WHITEHILL & BORDON

eco

TOWN

Public Transport Strategy

March 2012

Hampshire County Council

Prepared by Hampshire County Council
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Executive Summary

This Public Transport Strategy for Whitehill & Bordon outlines a framework for the future public transport system, identifying the improvements needed to challenge and change attitudes to public transport amongst current residents, reduce the dominance of the private car in current travel patterns, minimise any negative transport impacts of the town's regeneration on local communities and the environment and, above all, to make it a real possibility to live in Whitehill & Bordon without having to own a car.

The details of the strategy have been developed following extensive assessment of potential bus, bus rapid transit, ultra light rail, light rail and heavy rail options/routes as well as consultation with stakeholders and the public, to meet the transport objectives of the town's regeneration as set out in the September 2011 Emerging Transport Strategy.

This Public Transport Strategy sets out a package of recommended interventions which focus on delivering improved accessibility to existing rail stations in the local area by a variety of modes, together with high quality bus services to cater for movement between homes, employment and recreational destinations. These bus services will be implemented at three levels:

- **Town** – the provision of a circular town service, hourly in the early stages of Whitehill & Bordon's regeneration but with the feasibility of delivering frequency improvements (to every 30 minutes or better) under ongoing review as residential/employment development progresses;
- **Local** – along the main transport corridors linking Whitehill & Bordon with nearby towns, local villages will be served by conventional scheduled bus services providing a combined frequency ranging between every 15 to 30 minutes when the development is fully built out. Settlements away from the main transport corridors will be served by demand-responsive provision, connecting to the wider public transport network as well as to key destinations in Whitehill & Bordon (e.g. shopping, healthcare and education); and
- **Sub-regional** – new and improved links will connect Whitehill & Bordon with major regional employment and shopping centres, including the Blackwater Valley, Basingstoke and Guildford, providing a combined frequency ranging from a maximum of every 15 minutes to a minimum of every 60 minutes when the development is fully built out. Many of these services will operate on an express limited stop basis, providing journey times competitive with the private car.

The above strategy is considered to deliver realistic and, in the longer term, commercially viable proposals which can be funded without compromising the economic viability of the Whitehill & Bordon project itself. However, they will need to be delivered alongside a range of supporting measures, including a town centre Transport Hub and improved bus stop facilities throughout the town, a permeable street network, improvements to the local highway network and a sustained information/marketing campaign. The long term viability of the public transport proposals will also depend on the successful implementation of complementary transport strategies, such as the Car Parking Strategy, Town Travel Plan and Freight Strategy.

The opportunity is available to implement a high quality integrated and modern public transport system which supports sustainable economic growth, provided that it is adequately resourced through a combination of funding sources.

Chapter 1 – Introduction

The proposed redevelopment and regeneration of Whitehill & Bordon, following the withdrawal of the Army, will provide some 4,000 new homes and 5,500 new jobs, together with a new town centre, retail, leisure and community facilities.

As Whitehill & Bordon becomes an increasingly important economic hub for East Hampshire and beyond, so the dynamics of travel will change. One of the critical elements in delivering sustainable[1] economic growth and regeneration in the town over the next 25 years will be the provision of deliverable, attractive and necessary improvements to the transport network, framed by a strategy which seeks to minimise car dependency by maximising opportunities for sustainable travel wherever and whenever possible.

An Eco-town Vision has been developed and approved by the Whitehill & Bordon Delivery Board, one element of which aspires to enhance and promote public transport so that it is easier to travel around the town and to other towns and cities. This Vision is supported by targets specific to 'traffic and transport' as set out later in the document.

To supplement the project vision, an Emerging Transport Strategy was adopted in September 2011 and provides the Transport Vision;

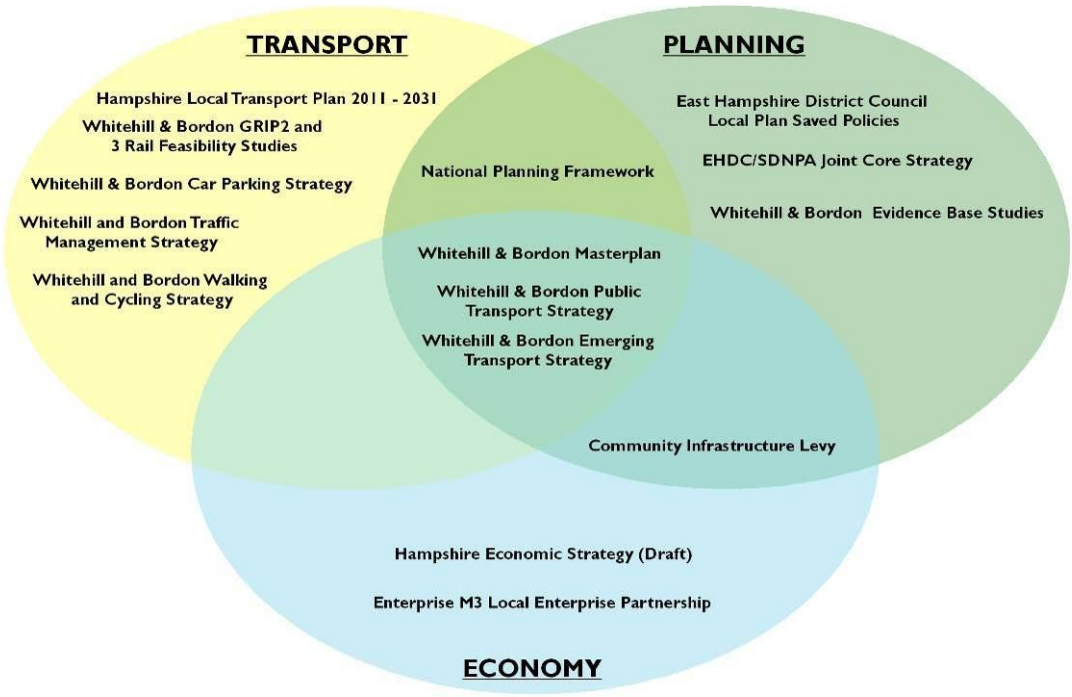
> *Achieve sustainable growth in the long term by delivering an integrated low carbon transport system that will be at the forefront of innovative thinking, providing high-quality, affordable and deliverable alternatives to the private car, managing transport demand and maximising the use of existing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

If the above Vision is to be realised, an essential element of the Transport Strategy for Whitehill & Bordon must be to deliver a 'step change' in public transport accessibility. This document presents a Public Transport Strategy for Whitehill & Bordon which identifies the improvements needed to:

- Challenge and change attitudes to public transport amongst current residents;
- Encourage sustainable travel behaviour from the earliest stages of development;
- Promote sustainable economic growth by helping to manage the increase in car travel demand and make the town more accessible to those without a car; and
- Minimise any negative transport impacts of the regeneration of Whitehill & Bordon on local communities and the environment.

The diagram below illustrates how the Public Transport Strategy sits within the wider policy and strategy framework.

[1] Wherever used in this document, we define "sustainable" as: meeting the needs of the present without compromising the needs of future generations or harming the planet.



The above is a simplification of what is a complex policy framework; however the overarching aim is to drive sustainable economic growth through the high quality regeneration of Whitehill & Bordon to create a place where people choose to live, work, shop and play.

The draft Public Transport Strategy was subject to consultation between September and December 2012. During this period, paper questionnaires were available at the Forest Centre, library and other locations, in addition to an online survey at www.whitehillbordon.com. This final strategy takes into account comments received from stakeholders and the public. A consultation log summarising these comments and the County Council's response is included as **Appendix A**.

The document is structured as follows:

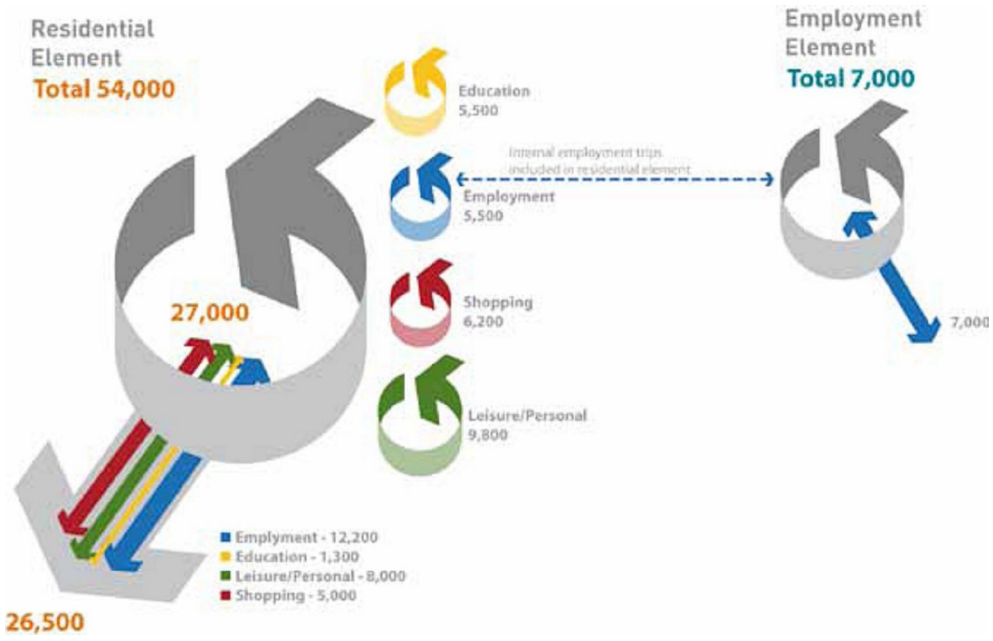
- Chapter 2 reviews the current challenges and opportunities for public transport in the Whitehill & Bordon area;
- Chapter 3 presents the revised masterplan, highlighting the infrastructure which will be provided in the town to support the target public transport modal split;
- Chapter 4 summarises the phases of strategy development and how various transport studies have informed the final strategy;
- Chapter 5 sets out the preferred package of public transport measures;
- Chapter 6 considers the supporting measures which will be essential if the preferred public transport package is to be deliverable;
- Chapter 7 evaluates the likely impacts of the public transport strategy;
- Chapter 8 identifies a framework for delivering the strategy with respect to potential funding sources and a programme for implementation; and
- Chapter 9 draws together the key findings of the above Chapters.

Chapter 2 – Public Transport: Challenges and Opportunities

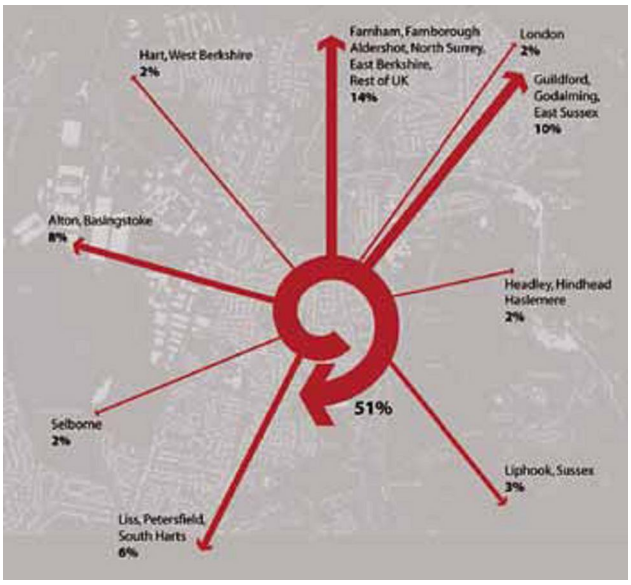
Existing travel patterns

Whitehill & Bordon currently has a population of around 14,000 people and 6,000 homes (not including Lindford). The main mode of travel is the car, with car driver/passenger trips accounting for 71% of trips (all purposes, 2007 base). An encouraging 20% of trips are made on foot, but currently only 5% of trips are made by public transport.

The diagram below summarises the existing overall daily movement created (all modes and journey types) by those living and working in Whitehill & Bordon, broken down by journey type and destination (i.e. whether trips are internal or external to the town). It shows that a high proportion of existing trips are internal to Whitehill & Bordon (51% or 27,000 trips), with a further 7,000 trips into the town associated with employment uses. The high level of containment reflects in large part the Army presence in the town and the way in which it operates.



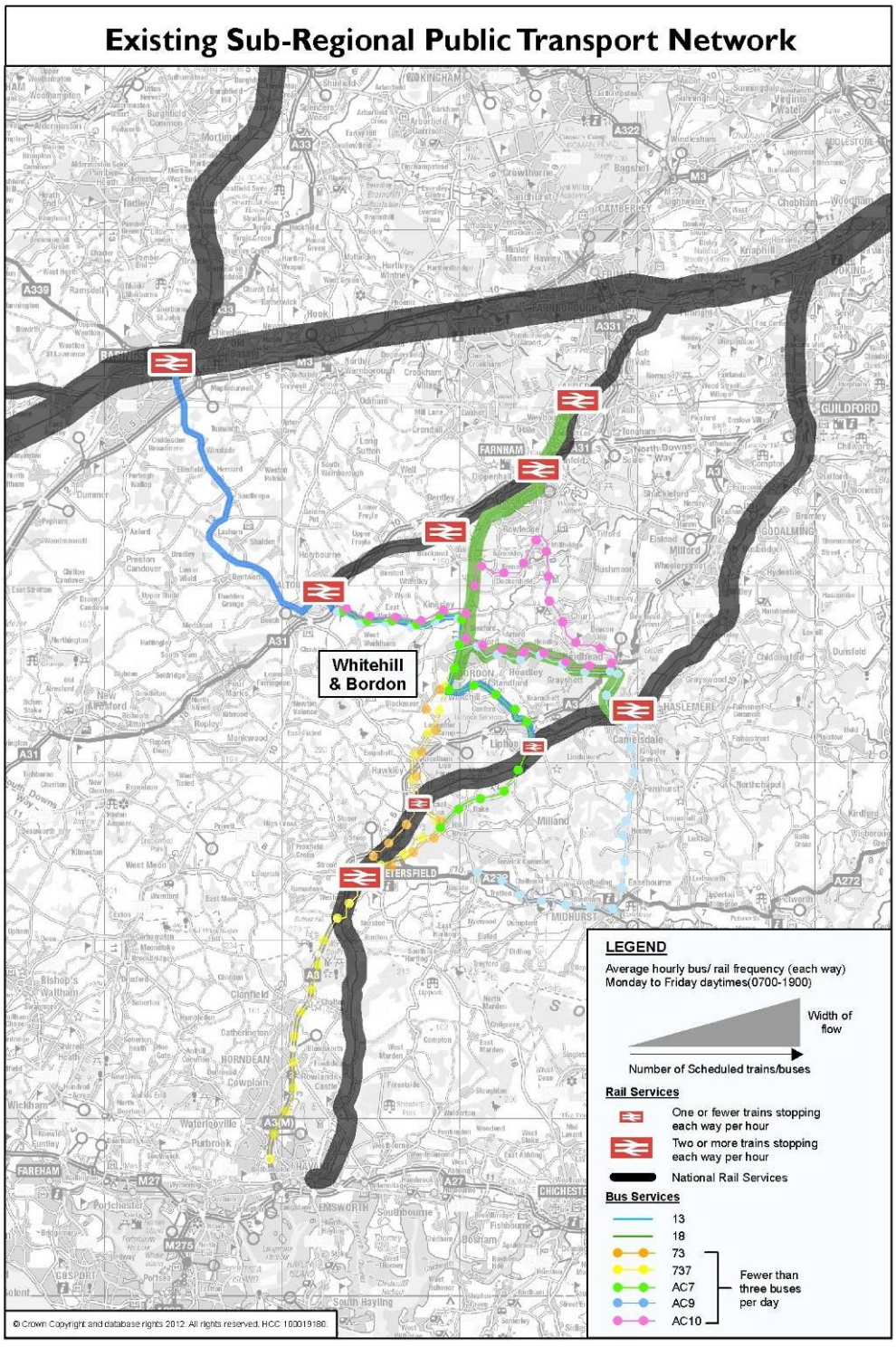
Analysis of existing travel patterns has shown that when people do travel outside the town, trips are widely dispersed between a number of destinations including the Blackwater Valley to the north, Portsmouth and South Hampshire to the south and Alton, Basingstoke and Petersfield more locally, as shown in the diagram.



