as shown, with Travel Plans expected to lower private car use by 10% through measures such as car sharing and promotion of sustainable travel methods.

RECOMMENDED RETAIL / LEISURE PARKING PROVISION

7.6.8 Assessment of the parking demand for retail and leisure uses indicated an unfettered requirement of 632 spaces within the extended town centre, which excludes the provision for town centre commuting trips which has been assessed above. Effects of several factors are shown in Table 7.20, with the resulting total fettered demand also presented.

Table 7.20: Overall Retail / Leisure Parking Provision

Unfettered Demand	Impact of Measures			TOTAL (Fettered)
	Cross - Visitation	Shared Use	Trip Internalisation	
632	-126	-55	-126	**325**

7.6.9 Table 7.20 shows a reduction of 20% for cross-visitation, 55 spaces available for shared use allocation between employment and retail/leisure uses, and 20% reduction applied for trip internalisation. This reduces the unfettered retail/leisure demand from 632 spaces in the extended town centre, to 325 spaces.

7.7 OVERALL PARKING PROVISION

7.7.1 Summarising the above recommendations for parking provision, Tables 7.21 and 7.22 outline the fettered demand and the resulting parking standard for each land use, for the residential Options 1 and 2.

Table 7.21: Overall Parking Provision for Proposed Eco-town (Option 1)

Land Use		Units / Jobs	Fettered Demand	Parking Standard
Residential	Town Centre	1206 units	1254	1.04 per unit
	Satellite	1468 units	2342	1.60 per unit
	Parkland	983 units	1735	1.77 per unit
	Rural / Woodland	343 units	652	1.90 per unit
Employment Sites	Louisburg	1084 jobs	358	0.33 per employee
	Edge Town Centre	822 jobs	205	0.25 per employee/ leisure visitor
	Viking	250 jobs	201	0.80 per employee/ leisure visitor
	Quebec	154 jobs	33	0.21 per employee
Retail	Extended Town Centre	2498 jobs	866	0.35 per employee/shopper

Table 7.22: Overall Parking Provision for Proposed Eco-town (Option 2)

Land Use		Units / Jobs	Fettered Demand	Parking Standard
Residential	Town Centre	1206 units	1640	1.36 per unit
	Satellite	1468 units	2342	1.60 per unit
	Parkland	983 units	1735	1.77 per unit
	Rural / Woodland	343 units	652	1.90 per unit
Employment Sites	Louisburg	1084 jobs	358	0.33 per employee
	Edge Town Centre	822 jobs	205	0.25 per employee/ leisure visitor
	Viking	250 jobs	201	0.80 per employee/ leisure visitor
	Quebec	154 jobs	33	0.21 per employee
Retail	Extended Town Centre	2498 jobs	866	0.35 per employee/shopper

7.7.2 By implementing the recommended measures explored within this Parking Strategy, it is deemed realistic that this level of provision will be sustainable and provide necessary support to the overall eco-vision of Whitehill & Bordon.

7.8 PARKING STRATEGY DELIVERABILITY

7.8.1 The revised Whitehill & Bordon Masterplan outlines the timescales for development coming forward in four phases, with the first phase covering the period until the expected MoD withdrawal in 2015, and three further phases spanning years 2015-2019, 2020-2024 and 2025 onwards. Quantum of development assumed for each phase is as follows:

- Phase 1 – 150 homes and 404 jobs provided solely by the Quebec and Viking employment sites;
- Phase 2 – 1400 homes and 1791 jobs provided by approximately half of the Extended Town Centre and partly by the Louisburg Eco-business Park;
- Phase 3 – 1400 homes and 1364 jobs provided by the Edge of Town Centre employment site and completion of the Louisburg Eco-business Park; and
- Phase 4 – 1050 homes and 1249 jobs provided by the completion of the Extended Town Centre.

7.8.2 In view of findings of the Viability Appraisal, it would be advisable to reduce overall development parking provision gradually over time through a series of measures presented in this Parking Strategy. Tables 7.23 and 7.24 illustrate a potential approach for delivering the parking strategy for Options 1 and 2, including quantum of parking throughout these phases.

Table 7.23: Delivery Phasing for Parking Provision (Option 1)

Phase		Residential		Employment		Extended Town Centre
		Units	Provision	Jobs	Provision	Provision
1	Provision	150	250	404	184	-
	Shared Use	50				
	Parking Standard	2.00		0.58		
2	Provision	1400	2360	1791	422	200
	Shared Use	90				
	Parking Standard	1.75		0.33		
3	Provision	1400	1940	1364	239	-
	Shared Use	90				
	Parking Standard	1.45		0.28		
4	Provision	1050	1148	1249	208	70 (+55 spaces shared with residential use)
	Shared Use	55 (shared with retail)		-		
	Parking Standard	1.15		0.17		
TOTAL		5983		742 (at employment sites)		325
				541 (at extended TC) →		
Resulting Parking Standard		1.50 per dwelling		0.27 per employee		0.14 per shopper

Table 7.24: Delivery Phasing for Parking Provision (Option 2)

Phase		Residential		Employment		Extended Town Centre
		Units	Provision	Jobs	Provision	Provision
1	Provision	150	250	404	184	-
	Shared Use	50				
	Parking Standard	2.00		0.58		
2	Provision	1400	2500	1791	422	200
	Shared Use	90				
	Parking Standard	1.85		0.33		
3	Provision	1400	2090	1364	239	-
	Shared Use	90				
	Parking Standard	1.56		0.28		
4	Provision	1050	1244	1249	208	70 (+55 spaces shared with residential use)
	Shared Use	55 (shared with retail)		-		
	Parking Standard	1.24		0.17		
TOTAL		6369		742 (at employment sites)		325
				541 (at extended TC) →		
Resulting Parking Standard		1.59 per dwelling		0.27 per employee		0.14 per sqm

7.8.3 At each stage of the phasing, any shared use opportunities between complimentary uses have been taken into consideration for the level of parking provision. It should be noted that employment use includes parking demand related to commuting trips as part of the Extended Town Centre. Tables 7.23 and 7.24 show that levels of provision become more stringent through the development delivery stages, due to the more generous provision during the early stages. As peoples' attitudes begin to change, levels of provision will be reduced across all land uses; a strategy enabled through retaining ownership of parking supply.

7.8.4 It is recommended that to support the achievement of the parking strategy a monitoring programme is maintained to gauge trends in car ownership and trip making patterns. This could be introduced as a measure associated with adoption of the development travel plan and would provide a tool for on-going review of policy objectives and development outcomes.