For journeys to work there is a high level of out-commuting. Workplace locations are highly dispersed which has engendered heavy reliance on the private car. Currently 74% of the population travel to work by car, with only 2% doing so by bus (2001 Census).

Current public transport provision

Heavy reliance on the private car amongst Whitehill & Bordon residents is reflected in the low level of public transport provision. The town currently has no direct railway service and bus service provision is limited. There are currently two principal bus services operating through Whitehill & Bordon, Service 13 which connects Basingstoke and Alton with Liphook and Service 18 which connects Aldershot with Haslemere. The weekday daytime frequency of these and other bus services operating in the vicinity of Whitehill & Bordon, together with the frequency of rail services from local stations, is illustrated below.

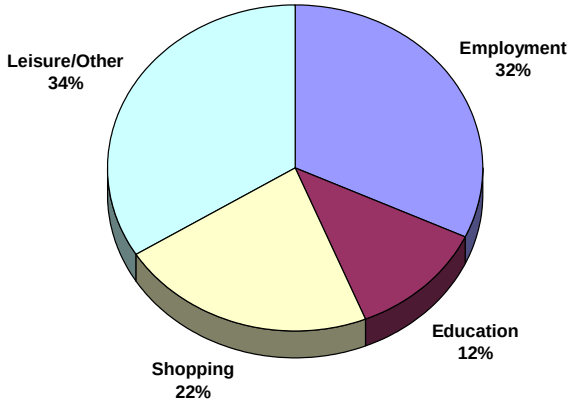


In addition, two demand responsive services operate locally using wheelchair accessible minibuses, i.e. the Bordon Link serving areas in the town not covered by scheduled bus services, and the East Hampshire Call and Go serves many local villages (predominantly to the east and south of the town) on alternating days.

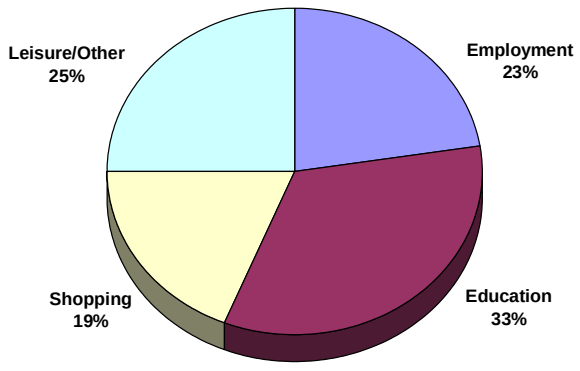
Although bus services provide access from Whitehill & Bordon to local rail stations, evening services and services on Sundays and Bank Holidays are limited, and no direct service is provided to some of the major destinations such as Guildford or Petersfield. Bus patronage levels are commensurately low, with boarding surveys undertaken in November 2009 indicating that approximately 400 boardings are made per day from Whitehill & Bordon, split evenly between Services 13 and 18[2]. Approximately 80% of the recorded boardings on Service 13 were towards Alton, reflecting the importance of Alton as a destination for shopping and education (Alton College). Similarly, approximately 80% of the recorded boardings on Service 18 were towards Farnham and Aldershot, which reflects that the service eastbound towards Headley/Haslemere is only hourly.

Bus user interviews undertaken during the same period (222 usable responses) suggest that the key destinations for Whitehill & Bordon residents are Alton, Farnham and Aldershot. A significantly smaller number use the bus for trips internal to Whitehill & Bordon. The interviews suggest that the inbound bus travel market to Whitehill & Bordon is limited, with trips being made most frequently from the Alton area (East Worldham and westwards) but few from other origins (such as Farnham or Aldershot). This reflects the limited retail/leisure offer currently available within the town.

The pie charts below compare the interview findings with UK data from the 2001 Census, which indicates that the proportion of bus travel locally for education purposes is higher and bus travel for work and leisure is lower than the UK average for all modes.



Reasons people travel – 2001 Census



Reasons people travel – Whitehill & Bordon Bus Users (2009)

Bus services in the town are generally operated on a commercial basis, with the exception of early morning/late evening and Sunday services which are subsidised by Hampshire

[2] This total does not include boardings of occasional bus services, namely Services 73, 737, AC7, AC9, AC10 and the Bordon Link (the latter having approximately ten boardings per day (Monday to Saturday)).

County Council. However, Service 18 is operationally interlinked with Service 19 (Aldershot to Haslemere), for which financial support has recently been withdrawn by Surrey County Council. Consequently, Stagecoach South has deregistered Service 18 between Whitehill & Bordon and Haslemere which is now the subject of financial support from Hampshire County Council. Furthermore, the commercially operated journeys on Service 13 are understood to be marginal and additional financial support may be required in the future to maintain the bus route in its current form.

Issues constraining public transport use

The low level of public transport provision is manifested in the problem of poor accessibility to key facilities for those Whitehill & Bordon residents without access to a car. This can make it difficult for people to access employment, education, healthcare and shopping opportunities, leaving them both economically and socially disadvantaged.

Addressing poor accessibility is one of the core objectives of the Hampshire Local Transport Plan. Work to achieve this has included an accessibility study in Whitehill & Bordon during 2007, featuring the analysis of travel questionnaire surveys from pupils at Mill Chase Community Technology College and almost 800 households. Respondents were asked to state the main difficulty they perceived in catching a bus to the hospital, college/sixth form, rail station, shopping centre and workplace. Analysis of the completed questionnaires reveals the following key themes:

- Many destinations are not accessible from Whitehill & Bordon by bus, and if bus services are available, their frequencies are too low to be a real alternative to the car;
- Low bus frequencies mean that connections with rail services are difficult;
- Bus fares are perceived to be too expensive;
- The need to change between buses to complete many journeys (such as to North Hampshire Hospital in Basingstoke) represents a significant journey time penalty;
- Facilities could be improved, in terms of access to bus stops and the waiting facilities and information which are provided there; and
- Reliability is perceived to be poor.

With respect to bus fares, the table below compares the cost of bus and private car travel for a selection of typical journeys from Whitehill & Bordon, using fare tables supplied by Stagecoach South and car running cost inputs from the AA[3].

Bus Service	Origin	Destination	Single Bus Fare[4]	Assumed One-way Car Journey Distance (km)	Estimated Car Journey Cost (Running Costs Only)	Estimated Car Journey Cost (Fixed plus Running Costs)
13	Bordon Camp Fire Station	Alton	£2.60	12.6	£1.71	£3.56
13		Basingstoke	£5.10	37.5	£5.10	£10.60
18		Aldershot	£4.50	17.9	£2.44	£5.06
No direct service		Guildford	£8.20 (Dayrider Gold)	29.8	£4.06	£8.42

Although return bus tickets usually offer a small discount on the single fare, the table does indicate that the cost of bus travel to nearby urban centres is expensive compared to the cost of private car journeys. However, this does not account for fixed vehicle costs such as road tax, insurance and depreciation, which many private car users effectively "write off". These fixed vehicle costs, together with parking charges if these are levied, make bus fares much more competitive with the equivalent private car journey (assuming that the car user is driving alone).

Bus service provision within Whitehill & Bordon relies upon long sub-regional bus routes which are susceptible to significant variations in journey time, for example due to buses encountering congestion in areas such as Wrecclesham, Farnham, Aldershot and Alton. Although operators endeavour to maintain service reliability through the addition of extensive recovery time, this worsens the already uncompetitive position of bus journey times relative to the private car. For example the bus journey to Aldershot town centre takes approximately 58 minutes from Bordon Camp Fire Station, and the bus journey to Basingstoke town centre approximately 47 minutes[5]. The equivalent journeys by private car, estimated using journey planning software for free-flow traffic conditions, would take approximately 25 minutes to Aldershot and 45 minutes to Basingstoke. Although the advertised bus journey time to Basingstoke is comparable with that by car, it does not include bus stop access, waiting and egress time.

Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

The issues relating to the existing public transport offer in the Whitehill & Bordon area have been encapsulated within a SWOT analysis, shown below.

[3] Car running costs 2011/12. Source: http://www.theaa.com/motoring_advice/running_costs/index.html. Calculations assume the use of a small petrol car costing less than £12,000 when new and unleaded petrol at June 2012 prices (£1.34 per litre).
[4] Based on Stagecoach South fare tables (July 2012)
[5] Based on published Stagecoach South bus timetables (July 2012).

Strengths

- Regular rail services from local stations (Farnham, Haslemere, Liphook)
- Some co-ordination between bus and rail services
- Relatively modern accessible low-floor bus fleet
- Concessionary bus pass scheme has created reliable patronage base

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Weaknesses

- No direct rail service from Whitehill & Bordon
- Key destinations not served by direct bus services (Petersfield, Guildford)
- Regular scheduled bus services are sub-regional only, which restricts penetration of the town and contributes to unreliability
- Low bus service frequencies
- High bus journey times
- Invisible/unappealing infrastructure (e.g. bus stop flags, shelters, raised kerbs)
- Free car parking within Whitehill & Bordon (e.g. Forest Centre and Tesco)
- Few inbound bus trips due to lack of local retail offer and lack of non-MoD jobs

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Opportunities

- Integration of land use and transport planning through Whitehill & Bordon Masterplan
- New interchange facilities (central hub, bus stops around town)
- Improved bus/rail connectivity through increased bus frequencies and better station parking facilities
- Provision of direct bus services to destinations not currently served from Whitehill & Bordon (Petersfield, Guildford, Havant)
- Provision of regular scheduled local bus service to improve public transport penetration of the town
- Car parking management in Whitehill & Bordon
- Funds for revenue support via developer contributions
- Proposed junction improvements/ possible installation of Selective Vehicle Detection could improve bus operating conditions
- Use of new low carbon vehicle technology

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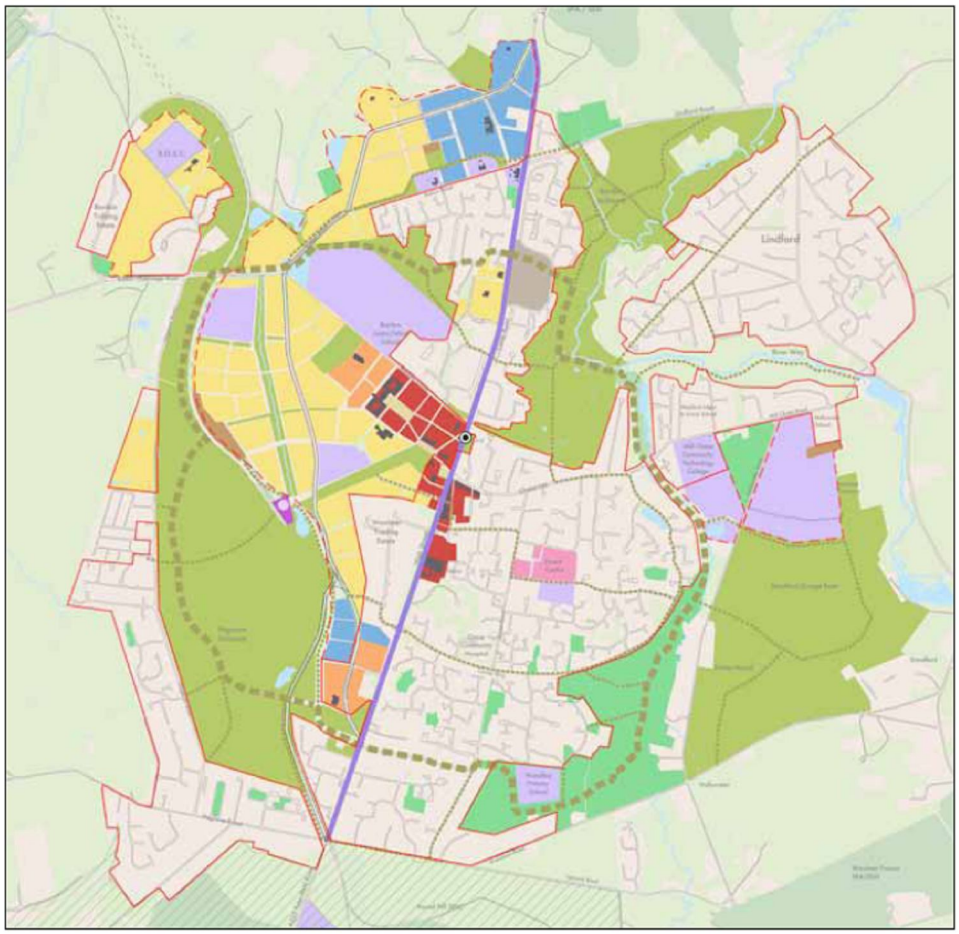
Threats

- Withdrawal of existing commercial services by bus operator
- Hampshire County Council withdrawal of operating subsidies for existing bus services
- Long term availability of revenue support for new/improved bus services
- Insufficient capital and/or revenue funding for sustainable transport schemes
- Reduced central government funding for concessionary bus fares reimbursement
- Reduced central government funding for Bus Service Operators Grant
- Growth in car ownership
- Continued dispersal of land use activities despite Whitehill & Bordon Masterplan
- Deliverability of bus priority measures

Chapter 3 – The Masterplan

Overview

Integral to the successful regeneration of Whitehill & Bordon is the long-term integration of land use and transport planning. The Whitehill & Bordon Eco-town Masterplan (Revised May 2012), shown below, promotes the location of facilities where they are needed within the town, reducing the need for external trips and ensuring that all transport within the town can easily and comfortably be made by sustainable modes, such as public transport. The masterplan proposes the integration of transport modes through the delivery of well designed walking and cycling routes to connect with public transport opportunities.



The masterplan proposal map

- Mixed use town centre
- Employment
- Community / education / sports
- Residential areas
- Employment and housing
- Employment and commercial leisure
- Buildings for potential retention within development areas
- Existing built up areas
- Traffic management
- Public transport hub - connecting with local bus routes
- Dismantled railway safeguarded for potential future use
- Options for potential inner relief road
- Indicative proposed rail station location
- Indicative green loop town wide recreation routes
- Natural open space, parks and recreation areas
- SANG network
- Indicative locations for allotments
- Surface water management
- Natural water course
- Special Protection Areas & Special Areas of Conservation
- South Downs National Park boundary
- Settlement Policy Boundary (SPB)
- Extended SPB
- Mixed use (including local retail)

The settlement policy boundary on this map is not to scale and is indicative only

The masterplan identifies a **Transport Hub** which will offer high-quality transport interchange facilities. It will also act as a transport and community information centre, where residents can get up-to-date multi-modal transport information. The Hub will provide:

- State-of-the-art journey planning
- Information on travel links within and outside the town
- A centre for the Eco Car Club
- An Eco Cycle Hire Centre
- Cycle parking for intending public transport users
- Real-time passenger information on bus routes and rail connections

The Hub will be an iconic building in the heart of the town centre where all bus routes serving the town will stop, an example of transport and planning needs being considered together.

Development timescale

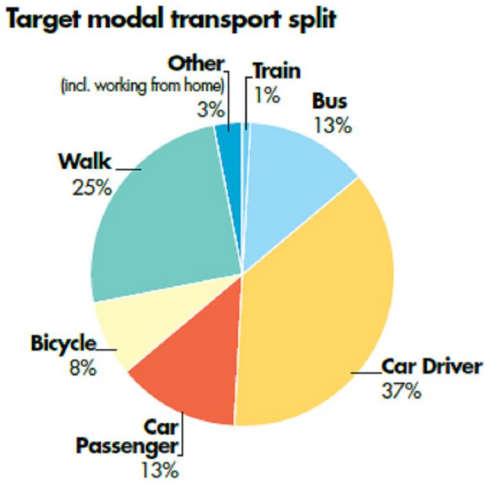
The MoD is due to leave Whitehill & Bordon by 2015. Prior to this, it is anticipated that 63 exemplar homes will be built on a series of sites, the largest being Quebec Barracks. There is also an opportunity to deliver new employment at Louisburg Barracks (approximately 150 jobs) and open space, although approximately 1,500 jobs will be lost with the departure of the MoD.

From 2016 onwards a rapid increase in the build rate is anticipated, peaking at 270 homes per annum in 2026 and 2027 although this may vary depending on market demand. Based on this build rate, the phasing periods and number of residential units is presented in the table below.

Phase	Period	Proposed new dwellings	Cumulative new dwellings
1	2013 – 2015	63	150
2	2015 – 2019	502	565
3	2019 – 2025	1355	1920
4	2025 – 2034	1983	3903

Target modal split

As the redevelopment of MoD land progresses, travel demand will significantly increase relative to the current situation which, if current car-dominated travel patterns are maintained, will have significant impacts on the local transport network and on carbon emissions[6]. Reducing the dominance of the private car by providing low carbon and sustainable forms of transport is crucial if these impacts are to be minimised.



The pie chart above illustrates the target modal split identified in the masterplan, which aims to enable at least 50% of all trips within the town to be made by non-car means. This target is challenging and requires a high quality public transport system if it is to be achieved. It can be seen from Chapter 2 that current public transport provision in the town falls some way short of this. The options developed to address this shortfall in public transport quality are presented in Chapter 4.

[6] Personal transport accounts for approximately 25% of a person's annual carbon footprint.

Chapter 4 – Developing the Public Transport Strategy

Overview

The Public Transport Strategy seeks to align with local and national policy, whilst identifying the measures required to deliver a 'step change' in public transport accessibility to cater for the increased travel demand associated with Whitehill & Bordon's regeneration.

Strategy development has been informed by three overarching themes, first outlined in the Emerging Transport Strategy:

- **Reducing the Need to Travel outside the town** – by providing appropriate employment and amenities within Whitehill & Bordon itself, many journeys to surrounding towns and service centres will be able to be substituted with more local journeys. Reducing both the number and length of trips will provide positive benefits to the operation of the local road network as well as to the environment.

- **Managing Car Demand within and outside the town** – the private car will play an important role in contributing to the long term vitality and viability of Whitehill & Bordon as a sub-regional centre. However, the negative impacts of car travel within the town will be managed through the construction of a new Inner Relief Road, reducing through traffic within the town centre, as well as a balanced car parking strategy. The latter will include a pricing framework to maximise the attractiveness of Whitehill & Bordon as a retail and leisure destination whilst encouraging the use of alternatives to driving alone, especially for those making longer visits.

- **Enabling Sustainable Transport for all trips** – the aim is to enable people to live within Whitehill & Bordon without having to own a car. Within the town the emphasis will be on providing a high quality public transport system as well as a comprehensive network of walking and cycling routes. The provision of safe and direct access to facilities and employment by non-car means will promote a shift away from the private car.

This chapter summarises the numerous public transport options which have been developed, appraised and sifted throughout the masterplan process.

Option Development and Sifting

Option development and sifting was an objective-led process based on the following as set out in the Emerging Transport Strategy of September 2011:

- Support sustainable economic regeneration and town growth
- Improve the environment by reducing congestion and the associated pollution
- 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
- Promote clean vehicle technologies to reduce carbon emissions

The regeneration of Whitehill & Bordon will significantly increase travel demand within, to and from the town. With the current low levels of public transport provision and pedestrian/cycle connectivity, such growth in travel demand would be unsustainable, would contradict the Emerging Transport Strategy objectives and have a potentially detrimental impact on the safety and operation of the local transport network.

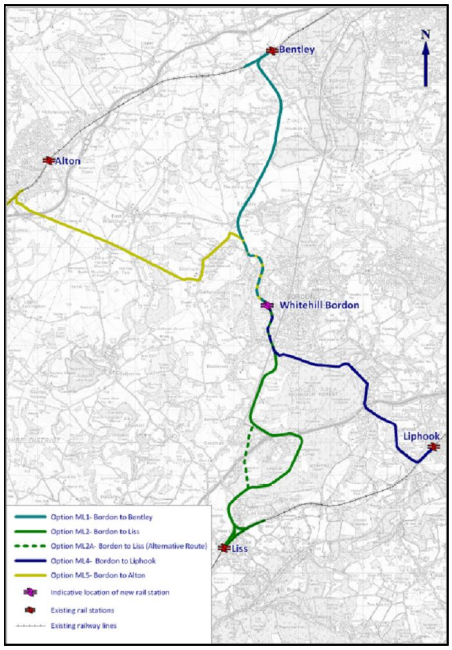
Accordingly a range of public transport options have been developed to address the weaknesses in current provision (set out in Chapter 2) and to support the objectives identified above. All of these assume the provision of a Transport Hub in the heart of the town centre which will offer high quality interchange facilities served by all routes. The options are summarised by mode (i.e. rail, bus rapid transit and bus) in the following sections.

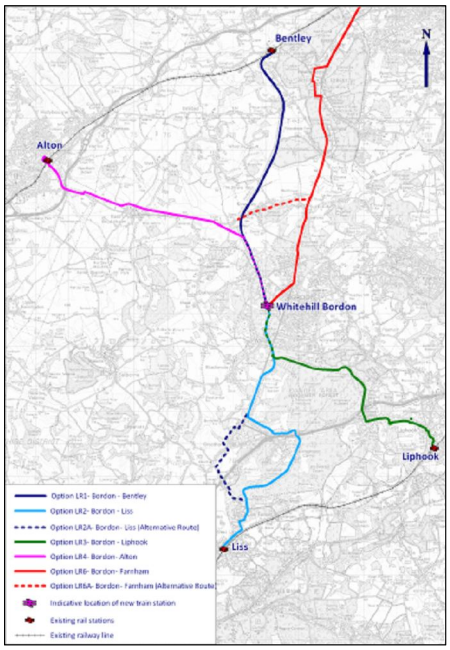
Heavy Rail Options

The potential re-introduction of direct rail services to Whitehill & Bordon in the longer term has been investigated in detail through two studies undertaken in accordance with Network Rail's Governance for Railway Investment Projects (GRIP) and the Department for Transport's appraisal guidance. The GRIP process is divided into eight distinct stages, with the feasibility of various options considered at Stage 2 and selected options taken forward for more detailed consideration at Stage 3.

GRIP 2 Study

The Option Selection Report (February 2010) represented Stage 2 of the GRIP process, investigating the feasibility of various heavy rail and light rail options to connect Whitehill & Bordon to both the Alton and Portsmouth heavy rail lines (shown below).





The GRIP 2 study (included as **Appendix B**) indicated that the best performing option was the heavy rail 'through-route' to Bentley, offering direct services to London Waterloo (assuming a 30 minute frequency). This option provides the least environmental impact, the best economic and financial case and would be deliverable in engineering and operational terms, subject to availability of funding. Assessed against the DfT criteria it was demonstrated that this option would deliver **'High'** value for money, providing principally for a heavy projected London demand for rail (some 75% of rail trips are forecast to travel to London).

However, assuming the build out of only 4,000 residential units (as now detailed in the masterplan, rather than the original 5,300) the Benefit to Cost ratio for this option dropped to 1.47:1, which suggests the scheme would provide '**Low**' value for money when considered against the DfT criteria[7].

By comparison, the provision of a heavy rail 'shuttle' service to Bentley, incurring the inconvenience of having to interchange with services from Alton to London Waterloo, generates a Benefit to Cost ratio of less than 1:1, suggesting the scheme would provide '**Poor**' value for money.

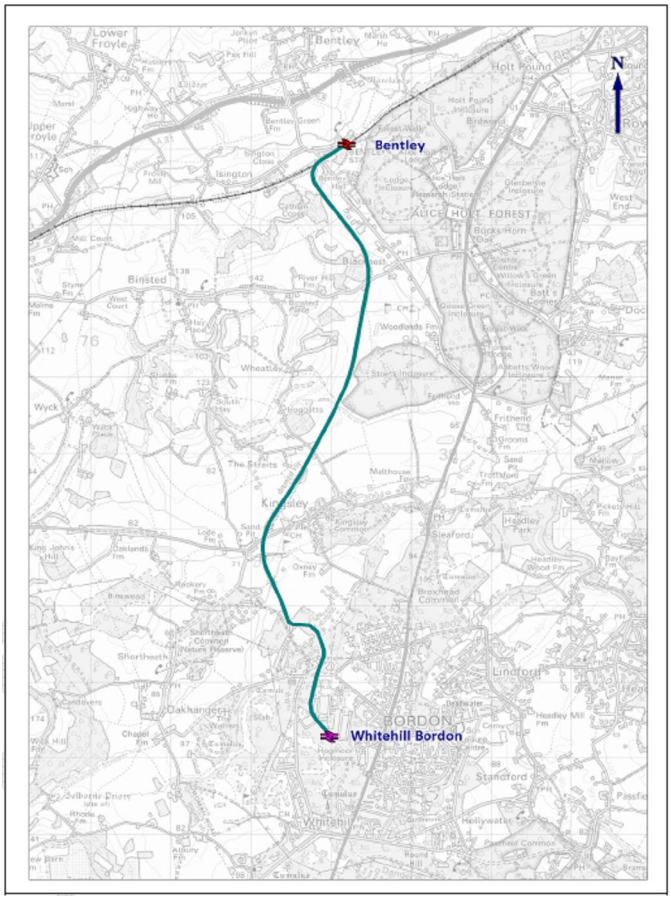
The routes to Liphook and Liss are significantly less attractive due to the lower levels of daytime off-peak service frequency at these stations together with the increased environmental constraints to the south east of Whitehill & Bordon, particularly the impact on Special Protection Areas as designated by the European Habitats Directive. For these reasons, these routeings were discounted.

Alignments to Alton may well be the most viable in terms of railway operations (creating the least impact on existing rail services) but the costs of delivering a rail line to Alton due to the topography are almost double that of connecting to the mainline railway at either Bentley, Liphook or Liss. This route would require construction of a tunnel of some 2.5km.

GRIP 3 Study

Following the conclusion of the GRIP 2 Rail Feasibility Study, further work was commissioned to study in greater detail the potential for a heavy rail connection to Bentley. The GRIP 3 Study (June 2012) assessed the operational constraints to inform the development of specific options to be taken forward into the business case. It also provided more detailed cost estimates and considered potential funding options for the project. The study is included as **Appendix C**.

[7] The build out of 5,300 residential units as originally envisaged in the GRIP 2 study generates a Benefit to Cost ratio of 2.14:1, based on an estimated capital construction cost of £129.6 million. This suggests the provision of through trains from Whitehill & Bordon would provide 'High' value for money when considered against the DfT criteria.



Through further study it was found that the South West Trains (SWT) network is very heavily utilised, with trains operating in the order of every 150 seconds approaching and leaving London Waterloo. To create new train paths that would enable Whitehill & Bordon services into Waterloo to be accommodated would require the recast of the entire SWT timetable, which would hold numerous implications for other trains of service groups entirely different from those operating via Alton and Bentley.

A timetable recasting exercise is a significant undertaking, which is normally associated with major changes to the network such as significant infrastructure upgrades, or rolling stock renewal. For example, the roll out of an entire new fleet of trains in recent years, with different operational and power consumption characteristics, necessitated the recast of the SWT timetable so that service timings could be adjusted to maximise the benefits of the new fleet. Prior to this the SWT area timetable had not been recast since the 1960s. Timetable recasting usually requires the deployment of significant resources from Network Rail, the train operating companies, freight operating companies and the Department for Transport to ensure the technical robustness of the services and that there is fair access to the network for all operators. Such an exercise can take several years to complete. Recasting the overall SWT timetable for a comparatively modest change, such as an extension to Whitehill & Bordon, is extremely unlikely to be acceptable to the organisations concerned, nor is it certain that the outcome would allow through trains to run the desired service from Whitehill & Bordon to London Waterloo. Furthermore the cost of the timetabling exercise and the impact on other services affected by the recasting would have to be accounted for in the business case, and would adversely affect the scheme economics.

Consequently, the GRIP 3 study used the current (2012) passenger timetable, including freight paths, as the base timetable. The extension or diversion of existing trains in the Woking, Ascot and Farnham areas was considered in order to provide a regular 'through' passenger service via Bentley to and from the new station at Whitehill & Bordon. This resulted in four options being identified:

- **Option 1: Alternating services to Alton and Whitehill & Bordon** – this option would divert every other half hourly scheduled Alton service to run to Whitehill & Bordon from Bentley. Although feasible operationally with minimal additional costs, Alton passengers would have to accept a reduced frequency service throughout the day;
- **Option 2: Splitting existing services to run to both Alton and Whitehill & Bordon** – this option would split westbound trains and join eastbound trains at Farnham, to provide a half hourly service to both towns. However, timetable planning rules stipulate that the joining and splitting of trains takes a minimum of four minutes each, resulting in a lack of train paths (space) for a number of trains due to single line and signalling constraints, and would also increase journey times for existing Alton passengers. Therefore this option is not operationally feasible;
- **Option 3: Amending the Ascot to Guildford service** – this option would divert the current service so that a half hourly service would operate from Whitehill & Bordon to Ascot as well as a separate half hourly service between Guildford and Aldershot. London-bound passengers would have the opportunity of interchanging at Farnham with one of the half hourly Alton to Waterloo services. Although operationally feasible, this option would require the hire of at least two more class 450 or compatible units so would be expensive to implement;
- **Option 4: Extending the Woking to Waterloo service to start at Whitehill & Bordon** – this option would extend the current half hourly service whilst ensuring that trains depart from Woking at the same time to maintain their existing paths to London Waterloo. However, it was found that platform availability at Woking renders this option operationally unfeasible without significant alterations to the current SWT timetable.

From the above summary it can be seen that only Options 1 and 3 can be delivered without a significant recast of the current SWT timetable being required, although Option 2 was also subject to demand forecasting and appraisal for the purposes of comparison with the GRIP 2 study.

Assuming that the new station opened in 2029, alongside the full build out of the 4,000 residential dwellings, Option 1 could potentially generate up to 780,000 trips per annum. However, only 62% of these trips represent 'new' trips, reflecting the loss of demand from Alton with the reduction in the frequency of trains to hourly as well as abstraction from other stations. With a revised capital construction cost estimate of £96.4 million[8] (excluding optimism bias), this generates a Benefit to Cost ratio of 1.20:1, which suggests that this option would provide '**Low**' value for money when considered against the DfT criteria.

[8] The revised cost estimate reflects savings made through the installation of single (not double) track, reduced structural costs at interfaces with roads and footpaths, together with a more cost effective signalling system involving minimal lineside infrastructure.

Option 3 could potentially generate up to 680,000 trips per annum with the provision of a half-hourly service to Ascot, 72% of these being 'new' trips. This option generates a Benefit to Cost ratio of 0.56:1, which suggests that this option would provide '**Poor**' value for money.

If a direct half-hourly service to London was deliverable in the future, Option 2 could potentially generate just over 1 million trips per annum, although 25% of these would be abstracted from the wider rail network. This option generates a Benefit to Cost ratio of 1.41:1, which suggests that this option would provide '**Low**' value for money. However, it should be stressed that the costs associated with recasting the SWT timetable have not been accounted for at this time.

Subsequent to the GRIP 3 study, consideration was given to the impact on the business case of providing a half-hourly diesel shuttle to Bentley to link with Alton to Waterloo services. The assessment is included as **Appendix D.**

With a revised capital cost estimate of £90.3 million (single track line), the costs of electrification would be saved, but this would be partially offset by the requirement for depot facilities to house two trains and undertake refuelling and light maintenance, impacting on operating costs. This results in a Benefit to Cost ratio of 0.80:1, suggesting that this option would provide '**Poor**' value for money.

Funding for Heavy Rail Options

Securing public funding for any of the above options would be challenging at present considering the limited availability of public funding combined with competition from alternative schemes which are classed as 'High' and 'Very High' value for money.

Developers would be likely to benefit significantly from the Whitehill & Bordon rail link and so contributions (including section 106 and the Community Infrastructure Levy) could be secured from them. However, the level of contribution which is achievable with 4,000 new residential dwellings would be insufficient to cover the infrastructure costs of the scheme. It is possible that developer contributions could act as leverage to encourage other funders, but the additional franchise revenue generated would not exceed the additional capital and operating costs. **Ongoing revenue support** from the DfT is likely to be required, which would restrict alternative funding mechanisms such as prudential borrowing as there is not an income stream sufficient to repay the debt.

The future South Western rail franchise agreement offers another potential funding option. However, securing the inclusion of new infrastructure within the franchise depends on a positive economic case being demonstrated. The two deliverable options (Options 1 and 3) currently show a Benefit to Cost ratio of less than 2, which makes it difficult to argue the case for inclusion of the Whitehill & Bordon rail link in the future South Western rail franchise in value for money terms.

Conclusions for Heavy Rail

Based on the findings of the GRIP 2 and 3 studies summarised above, **it is considered unlikely that the reintroduction of heavy rail services from Whitehill & Bordon will be possible during the period covered by the masterplan, i.e. to 2036**. This strategy will therefore focus on the delivery of improved accessibility to existing rail stations in the local area, through improved connectivity by a variety of travel modes, together with better facilities at rail stations. The recommended measures are presented in Chapter 5.

However, the regeneration of Whitehill & Bordon is a long term project that is in the early stages of delivery. It is possible that circumstances may change over the life of the project and as such it is considered sensible to safeguard the land necessary to deliver a future rail connection north to Bentley, as well as safeguarding land for the delivery of a well connected, conveniently located rail station within the town. This would ensure that future opportunities will not be missed. The possible rail route will remain indicative and non-material in the context of Town and County Planning Act considerations.

Light Rail Options

The GRIP 2 study also considered light rail options for the same route corridors as for the heavy rail assessment. There are some capital cost savings (cost estimate £104.7m for the route to Bentley) compared with heavy rail. However, due to slower vehicle speeds, light rail options generate a much lower level of demand than heavy rail.

The best performing option (i.e. that to Bentley), generates a Benefit to Cost ratio of 0.2, which suggests '**Poor**' value for money. This can be attributed to longer journey times, the requirement to interchange with heavy rail services at Bentley, relatively high infrastructure costs in relation to demand and the need to acquire and maintain a fleet of bespoke vehicles.

Ultra Light Rail Options

Subsequent to the GRIP 3 study, consideration was given to the impact on the business case of providing a half-hourly Ultra Light Rail (ULR) shuttle to Bentley to link with Alton to Waterloo services (assessment included as **Appendix D**). This assumes use of the Parry People Mover (PPM), as this forms the only operational ULR system in the UK and so provides the most relevant benchmark to consider in the context of delivering future ULR services in the UK.

Capital costs for a ULR service are estimated at £69.7m, assuming that highway crossings will be made at-grade and that no new signalling is required as the ULR will be fully segregated from the heavy rail network. However, these cost savings are partially offset by the need for barriers or conventional highway signals, the requirement for depot facilities and a new platform at Bentley.

A ULR scheme offers possible benefits in terms of increased penetration to Whitehill & Bordon as units could potentially operate a loop around the town. This suggests that the demand generated could be greater than that for light rail (but still lower than heavy rail). However, existing PPM vehicles operate at a maximum of 40mph which results in longer journey times than other rail-based options. Two units would be required to operate a half hourly service. Moreover, passengers would need to interchange at Bentley, from a platform which is further away from the existing heavy rail service. The ULR scheme generates a Benefit to Cost ratio of 0.75:1, which suggests '**Poor**' value for money.

Bus Rapid Transit Options

The GRIP 2 study also considered Bus Rapid Transit (BRT) based options to support the Emerging Transport Strategy objectives. The study assumed the levels of bus service provision as outlined in the Emerging Transport Strategy but, as an enhancement to these services, considered the scope for extensive segregation measures including construction beyond the existing highway boundary. The measures included contraflow bus lanes, bus only sections, bus gates and bus lanes delimited by raised kerbs prohibiting access for other users. Demand forecasts, cost estimates and economic appraisals were undertaken for BRT-based solutions along the identified heavy rail corridors.

A large proportion of the civil engineering costs will be incurred for a bus-based system as well as rail. At £76.7m for the route to Bentley (the best performing option), estimated capital costs are lower than for light rail due largely to lower vehicle costs and economies of scale (particularly if a local bus operator was involved). A BRT system would also allow flexible routeing (i.e. multiple access/egress points) to reroute for any changes in likely future demand. The estimated bus operating cost for a 30 minute daytime frequency on this corridor was £203,000 per annum.

Demand forecasts for the year 2030 when the town is fully built out[9] indicated that the best performing option was the Whitehill & Bordon to Bentley BRT shuttle, generating up to 370,000 trips per annum. This is significantly lower than the forecast heavy rail patronage and reflects the higher journey times and lower vehicle speeds associated with bus travel. This option generates a Benefit to Cost ratio of 0.23:1, which suggests that this option would provide '**Poor**' value for money.

The infrastructure costs are high and the low level of demand highlights the fact that the village of Bentley has minimal destination significance and is primarily an interchange location. For those with destinations in Farnham, Aldershot or Farnborough (of much greater destination significance than Bentley), the overall journey time offered by using BRT may be inferior to using an on-street fully flexible sub-regional bus service. Moreover, some of the patronage that any BRT system could generate would be abstracted from sub-regional bus services within the catchment area, which would jeopardise their ability to operate on a commercial basis in the longer term.

[9] Assumes 5,300 residential units (extended Masterplan)

The other BRT corridors reviewed, i.e. to Liss and Liphook, are significantly less attractive than that to Bentley for the same reasons as the heavy rail route options. Consequently this strategy will focus on bus-based solutions which share the existing highway infrastructure.

Park & Ride Options

The feasibility of providing park and ride facilities for Whitehill & Bordon was considered, but for it to be viable it needs to be the only 'real' parking option for car drivers with destinations in Whitehill & Bordon. This would imply a level of parking charge and restriction on the availability of town centre spaces which would adversely affect its regeneration, making it difficult for Whitehill & Bordon to compete for inward investment and jobs against other local centres where such a restriction would not exist.

Therefore the overall transport strategy will be to adopt a parking management regime which manages the worst effects of the car whilst encouraging the use of more sustainable modes wherever possible.

Bus Options

The bus service proposals in the Whitehill & Bordon Transport Strategy (March 2010) and the Whitehill & Bordon Proposed Sub-Regional Bus Strategy (March 2010) involved the implementation of a three-tier bus strategy. Although it is considered that the area coverage suggested in these earlier strategies remains appropriate, the service characteristics (i.e. frequency and vehicle type) have been reviewed in the context of the reduction in residential units from 5,300 to 4,000. It is essential to ensure that bus services can achieve a robust patronage base, providing value for money for the revenue support which will be required in the early years of their operation and maximising their potential to operate on a commercial basis in the longer term.

As such the suggested revisions to the three-tier bus strategy are summarised below:

- **Town** – a circular bus service operating every 10-15 minutes between residential areas and the facilities of Whitehill & Bordon and Lindford was previously suggested. In the early stages of Whitehill & Bordon's regeneration an hourly frequency is considered more realistic, but it is recommended that the feasibility of delivering frequency improvements (to every 30 minutes or better) is subject to ongoing review as residential/employment development progresses;

- **Local** – a series of bus services linking Whitehill & Bordon with surrounding villages such as Greatham, Selborne, West Worldham, Headley and Standford was previously suggested, combining demand-responsive services with conventional bus and minibus provision, operating every 20-30 minutes. However, some of the identified local bus routes were found to be unsuitable for high frequency bus operation due to the narrowness of local roads, the proximity of environmentally sensitive areas and the lack of patronage opportunities. Moreover, many of the settlements will already be served by sub-regional bus services, providing a combined frequency of 15 to 30 minutes. It is recommended that settlements away from the main transport corridors should be served by demand-responsive provision, connecting to the wider public transport network as well as to key destinations in Whitehill & Bordon (e.g. shopping, healthcare and education); and

- **Sub-regional** – new and improved links to connect Whitehill & Bordon with regional centres of commerce and retail, including the Blackwater Valley, Basingstoke and Guildford were previously suggested, operating every 20-30 minutes. For new limited-stop express routes an hourly frequency is considered more realistic, but with proven employment destinations (i.e. Farnborough) served by half-hourly buses. This would result in combined frequencies along sub-regional bus corridors which vary between a maximum of 15 minutes to a minimum of every 60 minutes.

The recommended bus strategy measures are presented in Chapter 5.

Conclusions

The Public Transport Strategy seeks to provide an attractive alternative to the private car and make it a real possibility to live in Whitehill & Bordon without having to own a car.

It is considered unlikely under the present circumstances that the reintroduction of rail services in any form (be it heavy, light or ultra light rail) from Whitehill & Bordon will be possible during the period covered by the masterplan, i.e. to 2036. Therefore the strategy will focus on delivering major improvements in bus service frequencies and route coverage, providing interchange with rail services which is as seamless as possible. This will require realistic and, in the longer term, commercially viable bus services which can be funded without compromising the economic viability of the Whitehill & Bordon project itself.

As such the focus of the Public Transport Strategy is on providing high quality bus routes to cater for movement between homes, employment and recreational destinations. These service measures will be complemented by improvements to local infrastructure, in particular public transport interchanges and bus priority measures. The actual measures and their phasing are presented in Chapter 5 based on the three-tier approach (town, local and sub-regional) outlined above.

Chapter 5 – Recommended Public Transport Package

Overview

After analysis of the challenges and opportunities for public transport, reviewing the updated masterplan and developing and sifting various potential options to achieve the transport objectives for Whitehill & Bordon, a number of options were retained and taken forward for refinement and inclusion in a package of public transport interventions. The recommended package seeks to achieve a balance between new and improved public transport services and investment in supporting measures such as improved infrastructure and information/marketing, with the aim of achieving significant future growth in public transport usage.

It is intended that the various package elements will be introduced in phases as the Whitehill & Bordon development progresses. Three main phases are proposed as follows, broadly consistent with the masterplan phases indicated in Chapter 3:

- **Phase 1 (2013 to 2015)** – approximately 60 homes will be built during this phase, prior to the withdrawal of the MoD. The focus will be on maintaining the existing sub-regional bus network whilst improving public transport accessibility through upgraded bus waiting facilities and the introduction of a new town bus service.

- **Phase 2/3 (2015 to 2025)** – approximately 1,850 homes will be built during these two masterplan phases. Existing sub-regional bus routes operating in the vicinity of Whitehill & Bordon will be amended/extended to penetrate the development, improve connectivity with rail services and facilitate public transport access to and from settlements to the south of the town.

- **Phase 4 (2025 to 2036)** – approximately 2,000 homes will be built during this phase. New limited stop sub-regional bus routes will be introduced to provide direct services from Whitehill & Bordon to key employment destinations which are currently not provided, as well as improving overall frequencies on the sub-regional bus corridors.

The recommended package of public transport services is presented below, sub-divided by sub-regional, local and town level. Consideration is given to supporting measures in Chapter 6.

New and Improved Public Transport Services

Sub-Regional Bus Services

At the sub-regional level, the focus of the strategy is on achieving a 'step change' in the quality and coverage of sub-regional bus routes serving Whitehill & Bordon. The aim is to provide a minimum hourly daytime bus frequency to neighbouring towns, with key destinations such as Alton and the Blackwater Valley being served by a combined daytime bus frequency of 15 to 20 minutes. Additional early morning and late evening bus journeys will be provided and the provision of Sunday services will be extended.

It is envisaged that these services will be operated by conventional diesel buses, achieving Euro VI emissions standards or better. At this time there is not considered to be a viable

alternative fuel option to environmentally efficient diesel buses, but significant advances in technology expected over the coming years will allow alternative fuels to be a commercial proposition during later phases. Single deck buses (typical capacity 49 seats) are considered most appropriate, providing flexibility to cater for peaks in travel demand. The table below shows the proposed phasing of sub-regional bus service improvements.

Phase	Sub-Regional Bus Service Measure
Phase 1 (2013 to 2015)	• Seek to maintain existing sub-regional bus network coverage and frequencies (subject to availability of financial support for non-commercially operated services)
Phase 2/3 (2015 to 2025)	• Amended Service 13 – introduce 30 minute daytime frequency between Alton (rail station) and Liphook (rail station) via Whitehill & Bordon. Withdraw the route extension to Basingstoke due to limited intermediate patronage opportunities north of Alton. • Amended Service 18 – introduce 30 minute daytime frequency between Whitehill & Bordon, Lindford and Haslemere (rail station). 30 minute daytime frequency to Farnham and Aldershot unchanged. • Amended Service 37/38 – operate from Greatham to Whitehill & Bordon (diverted from Alton). Provide hourly daytime frequency between Whitehill & Bordon, Liss (rail station), Petersfield (rail station) and Havant.
Phase 4 (2025 to 2036)	• New limited stop X50 – introduce hourly daytime frequency express service between Whitehill & Bordon, Farnham, Royal Surrey Hospital and Guildford[10]. • New limited stop X51 – introduce 30 minute daytime frequency express service between Whitehill & Bordon, Farnham (rail station), Aldershot (rail station) and key employment areas in Farnborough (e.g. Cody Technology Park). • New limited stop Service X52 – introduce hourly daytime frequency express service between Whitehill & Bordon, Alton (rail station), Basingstoke (rail station) and the key employment area of Chineham. Provides combined 20 minute daytime frequency between Alton and Whitehill & Bordon. • New limited stop X53 – introduce hourly daytime frequency express service between Whitehill & Bordon, Liss (rail station) and Petersfield (rail station). Provides combined 30 minute daytime frequency between Whitehill & Bordon and Petersfield.

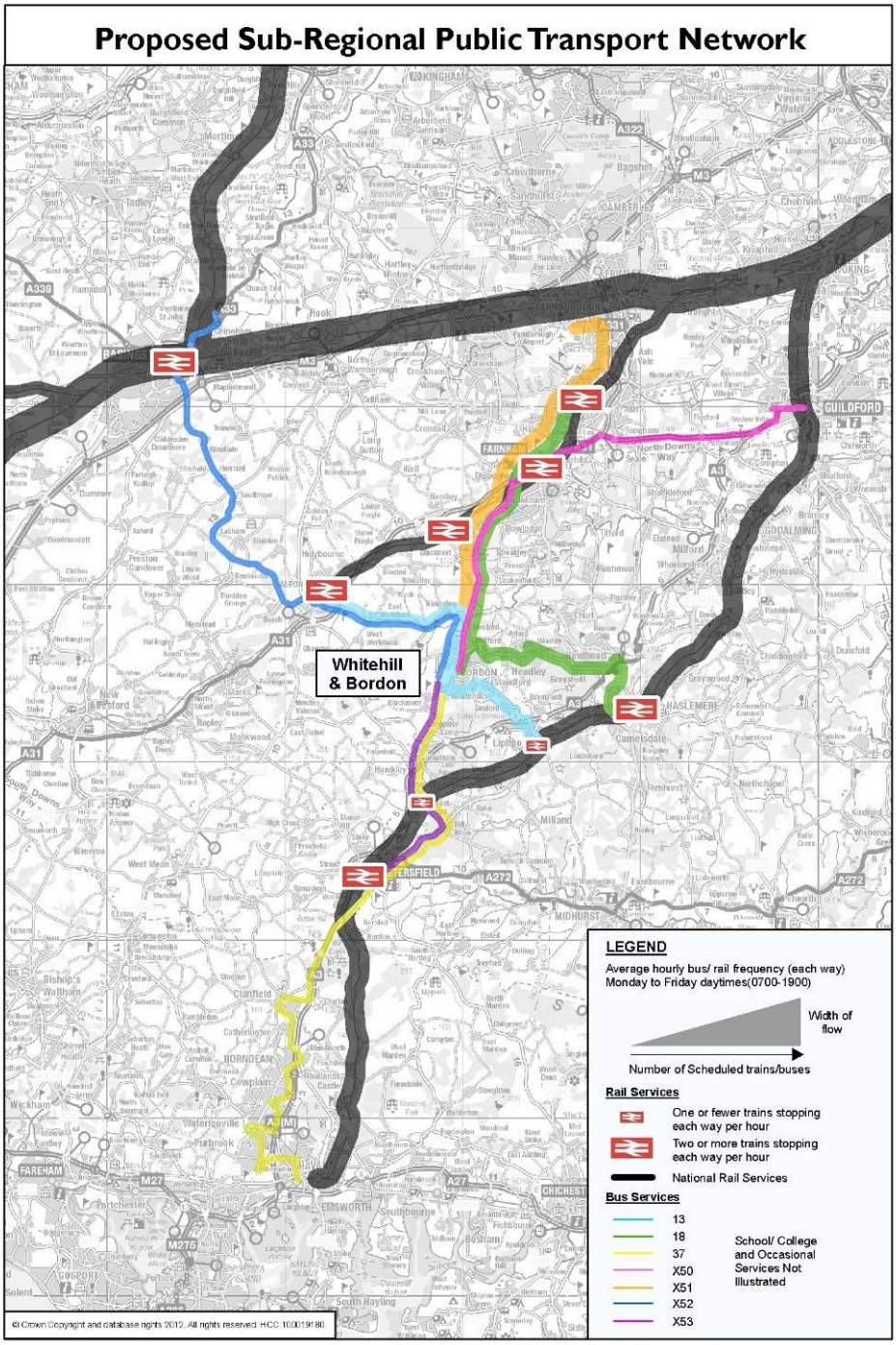
The proposed service characteristics for the sub-regional routes to be introduced in Phases 2 and 3 are shown below.

Service	13 – Alton to Liphook	18 – Aldershot to Haslemere	37/38 – Whitehill & Bordon to Havant
Round journey time (mins)	100	197	215
Layover time (mins)	20	13	25
Mon to Sat operating hours	0600-2300	0500-2300	0600-2300
Mon to Sat daytime frequency (mins)	30	30	60
Sunday operating hours	0700-2200	0700-2200	0700-2200
Sunday frequency (mins)	60	60	120

The equivalent characteristics for the sub-regional routes to be introduced in Phase 4 are shown in the table below.

[10] The draft strategy proposed a route to Guildford via Liphook and Hindhead. However, a route via Farnham and the A31/A3 to Guildford would have only a slightly longer journey time (and similar operating cost if the allocated layover time is sufficient to maintain service reliability). This route is considered by the main local bus operator to have better long term commercial potential as it would serve multiple travel markets. Furthermore, the Royal Surrey Hospital was identified during the public consultation as a key destination not served from Whitehill & Bordon, which could provide significant additional patronage for a moderate diversion.

Service	X50 – Whitehill & Bordon to Guildford	X51 – Whitehill & Bordon to Farnborough	X52 – Whitehill & Bordon to Basingstoke	X53 – Whitehill & Bordon to Petersfield
Round journey time (mins)	112	129	118	83
Layover time (mins)	8	21	62	37
Mon to Sat operating hours	0600-2300	0500-2300	0600-2300	0600-2300
Mon to Sat daytime frequency (mins)	60	30	60	60
Sunday operating hours	No service	No service	No service	No service
Sunday frequency (mins)	No service	No service	No service	No service



The above diagram illustrates geographically the proposed frequency and coverage of all sub-regional bus services in Phase 4. It is clear that improvements to sub-regional bus services will also help to maximise the connectivity of the town with local rail stations. Once the Whitehill & Bordon development is fully built out, under the proposed strategy it is envisaged that a 10 minute daytime bus frequency will be provided to Farnham, 15 minutes to Aldershot, 20 minutes to Alton and 30 minutes to Liphook, Haslemere and Petersfield.

Although it is unlikely that the reintroduction of rail services to Whitehill & Bordon will be possible during the period covered by this strategy, the rail corridor to Bentley will be protected from development to enable its future use as a rail link. The feasibility of improving facilities at existing rail stations, such as car and cycle parking, will be investigated during Phase 2 of the strategy through the promotion of Station Travel Plans for selected stations, likely to comprise Alton, Bentley and Liphook. The general aim of a Station Travel Plan is to improve accessibility and manage local road traffic movements. The plans will be developed in partnership with key stakeholders such as South West Trains (and future South Western franchise holders) and Network Rail as well as local businesses and interest groups.

Local Bus Services

The focus of the strategy at the local level is to complement the substantially improved frequency and coverage of sub-regional bus services as outlined in the previous section. The need for sub-regional services to achieve journey times which are as competitive as possible with the private car means that key transport corridors must be followed. This will unavoidably leave gaps in route coverage which means that some smaller rural communities surrounding Whitehill & Bordon will not be directly linked to the sub-regional services. These locations include West Worldham, Selborne, Oakhanger to the west and Headley Down, Arford and Passfield to the east.

Where local residents are not adequately catered for by conventional scheduled bus services, it may be possible to offer a community based (i.e. demand responsive) solution to their travel needs. Further work will need to be undertaken to define exactly which transport needs would remain unmet before confirming the most appropriate solution. However, any solution is likely to include some or all of the following elements:

- a return shopper service operating on one or more days a week, potentially as an extension of the existing Grayshott and Bordon Call & Go service;

- the establishment of a new voluntary car scheme covering the area, or alternatively the existing group (Whitehill & Bordon) could be encouraged to expand their services. However, the availability of volunteer drivers may be an issue; and

- the Wheels to Work scheme could be extended to cater for those seeking employment, particularly young people.

The proposed phasing of local bus services is shown in the table below.

Phase	Local Bus Service Measure
Phase 1 (2013 to 2015)	• Seek to maintain existing Grayshott and Bordon Call & Go (subject to available funding)
Phase 2/3 (2015 to 2025)	• Extend existing demand responsive services to cover villages to the west of Whitehill & Bordon, e.g. Selborne and Oakhanger, on alternating days. Potentially as extension to existing Call & Go service or as new/extended voluntary car scheme.
Phase 4 (2025 to 2036)	• Examine feasibility of introducing scheduled stops whilst maintaining pre-booking facility.

Town Bus Services

At the town level, the focus of the strategy is on improving bus service penetration of Whitehill & Bordon, via the introduction of a new town service which complements the improved sub-regional bus services without adversely affecting their ability to be operated on a commercial basis in the longer term. Overall, the aim is to provide at least a 15 minute daytime frequency within the town (through a combination of the sub-regional and town services) when the development is fully built-out. This represents a frequency at which intending bus users can "turn up and go" without reference to a bus timetable, providing an attractive service between residential areas and the town's facilities, providing better access to jobs, leisure, education and retail facilities than at the present time and making it a very real proposition to live in Whitehill & Bordon without a car.

A new dedicated bus service for Whitehill & Bordon will be introduced in Spring 2013 which will mark the start of the town based public transport improvements. It will operate an eastern loop via the A325 High Street, Lindford, Standford, Whitehill and the Forest Centre and a western loop via the A325 High Street, Station Road, Hogmoor Road, Firgrove Road and the Forest Centre. On selected loops buses will operate a southwards extension to Greatham to provide connections to the existing sub-regional bus service 38 to Petersfield via Liss (five buses per day), also providing access for residents of Greatham and Liss who wish to travel to Whitehill & Bordon. Overall, it is anticipated that all areas of the town will be provided with approximately one bus to the town centre every 90 minutes. It is envisaged that this service will be operated initially by a fully accessible minibus (up to 22 seats), achieving Euro VI emissions standards, although alternatively fuelled options (e.g. diesel/electric hybrid or hydrogen fuel cell) may well become a financially and technically viable proposition in the medium to long term.

The specific routeing and frequency of the town bus service will be subject to change as the regeneration of Whitehill & Bordon progresses and as demand levels become established. The proposed phasing of town bus services is shown in the table below.

Phase	Town Bus Service Measure
Phase 1 (2013 to 2015)	• New Town Service – introduce 90 minute daytime frequency from residential areas (including Lindford) into town centre. Greatham extension to connect with sub-regional service 37/38 (five buses per day) to Liss, Petersfield and Havant. • Bordon Link to be withdrawn (replaced by new Town Service). • Seek to maintain existing Whitehill & Bordon Voluntary Car Service (subject to available funding/volunteers)
Phase 2/3 (2015 to 2025)	• Town Service – withdraw Greatham extension (to be served by extended service 37/38). Lower round journey time to allow provision of hourly frequency from residential areas into town centre.
Phase 4 (2025 to 2036)	• Enhanced Town Service – procure additional vehicle to introduce 30 minute daytime frequency (not including sub-regional services) from residential areas into town centre.

The service characteristics for the proposed local bus services are shown in the table below.

Service	Phase 1	Phase 2/3	Phase 4
	Town Service with Greatham Connection	**Town Service**	**Enhanced Town Service**
Journey time full circuit (mins)	75	50	50
Layover time (mins)	15	10	10
Mon to Sat operating hours	0900-1800	0900-1800	0700-2100
Mon to Sat daytime frequency (mins)	90	60	30
Sunday operating hours	No service	No service	0800-2000
Sunday frequency (mins)	No service	No service	60

Summary

This chapter has set out a package of recommended interventions which focus on the delivery of a number of high quality bus services to cater for movement between homes, employment and recreational destinations, also improving accessibility to existing rail stations in the local area. The bus services will be implemented at three levels:

- **Town** – the provision of a circular town service, hourly in the early stages of Whitehill & Bordon's regeneration but with the feasibility of delivering frequency improvements (to every 30 minutes or better) under ongoing review as residential/employment development progresses;

- **Local** – along the main transport corridors linking Whitehill & Bordon with nearby towns, local villages will be served by conventional scheduled bus services providing a combined frequency ranging between every 15 to 30 minutes when the development is fully built out. Settlements away from the main transport corridors will be served by demand-responsive provision, connecting to the wider public transport network as well as to key destinations in Whitehill & Bordon (e.g. shopping, healthcare and education); and

- **Sub-regional** – new and improved links will connect Whitehill & Bordon with major regional employment and shopping centres, including the Blackwater Valley, Basingstoke and Guildford, providing a combined frequency ranging from a maximum of every 15 minutes to a minimum of every 60 minutes when the development is fully built out. Many of these services will operate on an express limited stop basis, providing journey times competitive with the private car.

The above proposals are considered realistic, affordable and deliverable. The sub-regional bus service proposals are considered to have longer term commercial potential. However, they should be introduced on a trial basis and patronage monitored. If a sustainable patronage base is not achieved over a defined period, revenue support should be reallocated to other better performing routes, or to other entirely new routes not identified in this Public Transport Strategy, as it is possible that during the period of the masterplan to 2036 entirely new travel markets and destinations may arise. The bus network must have the flexibility to adapt to these new markets and destinations and so best cater for the travel needs of residents of Whitehill & Bordon and the surrounding area.

The proposed routes will also need to be delivered alongside a range of supporting measures, which are outlined in Chapter 6.

Chapter 6 – Supporting Measures

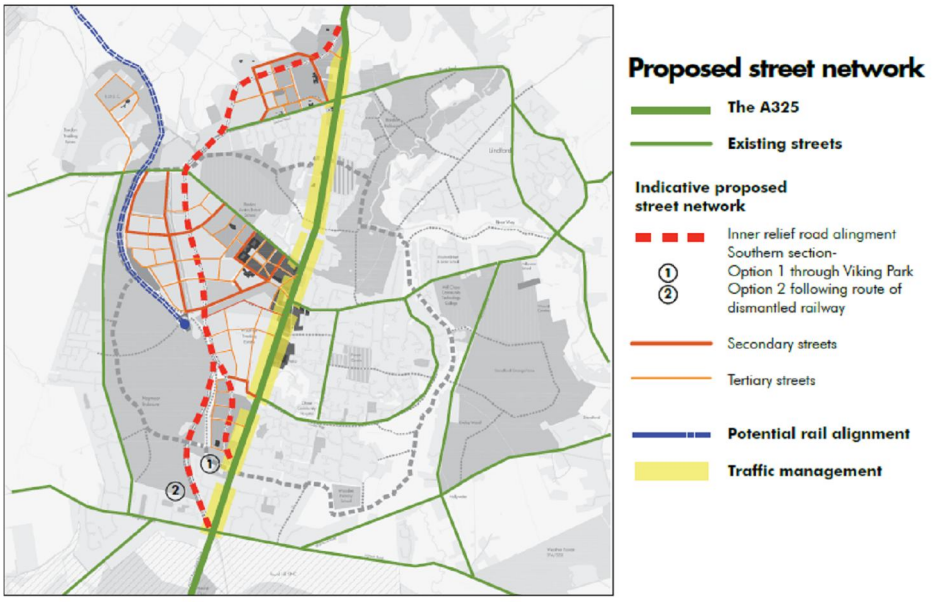
Improved Bus Stops

To support the service enhancements during Phase 1 of the strategy, significant investment is being made into local bus stop infrastructure, with 11 new shelters being procured by Whitehill Town Council during autumn 2012. Nine of these shelters will be at bus stops along the A325, with the remaining two to be placed by the Forest Shopping Centre. In addition six of the existing shelters that are to be replaced are to be repositioned at sites on Conde Way/Hollybrook Park/Chalet Hill. Some new kerbing and litter bins may also be installed subject to funding availability.

The **Transport Hub** will be constructed at an early stage of the town's regeneration. As development progresses, further new bus stops will be installed to maximise public transport penetration of the new residential and employment areas.

A Hierarchy of Urban Streets

Within Whitehill & Bordon a new permeable network of inter-connecting streets connecting with existing streets within the town will be designed to create a hierarchy where different street types serve different functions. New streets will be constructed at the earliest possible stage of development to allow good bus service penetration into the residential and employment areas and encouraging public transport use from the outset. Adopting the principles of the 'Manual for Streets', some streets will be focused on free-flow traffic movement but others will be more focused on creating a 'sense of place' where clear advantage is given to walking, cycling and public transport in preference to the car.



An **inner relief road** will be constructed to the west of the town centre, running through the new development areas from Whitehill in the south and re-joining the existing A325 to the north of the Station Road/Liphook Road/A325 junction. This will act as the key distributor of road traffic within the town, offering an alternative route to the existing A325 for through-traffic and removing non-local traffic from the town centre to relieve existing junction congestion issues. However, facilities for pedestrians, cyclists and public transport will also be provided along the inner relief road to maximise the permeability of the new development areas, minimise access distances to bus stops and so encourage use of non-car modes.

Delivery of the inner relief road will allow significant improvements to the current A325 High Street, facilitating its use as a key **public transport artery** for town, local and sub-regional bus services alike. Traffic management will be introduced to reduce vehicle speeds, making the current A325 a less attractive route for through-traffic. The intention will be to give clear advantage in time and convenience to non-car modes. With respect to public transport, the feasibility of bus gates on secondary streets radiating from the A325 High Street will be investigated, to give buses direct access to the town centre from adjacent residential areas, discouraging private car use for such short journeys and improving conditions for pedestrians and cyclists.

Improvements to the Local Highway Network

Although the focus of the Emerging Transport Strategy is on providing high quality, affordable and deliverable alternatives to the private car, it is nevertheless the case that the car will continue to play an important role in providing for the transport needs of Whitehill & Bordon residents, employees and visitors. As such there will be increases in traffic flow at key junctions on the local highway network as a result of Whitehill & Bordon's regeneration. The greatest increases will occur at the junctions on the A325 to the north and south of the proposed Inner Relief Road, although the traffic flow impacts of the development will be spread over a larger area.

The Transport Assessment (2012) identified that some existing junctions on the local transport network would operate at near to or over full capacity during peak periods in the future when the development is fully built out. Potential improvement schemes have been identified at 13 junctions on the local highway network. These include improvements to roundabouts and priority junctions, where reduced congestion will deliver journey time benefits for buses and other motorised traffic alike. However, other improvements include upgrades to existing traffic signal junctions as well as replacing existing junctions with traffic signals. Consideration will be given to including Selective Vehicle Detection (SVD) within these works, to provide priority to buses approaching traffic signals. Potential junctions include:

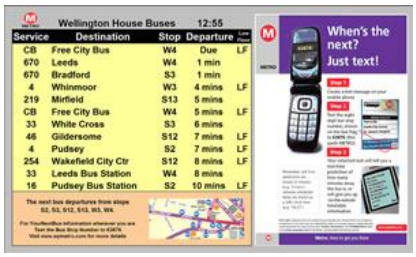
- A325/School Hill (subject to liaison with Surrey County Council)
- A325/B3004

- A325/Tesco Access/Woolmer Way
- B3004/Oakhanger Road

Information/Marketing

Previous sections have outlined the proposed physical improvements to public transport, in terms of bus services, bus stop infrastructure, bus priority measures and improved rail station facilities. However, if the ambitious and challenging modal split targets for public transport are to be achieved in the longer term, it is essential that these physical improvements are supported by the provision of high-quality travel information and intensive marketing and promotion. Measures will include:

- **Real time information to smart phones** – a smart phone app will be delivered enabling bus users to obtain information on routes, times, fares and locations of stops in a holistic journey approach. Near Field Communication (NFC) tags will be installed at core bus stops to provide timetable information in real time to smart phones.



- **Real time information to workplaces** – tailored packages will be provided to key employers, consisting of real time information, a map and an appropriate message for a selected cluster of bus stops in the vicinity of the premises. It is envisaged that this information would be available to staff via a company Intranet link.

- **Real time information at bus stops** – consideration will also be given to the provision of fixed display screens at selected bus stops. Use of TFT-type screens would allow both travel and community information to be displayed, and these could potentially be solar powered.
- **Printed travel information** – complementing electronic real time information to smart phones and workplaces, bus stops will be provided with display cases to feature route maps and timetable information. Leaflets/booklets will be made available at a travel information kiosk within the town centre Transport Hub, as well as within shopping centres, libraries, leisure centres and other amenities.
- **Branded web site** – new travel information pages on the town website www.whitehillbordon.com will be developed, initially as a marketing tool for prospective new residents but later on as a more comprehensive source of travel information as implementation of the transport strategy measures is substantially progressed.
- **Bus route branding** – to help improve the image of bus travel locally, in partnership with public transport operators branding concepts for individual services or groups of services will be developed, with the branding to be employed across vehicles, bus stop flags and electronic/printed travel information.

- **Free public transport tickets** – as part of new residents' welcome packs, taster tickets could be offered. 12 journey carnet tickets could be offered for occasional bus users.

- **Smart ticketing** – a rechargeable ITSO compliant smart card will be introduced as an alternative to paper tickets, reducing bus boarding times and making interchange between services easier for passengers . This will be similar to "the key", an integrated smart card for bus/ferry services which is currently being implemented within South Hampshire. The same technology is also being piloted on Southern rail services. As technology develops during the lifetime of the public transport strategy, it is envisaged that the Whitehill & Bordon smart card will be available for bus services, rail services, car clubs and cycle hire alike, enabling seamless integration between modes.

- **Wi-Fi enabled bus fleet** – Wi-Fi terminals will be fitted to new vehicles joining the sub-regional bus fleet from Phase 2 onwards, funded in partnership with operators. Wi-Fi is a growing addition to bus services across the UK, being available on Trent Barton and Reading Buses for example as well as, more locally, Stagecoach South Route 1 in the Blackwater Valley. In addition Wi-Fi is currently being delivered in the South Hampshire bus fleet. It will provide an opportunity for those with laptops and smartphones to access the internet free and make better use of their travel time, improving productivity.

- **Next stop audio visual announcements** – Next Stop displays and announcement systems will be fitted to new vehicles joining the town and sub-regional bus fleet from Phase 2 onwards, funded in partnership with operators. Providing clear and audible reinforcements of the next stop has been demonstrated to be beneficial for infrequent bus users, those with mobility difficulties, the blind, visually impaired and those that are hard of hearing.

Other Transport Strategies

The Public Transport Strategy forms one element of a suite of transport strategies which fit together to form a complementary package of transport measures intended to provide high quality, affordable and deliverable alternatives to the private car. Achievement of the ambitious and challenging modal split targets will very much depend on the successful implementation of these complementary strategies.

In particular, a **Car Parking Strategy** has been developed for the town which considers parking management measures for the town, including the town centre. The Strategy includes measures to ensure sufficient parking for shoppers but discourage all day parking. In so doing, the likelihood would be increased that the improved bus services outlined in this strategy will become commercially viable in the longer term.

A **Town Travel Plan** will promote sustainable transport through a flexible combination of measures, including the public transport marketing and information elements outlined in the previous section.

A **Walking and Cycling Strategy** has been developed which will ensure good accessibility to bus services on foot or by cycle.

A **Freight Strategy** will be developed to manage future delivery demand in the expanding town. With respect to public transport, there is a need to minimise any negative impacts around vehicle loading and unloading on local roads, which may impede the efficient operation of bus services.

Chapter 7 – Impacts of the Public Transport Strategy

Overview

The introduction of new and improved bus services during the masterplan period will significantly improve the public transport offer in Whitehill & Bordon and the surrounding area, contributing to the aim of creating an entirely new culture of sustainable travel behaviour within the development.

In this context, providing a robust forecast of public transport demand is challenging. However, an alternative approach is to set targets for public transport demand, based on realistic objectives for recouping operating costs through the fare box. The bus route improvements have been identified to complement the existing offer and provide linkages to new destinations of proven significance to existing Whitehill & Bordon residents.

As such, if supported by high quality vehicles and sustained marketing, the following targets are considered realistic for the purposes of budgeting for bus service revenue support throughout the masterplan period:

- for the new town service, a budget of £625,000 has been allocated for the operation of the proposed town service during Phase 1 and no further revenue support is envisaged during this period. During subsequent phases (with the Greatham extension removed), it is anticipated that 40% of operating costs could be recouped through the fare box. Beyond the masterplan period, it is likely that revenue support will continue to be required at a similar level.

- for the new and upgraded sub-regional bus services delivered during Phases 2/3 (2015 to 2025), 75% of operating costs could be recouped through the fare box, assuming that the services operate for five years and then become commercially viable thereafter, as the quantum of new homes and jobs reaches a sufficiently high level. However, this percentage is estimated on the basis that the proportion of journeys currently operated on a commercial basis (i.e. in the year 2012) is maintained until the service improvements are delivered. If further bus journeys are deregistered then the level of subsidy required could be higher than 25% of operating costs.

- for the new sub-regional services implemented during Phase 4 (2025 to 2036), 50% of operating costs could be recouped through the fare box, assuming that the services operate for five years and then become commercially viable thereafter.

- operating costs for the new local demand responsive services are estimated at £50,000 per annum. Based on 2011 data for the Bordon Link, it is estimated that 15% of annual operating costs (£7,500) will be recouped through revenue/bus pass reimbursement. This results in a total subsidy of approximately £1 million throughout Phases 2, 3 and 4.

The patronage required to achieve these targets can then be compared with the target modal split identified for the year 2036 to assess whether the proposed public transport package is:

a) sufficiently robust to support the target modal split; and

b) has a realistic probability of being commercially viable once the Whitehill & Bordon development is fully built out.

Operating Costs and Level of Subsidy Required

The basis for revenue calculations (assuming that 40% of boardings are comprised of concessionary pass holders) is shown in **Appendix E**. Based on these inputs, the required annual and daily demand (taking into account the impact of concessionary travel), passengers per journey and vehicle occupancy has been calculated for a range of revenue targets, i.e. the demand required to recover 50%, 75% and 100% of operating costs (excluding bus operators' profit margin).

In the case of the town bus service a 40% revenue target has also been considered, as this service is expected to require ongoing revenue support.

Phase 2/3

The results for the proposed Phase 2/3 town and sub-regional routes are presented in **Appendix F**. These show that the estimated total operating costs for the proposed town and sub-regional routes during Phase 2/3 is approximately £3.4 million per annum at current (2012) prices, requiring a total daily patronage (one-way trips) of 3,304 to cover costs (excluding operators' profit margin).

The above sum is the aggregate of whole route costs across the four bus services. However, Services 13, 18 and 37[11] already operate on a (largely) commercial basis at the present time. The strategy recommends that frequencies be improved, and this will obviously incur additional operating costs, but with the provision of additional homes and jobs within Whitehill & Bordon and the implementation of supporting measures it is considered realistic for these improved services to become commercially viable at an early stage.

Based on the town service recouping 40% and the sub-regional services 75% of operating costs through the fare box, the level of subsidy required to support the operation of the Phase 2/3 bus routes is estimated at £4.7 million (£875,000 for the town service[12] and £3.8 million for the sub-regional services)[13]. This sum is intended to covers the entire duration of Phase 2/3 (i.e. ten years) and includes a 10% uplift to allow for bus operators' profit.

[11] Service 37 covers the route section from Havant to Petersfield, but the same vehicle operates as Service 38 from Petersfield to Alton. However, the latter section is financially supported by Hampshire County Council.
[12] This sum assumes ongoing revenue support of £87,500 per annum throughout Phase 2/3.
[13] This sum assumes that revenue support will be provided for each upgraded sub-regional service (i.e. 13, 18 and 37/38) for a period of five years following its introduction, with 75% of total operating costs across the five year period being recouped through the fare box. After five years from introduction, it is assumed that each service will become commercially viable.

Phase 4

The results for the proposed Phase 4 town and sub-regional routes are presented in **Appendix G**. The estimated total operating costs for the proposed town and sub-regional routes during Phase 4 (i.e. including the Phase 2/3 sub-regional routes and an enhanced town service with a 30 minute frequency) is approximately £5.4 million per annum at current (2012) prices, requiring a total daily patronage (one-way trips) of 5,879 to cover costs (excluding operators' profit margin). This compares favourably with the 2036 target bus mode share for all movements to, from and within Whitehill & Bordon (combining journeys made by new and existing residents, employees and visitors) of 12,488 trips.

The level of subsidy required to support the operation of the Phase 4 bus routes is estimated at £8.8 million (£2.5 million for the town service[14] and £6.3 million for the sub-regional services[15]). This sum is intended to cover the entire duration of Phase 4 (i.e. twelve years) and includes a 10% uplift to allow for bus operators' profit. This is based on the assumption that the town service would recoup 40% and the newly introduced sub-regional services 50% of operating costs through the fare box, and that sub-regional services introduced during Phase 2/3 would operate on a commercial basis.

[14] This sum assumes ongoing revenue support of £210,000 per annum throughout Phase 4.

[15] This sum assumes that sub-regional services 13, 18 and 37/38 will all operate on a commercial basis throughout Phase 4. Revenue support will be provided for each new sub-regional service (i.e. X50, X51, X52 and X53) for a period of five years following its introduction, with 50% of total operating costs across the five year period being recouped through the fare box. After five years from introduction, it is assumed that each service will become commercially viable.

Chapter 8 – Delivering the Public Transport Strategy

Initial high level cost estimates for the Public Transport Strategy measures are presented in the table below, together with an outline plan for their implementation.

Ref No.	Measure	Indicative Funding Allocation (£m)	Phase			
			1	2	3	4
Bus Services						
BS1	Phase 1 Bus Subsidy (Town Service)	£0.625				
BS2	Phase 2/3 Bus Subsidy (Town Service)	£0.875				
BS3	Phase 4 Bus Subsidy (Town Service)	£2.5				
BS4	Phase 2/3 Bus Subsidy (Sub-Regional Services)	£3.8				
BS5	Phase 4 Bus Subsidy (Sub-Regional Services)	£6.3				
BS6	Bus Subsidy (Demand Responsive Services)	£1.0				
Rail Station Facilities						
RS1	Station Travel Plans	£0.035				
Supporting Measures						
SM1	Bus shelters (A325 and Forest Centre)	£0.125				
SM2	Town Centre Transport Hub	£1.2				
SM3	Bus shelters (within new development)	£0.55				
SM4	SVD at signalised junctions	£0.1				
SM5	Whitehill & Bordon Sustainable Travel Website	£0.015				
SM6	RTI to smart phones/workplaces/selected bus stops	£0.5				
SM7	Printed travel information	£0.2				
SM8	Bus corridor marketing/branding	£0.25				
SM9	Complimentary public transport passes	£0.2				
SM10	Smart ticketing	£0.05				
SM11	Wi-Fi enabled bus fleet	£0.5				
SM12	Next stop audio visual announcements	£0.25				
Total Costs		**£19.1**				

Funding sources are likely to include developers via s106 and Community Infrastructure Levy contributions, together with grants from national Government (DCLG) and local authorities and potential contributions from public transport operators.

Chapter 9 – Conclusions

By integrating land use and transport planning from the outset, and by working in partnership with local authorities, key stakeholders and local communities, the regeneration of Whitehill & Bordon offers an opportunity to revolutionise travel within the town, rebalancing priorities away from dependence on the private car. It will deliver important and visible improvements, reducing the negative impacts of transport on the environment, the community and local transport infrastructure.

This Public Transport Strategy is a developing document that draws from ongoing work and outlines a framework for the future public transport system informed by the three key themes of **reducing the need to travel outside the town**, **managing car demand within and outside the town** and **enabling sustainable transport for all trips**.

The identified public transport improvements aim to challenge and change attitudes to public transport amongst current residents, reduce the dominance of the private car in current travel patterns, minimise any negative transport impacts of the town's regeneration on local communities and the environment and, above all, to make it a real possibility to live in Whitehill & Bordon without having to own a car.

Challenging modal split targets have been set in order to accommodate the greatly increased travel demand associated with the regenerated and expanded town without having a significant adverse impact on the safety and operation of the local transport network. Achieving these targets will, however, require a 'step change' in the quality of public transport if they are to be achieved.

The required improvements to services, infrastructure and information/marketing support the modal split targets whilst having a realistic opportunity of being commercially viable in the longer term. The recommended interventions focus on delivering improved accessibility to existing rail stations in the local area by a variety of modes, together with high quality bus services to cater for movement between homes, employment and recreational destinations. These bus services will be implemented at town, local and sub-regional level.

The opportunity is available to implement a high quality integrated and modern public transport system which supports sustainable economic growth, provided that it is adequately resourced through a combination of funding sources.

Appendix A – Stakeholder and Public Consultation Log

Ref.	Organisation	Comments	HCC Response
1	Lindford Parish Council	Report envisages great improvements but hard to see their delivery given recent changes to bus services, e.g. Liphook rail link bus withdrawn, cuts to route 18. What has happened about the new bus service for Whitehill, Bordon, Lindford and Standford which was supposed to start in autumn 2012? Extremely disappointing to learn that the heavy rail and light rail options have been effectively rejected. The eco town will remain relatively small with limited facilities – many people will continue to rely on the private car. Available bus subsidies will not dent this demand to anything like the extent assumed – greater realism is needed. The Liphook Station bus service illustrates that relying on developers' contributions is unsustainable. Plans to improve the safety of junctions and make local roads more friendly to pedestrians, cyclists and public transport users and to provide better information about bus services are welcomed. All suggestions regarding the provision of bus services in and around the Eco-Town are those of compromise and "making the best of a bad situation" outcomes, rather than sensible, well thought through solutions to the very real needs, wants and requirements of the population of the area. How will the elderly, the infirm, children, the youth and young families realistically be expected to get around without relying upon car use? Nobody will take seriously any local bus service which operates on a frequency of 90 minutes as a viable alternative to their car. It is difficult enough to persuade people that frequencies of 30 or even 20 minutes are attractive. 15 minutes is considered reasonable by most travellers. The rejection of plans for a railway is regrettable, but a regular bus service between the eco town and Liphook Station ,via Lindford, would help to reduce traffic volumes on the B3002/B3004, or at least stop them rising.	The new town bus service will now commence in March 2013. The PTS will be updated to reflect this. Appendices E and F provide details of the rates of revenue recovery which have been considered for the new and improved bus services. These rates are considered realistic given that the bus services will provide direct and frequent connections to key destinations, with opportunities for patronage not only from Whitehill & Bordon and Lindford, but also intermediate settlements en-route. When the development is fully built out, combined bus frequencies of 15 minutes to the Blackwater Valley, 20 minutes to Alton and 30 minutes to Liphook and Petersfield will compare very favourably with the level of service provided from similarly sized towns in the South East. These and other proposed bus services have been carefully identified with reference to other policies and strategies, together with Census travel to work data. The services are intended to cater for a range of journey types including commuting for work or education purposes, private business (such as to local hospitals) as well as recreation. In the above context, the proposed bus services are considered to represent a realistic and attractive alternative to car use by the groups cited.
2	GVA Grimley (on behalf of Defence Infrastructure Organisation)	Important that the role of the Inner Relief Road in the public transport strategy is clarified. It is important to understand and provide greater clarity into the level of service required and the long term viability of the services identified. In addition it is not clear as to the patronage and cost assumptions that underpin the financial case for the various services. It is important that this information is discussed and a long term viability of the services is better defined in order that any subsidy provided from the Eco-town is focused upon long term viable public transport solutions to identified demands.	The PTS will be updated to provide further clarification that the Inner Relief Road will facilitate the use of current A325 as a key public transport artery. Appendices D, E and F provide details of the cost and patronage assumptions made. Long term service viability will depend upon the quantum of new homes and jobs reaching a sufficiently high level – a fuller definition will be possible as the masterplan evolves.
3	Local resident (Oakhanger)	It is fundamental to the achievement of an "eco" town or reducing reliance on the car by those living or working in Whitehill Bordon that first class public transport should be available before any new dwellings are built, i.e. now. It has always been promised that this would occur and that the service would be financially supported in the initial years. If development is to commence in 2015/16 then the whole service should be in place by then, not merely phased in until 2036! First class public transport may be realistically achievable in large towns or cities such as London, Birmingham and Manchester. However, in a rural area such as Whitehill Bordon there are fewer people and they wish to travel to very widely spread destinations externally. Only a very limited number seek to travel internally and those would only wish to travel by a frequent public transport service which would take them economically to and from points very close to their home and destination. Recent experience has shown that even the very limited public transport presently available can be withdrawn at short notice and is uneconomic. Under the Public Transport Strategy, Whitehill Bordon will remain inaccessible other than by car for many years. In the main, improvements will not be in place until 2036 at the earliest.	The new town bus service will be introduced in March 2013, well in advance of the development commencing. The PTS suggests that the implementation of bus services will need to take place in phases as the population expands, so that services have the greatest opportunity to gain a sustainable patronage base and achieve longer term commercial viability.

Ref.	Organisation	Comments	HCC Response
4	CPRE Hampshire	Proposals for town and local bus services appear to be adequate provided that introduction is matched to the growth of the development and that service continuity is guaranteed. Concern at sub-regional proposals – buses will sit in traffic with no provision for diversionary action. As reserved track provision is not feasible, the 15 minute frequency for Route X51via the very congested roads of Farnham is unlikely to be sustainable, resulting in reversion to car use and diversionary action which will have an unacceptably severe impact on rural roads and villages. Surprise that there is no mention of rail in Executive Summary. Not clear as to the level of Optimism Bias used in the cost calculations. No surprise that a direct service to London generates the best Benefit to Cost ratio, but this ignores two points, the first that Whitehill & Bordon is being developed as an Eco-town, not a commuter town and the second that the current main direction of out-commuting from Whitehill & Bordon is to the Blackwater Valley. Arguably an attractive service could be provided to Camberley and beyond without re-timetabling or requiring additional paths beyond Aldershot. If it is to be accepted that out-commuting will increase, this needs to be forecast and a sustainable transport solution proposed. This cannot rely on unrealistic assumptions in terms of bus use or accept significant car use increase. Rail remains one answer here. CPRE would need to reconsider its position of conditional support for the development unless such a sustainable solution is found.	The PTS proposes the phased introduction of services as the development progresses, to maximise their longer term viability. The Executive Summary highlights the need to improve accessibility to existing local rail stations. The proposed bus service frequencies seek to achieve an interchange with rail services which is as seamless as possible. The level of Optimism Bias is indicated in section 3.11 of the GRIP 3 Study (Appendix B to the PTS). The GRIP 3 study also considers the operational feasibility of introducing a rail service to Ascot (via Camberley). Even if operational constraints were capable of being overcome, the capital costs associated with introducing a new rail service remain high and securing public funding would be challenging given the competition with other schemes which deliver better value for money. It would not be possible to fund the rail link from developer contributions alone, and ongoing revenue support from the DfT would be likely.
5	Local resident (Whitehill)	Why has Lindford been excluded from the strategy? The Rolls Royce public transport system, described in the Draft Transport Strategy, is unlikely to be affordable within the constraints of the limited budgets that will be available during that period. Viewed in that light, most of the aspirations given in the document appear to be very much 'pie in the sky'. The prospect of Whitehill & Bordon acquiring 'new and improved links with major regional employment and shopping centres, including the Blackwater Valley, Basingstoke and Guildford, providing a combined frequency ranging from a maximum of every 15 minutes to a minimum of every 60 minutes' has given me a good chuckle. It is not clear if the service will be provided on a 24 hour basis. Even the proposed local service to nearby towns and local villages 'of a frequency of between 15 and 30 minutes, when fully developed', seems to be somewhat ambitious in relation to the size and nature of the location and the proposed development. It would, however, be vital to provide excellent public transport links to the local railway stations at Alton and Liphook. *A number of other comments relate to other work outside the scope of the Public Transport Strategy. These are noted.*	Lindford has not been excluded from the strategy. The PTS will be updated to make clear that the town service and improvements to route 18 would both benefit Lindford. The public transport improvements have been identified and costed within the PTS. In the longer term the commercial viability of bus services is sought. This is considered realistic in the context of the 4,000 new dwellings currently anticipated. The proposed operating hours for the bus services are presented in Chapter 5 of the PTS. Operating hours of 0600 to 2300 from Monday to Saturday are envisaged, with Sunday services (0700 to 2200) on several routes. Journeys to nearby towns and local villages on the main transport corridors, including Alton and Liphook, will be catered for by the proposed sub-regional bus services. Supported by demand responsive provision, this approach is considered realistic and deliverable.
6	Local resident (Farnham South)	An ambitious plan but there is no detail of how it is to be funded. Need stick as well as carrot to encourage greater use of public transport. Political will is needed to restrict parking spaces and impose realistic parking charges in destination towns e.g. Farnham. Frequencies of limited stop services should be at least every 30 minutes during the daytime. Possibly some people could live in WB without a car, with the proposed public transport improvements.	P.18 of the PTS identifies an implementation delivery plan with likely funding sources. The development of an inward investment strategy is ongoing. A Parking Strategy has been developed which considers parking management measures within Whitehill & Bordon. Other comments are noted.

Ref.	Organisation	Comments	HCC Response
		Concerned that if public transport strategy is not implemented as proposed there will be greater use of private cars, causing congestion and air pollution problems in Farnham.	
7	Local resident (Bentley)	It does not consider that the new residents of WB won't be of a demographic that wants to use public transport. The strategy hasn't considered free bus services to surrounding rail and bus terminals. Only this would encourage me to try using the bus for some existing car journeys. Very few people would be able to live in WB without having to own a car.	The masterplan presents revised population projections. The additional population will cover a cross-section of socio-economic groups and it is considered that the substantially improved public transport offer will represent an attractive alternative to the private car for many Whitehill & Bordon residents.
8	Whitehill Town Council	Too little too late. There will be no regional access to cities e.g. Portsmouth, Guildford and Basingstoke until 2028 (Hampshire County Council gave this date to the Town Council on the implementation of the new bus services to the wider community). Winchester and Chichester are other key destinations needing to be served. A proficient rail link to a regional train station is crucial including evenings and weekends. The current size of the buses is inappropriate for the roads. Need to see greener buses e.g. hybrid and bio fuel vehicles. Light rail has not been considered appropriately e.g. light rail train trams could work on the Bordon to Bentley line as a shuttle service without affecting the Alton to London timetable. An unmanned monorail should be considered. Whitehill & Bordon should be a transport hub for the villages, and better integrated with neighbouring towns. Real time and audio visual information at all bus stops, by visual displays as well as mobile phones. Mobile broadband would need to be significantly improved for mobile phones unless wi-fi hot spots to be provided at bus stops. The strategy wouldn't encourage me to try the bus because a viable bus service will not start until 2028. For the same reason it will not be possible to live in Whitehill & Bordon without a car. The cost of using the service will be a major constraint. Would like to see improved evening/weekend frequencies and an integrated bus and rail network timetable. HCC has systematically cut bus subsidies to Whitehill & Bordon over the last 20 years; what is proposed is insufficient and too late to achieve a significant modal shift from cars to buses. There is no guarantee that once the new services are in place that they can be sustained into the future. What is being offered is equivalent of 1980s levels for a population that will have doubled in size.	Chapter 5 of the PTS identifies that alternative fuels are likely to become commercially viable in later years; the bus fleet can respond to this. The feasibility of light rail/ultra light rail has been considered in great detail within the technical studies in Appendices A (GRIP 2 Study) and C (Assessment of Alternative Modes). With regard to the investigation of an unmanned monorail, the key conclusion within Appendix C, namely that the low economic performance of the ultra light rail and diesel shuttle options is fundamentally a result of the need for passengers to interchange to complete their journey to their destination, is considered to remain valid. Chapter 3 of the PTS stresses that a Transport Hub will be provided in the heart of the town centre. Real time information via both fixed display screens and mobile phones will be considered. The integration of bus and rail timetables is integral to the PTS; the proposed bus routes and frequencies will deliver improved access to local rail stations. The implementation of new and improved bus services will be undertaken in phases as the population of Whitehill & Bordon grows. This will give the bus services the best possible opportunity to achieve commercial viability in the longer term.
9	Local residents (Oakhanger)	The idea that providing bus services and jobs in the town will cut out-commuting and traffic in the town is a fine theory. But it is just a theory. Where have such measures ever worked on this scale? People invariably move to a location where they have found work. Unless jobs in the town are available in advance of house building, the attraction of moving to Bordon will continue to be an affordable house, not a job. People do not buy a house without having a job to pay for it. It follows that if jobs are not available ahead of house-building, people will retain their job elsewhere in the region and commute to work outside Bordon. The failure to implement this policy is already demonstrated by the 100 homes proposed for the Quebec Barracks site, which have had their one-job-per-home quota deferred, to be met later by work units at Louisburg Barracks.	Comments are noted. The importance of generating employment within the town is integral to the masterplan.

Ref.	Organisation	Comments	HCC Response
10	Local resident (Bordon)	Strategy seems to indicate that the only way forwards is road transport and not the more green train. A tram system has not been considered. The public transport on offer will not encourage lower private car use. Nor does it address the route to other Hospitals, such as the Royal Surrey, which is closer to Bordon than North Hants Hospital in Basingstoke. Public information service within the buses, giving the travel time to the next stop or to the end of the line, would be useful. A dedicated tram service would create a better link to nearby rail services. The bus services will not be frequent enough and the cost would not encourage me to stop using the car. I would still drive to Guildford for example to catch the train to London. The service is too slow in comparison to using a car and do not go far enough in improving facilities, such as getting to local hospitals, for people to live in WB without having to own a car. Although the rail studies do not suggest a strong business case for heavy rail facilities, this does not reflect the potential for Bordon and Whitehill to become a commuting town for London, which would bring a more prosperous future.	The PTS will be updated to consider the feasibility of providing a bus route from Whitehill & Bordon to Guildford via Farnham and Royal Surrey Hospital. Appendix C (Assessment of Alternative Modes) considered the feasibility of ultra light rail, including the benefits of increased penetration of Whitehill & Bordon (i.e. via on-street tram operation). However, the Benefit to Cost ratio was found to be too low to cover the scheme operating and capital costs. Chapter 6 of the PTS identifies next stop audio visual announcements as being an important supporting measure in encouraging bus use. Other comments are noted.
11	Local resident	Wouldn't encourage me to try using bus. Car is cheaper, more reliable, safer, convenient, quicker, and you can carry your luggage/shopping/dog/bike. Also buses don't go to Fareham so no good for me for work. Even if the bus was free I doubt I would use it, I would rather walk/cycle. The last time I got on a bus it was late arriving so I missed my train. The behaviour of fellow passengers dissuaded me from wanting to get somewhere on public transport, no matter how noble the idea. I decided then never to use a bus again, I would rather get a taxi if I couldn't drive for some reason.	Comments are noted.
12	Local resident (Bordon)	The strategy would only encourage me to travel by bus if services tie in with first trains to London. This would also determine whether one would be able to live in Whitehill & Bordon without having to own a car. A rail link is the single most important thing this town needs.	Comments are noted. The PTS has identified bus routes and frequencies to provide interchange with rail services which is as seamless as possible.
13	Local resident (Bordon)	Bordon residents do not use public transport because of the cost and poor service. You cannot purchase a return ticket before 9.30am and cannot use free bus passes. This makes it cheaper to drive to and park in Farnham (for example) than to catch a bus. The only way to improve public transport would be for the rail link to go ahead. If this does not happen then no houses should be built until the road infrastructure is improved. Don't agree with three-tiered approach to public transport provision - why would people in local villages want to come to Bordon when there is nothing to offer them here? The strategy wouldn't encourage me to try using the bus because of the cost, poor service and insufficient routes. Wouldn't be possible to live in Whitehill & Bordon without owning a car because most people work outside of the town and shop outside of the town.	The PTS will be amended to make more explicit the need the need for road infrastructure to be built at an early to allow good bus service penetration and encourage public transport use from the outset. The masterplan identifies a new town centre with retail, commercial, leisure and residential uses, forming a destination for a wide variety of journey types from surrounding towns and villages as well as from within Whitehill & Bordon itself. The consultation for the PTS was widely advertised with paper questionnaires available at the Forest Centre, Library and other locations in addition to the online survey.

Ref.	Organisation	Comments	HCC Response
		Why are these questionnaires not made available to all residents of Bordon and Whitehill?	
14	Local resident (Lindford)	Buses are unlikely to tempt many from their cars and experience has shown that they are easily withdrawn. All branch line options, heavy rail, light rail and ultra light rail were not so much considered as dismissed in the flawed document GRIP 2. You are still basing decisions upon specious arguments shown to be fallacious. Improved bus services are all very well, but since the most energy efficient form of land transport is rail, that is what is appropriate for an eco-town. It could possibly encourage me to try the bus, but a rail link I would certainly use. Some local residents no doubt do not own a car now. It is not obvious that the suggested improvements will alter the percentage a great deal. Why is the Council not prepared even to consider that Halcrow's cost benefit figures are only based on ill founded suppositions? Why will it not even listen to anyone who criticises the figures? When it was clearly shown that GRIP 2 was unreliable to say the least and HCC ignored this, is any "consultation" or questionnaire more than just window dressing?	The GRIP 2 and 3 studies (Appendices A and B) were undertaken using standard Network Rail and Department for Transport appraisal processes. Close consultation with Network Rail and South West Trains was maintained throughout, and both organisations confirmed that the study methodology and conclusions were robust.
15	Local resident	Strategy has not emphasised the opportunity for rail links between neighbouring towns. Rail is not really promoted. It is almost looking for reasons "why not to do it" rather than "we want to do it" Bus service frequencies should be increased together with better communication on their arrival/departure times (wireless and GPS communication should be used). The strategy wouldn't encourage me to try using the bus, bus services should link with a train service coming into Bordon. It wouldn't be possible for some people to live in Whitehill & Bordon without having to own a car – the current plans will cause an increase in the number of cars, unless a train service is provided into the town.	Further to ref. 14 above, an objective assessment of all options was undertaken by independent consultants. The best performing options achieved Benefit to Cost ratios providing "Low" value for money. In this context, securing public funding for any option would be challenging at present considering the limited availability of public funding and the requirement to compete for this funding with other schemes with a Benefit to Cost ratio providing "High" or "Very High" value for money. It would not be possible to fund the rail link from developer contributions alone, and ongoing revenue support from the DfT would be likely.
16	Local resident (Bordon)	In terms of supporting measures, Stagecoach need to update their fleet. The buses are always breaking down and at peak times are overcrowded adding to the stress of getting to and from work. Forest Road has been cut from the service 18 journey as it "was running late" and not connecting with the trains. It is still running late at peak times!!! Unless Stagecoach improve the buses and HCC fund more frequent services you will never get the public to use the buses. Also, the service has been cut to one per hour but at peak times they are running the service as a single deck bus when in effect there are two lots of passengers using it, with standing room only from Farnham to Bordon in the evenings!!! I would actually quite like to work in Bordon but even with taking the bus fare into consideration the salaries are not high enough.	Comments are noted. Through close partnership working with operators, a modern bus fleet will be delivered as the development progresses. Better quality vehicles and higher frequencies will represent a step change from the current offer.
17	Stagecoach South	Expressed concerns regarding the longer term commercial viability of some proposed sub-regional routes, in particular: • 13 (Alton to Liphook) – frequency improvements may yield little patronage growth;	The PTS will be updated to consider the merits of a bus service from Whitehill & Bordon to Guildford via Farnham versus the originally proposed route via Hindhead. For sub-regional routes where the longer term commercial potential is more

Ref.	Organisation	Comments	HCC Response
		• 37/38 (Whitehill & Bordon to Havant)/X53 (Whitehill & Bordon to Petersfield) – Petersfield may be too small to attract sufficient patronage from Whitehill & Bordon to make these services commercially viable; • X51 (Whitehill & Bordon to Farnborough) – employment opportunities in Farnborough may not attract a large number of people from Whitehill & Bordon. However, there may be long term commercial merit in a peak hours only service; and • X52 (Whitehill & Bordon to Basingstoke) – the journey may be too long to be attractive to commuters to Basingstoke. However, a service from Whitehill & Bordon to Guildford via Farnham is considered to have good commercial potential, given multiple travel markets and the lack of an attractive rail journey between Farnham and Guildford. If external funding is available, there is potential for alternatively fuelled buses to operate services from Whitehill & Bordon in the future. There is a need to ensure that road infrastructure is in place at an early stage to enable good bus penetration to the development areas and encourage public transport use from the outset.	doubtful, the improvements should be introduced on a trial basis and patronage monitored. If a sustainable patronage base is not achieved over a defined period, revenue support could be reallocated to other better performing routes, or to other entirely new routes not identified in the PTS. It is, of course, possible that during the period of the masterplan to 2036, entirely new travel markets and destinations may arise and the bus network must have the flexibility to adapt to the changing travel needs of residents of Whitehill & Bordon and the surrounding area.

Appendix B – Whitehill & Bordon Rail Study (GRIP 2)

Appendix C – Whitehill & Bordon Rail Study (GRIP 3)

Appendix D – Whitehill & Bordon Rail Study (Assessment of Alternative Modes)

Appendix E – Inputs to Revenue Calculations

Route	Phase	Journeys operated per annum	Seats available per annum (90% of vehicle capacity)	Operating costs per annum	Assumed Single Fare	Assumed Full Fare Paid	Assumed Concessionary Fare (60% reimbursement to operator)
Route 13 - Alton to Liphook via Whitehill & Bordon	2/3	19,096	842,134	£716,160	£2.50	£1.75	£1.50
Route 18 - Aldershot to Haslemere via Whitehill & Bordon	2/3	19,342	852,982	£1,324,361	£4.50	£3.15	£2.70
Route 37 - Havant to Whitehill & Bordon via Liss Forest and Petersfield	2/3	10,645	469,445	£733,398	£5.00	£3.50	£3.00
Whitehill & Bordon Town Service (East Loop/West Loop)	2/3	5,490	108,702	£132,587	£2.00	£1.40	£1.20
Route X50 - Whitehill & Bordon to Guildford via Farnham and Royal Surrey Hospital	4	9,760	430,416	£387,752	£5.00	£3.50	£3.00
Route X51 - Whitehill & Bordon to Farnborough Airport via Farnham and Aldershot	4	17,690	780,129	£1,016,137	£4.50	£3.15	£2.70
Route X52 - Whitehill & Bordon to Basingstoke via East Worldham and Alton	4	9,760	430,416	£527,622	£5.00	£3.50	£3.00
Route X53 - Whitehill & Bordon to Petersfield via Liss and EHDC Civic Offices	4	9,760	430,416	£414,241	£3.00	£2.10	£1.80
Whitehill & Bordon Town Service (East Loop/West Loop)	4	19,834	392,713	£319,034	£2.00	£1.40	£1.20

Appendix F – Revenue/Patronage Targets, Phase 2/3 Bus Routes

Route	Per annum	% of annual operating costs			Daily Corridor Bus Demand (50% Car Mode Share, 13% Bus)[16]	% Bus Mode Share on Corridor (100% of Operating Costs)
		50%	75%	100%		
Route 13 - Alton to Liphook via Whitehill & Bordon	Required Revenue	£358,080	£537,120	£716,160	3053	5.1%
	Target Annual Demand (passengers)	217,018	325,527	434,036		
	Target Daily Demand (passengers)	596	894	1192		
	Passengers Per Journey (one way)	11	17	23		
	% of vehicle capacity	26%	39%	52%		
Route 18 - Aldershot to Haslemere via Whitehill & Bordon	Required Revenue	£662,181	£993,271	£1,324,361	2709	5.9%
	Target Annual Demand (passengers)	222,956	334,435	445,913		
	Target Daily Demand (passengers)	613	919	1225		
	Passengers Per Journey (one way)	12	17	23		
	% of vehicle capacity	26%	39%	52%		
Route 37/38 - Havant to Whitehill & Bordon via Liss Forest and Petersfield	Required Revenue	£366,699	£550,049	£733,398	812	9.8%
	Target Annual Demand (passengers)	111,121	166,681	222,242		
	Target Daily Demand (passengers)	305	458	611		
	Passengers Per Journey (one way)	10	16	21		
	% of vehicle capacity	24%	36%	47%		

Route	Per annum	% of annual operating costs				Daily Corridor Bus Demand (50% Car Mode Share, 13% Bus)	% Bus Mode Share on Corridor (100% of Operating Costs)
		40%	50%	75%	100%		
Whitehill & Bordon Town Service (East Loop/West Loop, 60 minute frequency)	Required Revenue	£53,035	£66,293	£99,440	£132,587	649	5.5%
	Target Annual Demand (passengers)	40,178	50,222	75,333	100,444		
	Target Daily Demand (passengers)	124	138	207	276		
	Passengers Per Loop	7	9	14	18		
	% of vehicle capacity	37%	46%	69%	92%		

[16] Demand derived from Tables 5.6 to 5.8 of Amey Transport Assessment (September 2011).

Appendix G – Revenue/Patronage Targets, Phase 4 Bus Routes

Route	Per annum	% of annual operating costs			Daily Corridor Bus Demand (50% Car Mode Share, 13% Bus)[17]	% Bus Mode Share on Corridor (100% of Operating Costs)
		50%	75%	100%		
Route X50 - Whitehill & Bordon to Guildford via Farnham and Royal Surrey Hospital	Required Revenue	£193,876	£290,814	£387,752	N/A	N/A
	Target Annual Demand (passengers)	58,750	88,126	117,501		
	Target Daily Demand (passengers)	161	242	323		
	Passengers Per Journey (one way)	6	9	12		
	% of vehicle capacity	14%	20%	27%		
Route X51- Whitehill & Bordon to Farnborough Airport via Farnham and Aldershot	Required Revenue	£508,068	£762,102	£1,016,137	1855	6.6%
	Target Annual Demand (passengers)	171,067	256,600	342,134		
	Target Daily Demand (passengers)	470	705	940		
	Passengers Per Journey (one way)	9.7	14.5	19.3		
	% of vehicle capacity	22%	33%	44%		
Route X52 - Whitehill & Bordon to Basingstoke via Alton	Required Revenue	£263,811	£395,716	£527,622	814	7.0%
	Target Annual Demand (passengers)	79,943	119,914	159,885		
	Target Daily Demand (passengers)	220	329	439		
	Passengers Per Journey (one way)	8	12	16		
	% of vehicle capacity	19%	28%	37%		
Route X53 - Whitehill & Bordon to Petersfield via Liss and EHDC Civic Offices	Required Revenue	£207,121	£310,681	£414,241	907	8.2%
	Target Annual Demand (passengers)	104,606	156,910	209,213		
	Target Daily Demand (passengers)	287	431	575		
	Passengers Per Journey (one way)	11	16	21		
	% of vehicle capacity	24%	36%	49%		

[17] Demand derived from Tables 5.6 to 5.8 of Amey Transport Assessment (September 2011).

Route	Per annum	% of annual operating costs				Daily Corridor Bus Demand (50% Car Mode Share, 13% Bus)	% Bus Mode Share on Corridor (100% of Operating Costs)
		40%	50%	75%	100%		
Whitehill & Bordon Town Service (East Loop/West Loop, 30 minute frequency)	Required Revenue	£127,614	£159,517	£239,276	£319,034	649	13.3%
	Target Annual Demand (passengers)	96,677	120,846	181,269	241,693		
	Target Daily Demand (passengers)	298	332	498	664		
	Passengers Per Loop	5	6	9	12		
	% of vehicle capacity	25%	31%	46%	62%		