PARSONS BRINCKERHOFF

Welborne Transport Strategy

Final Report

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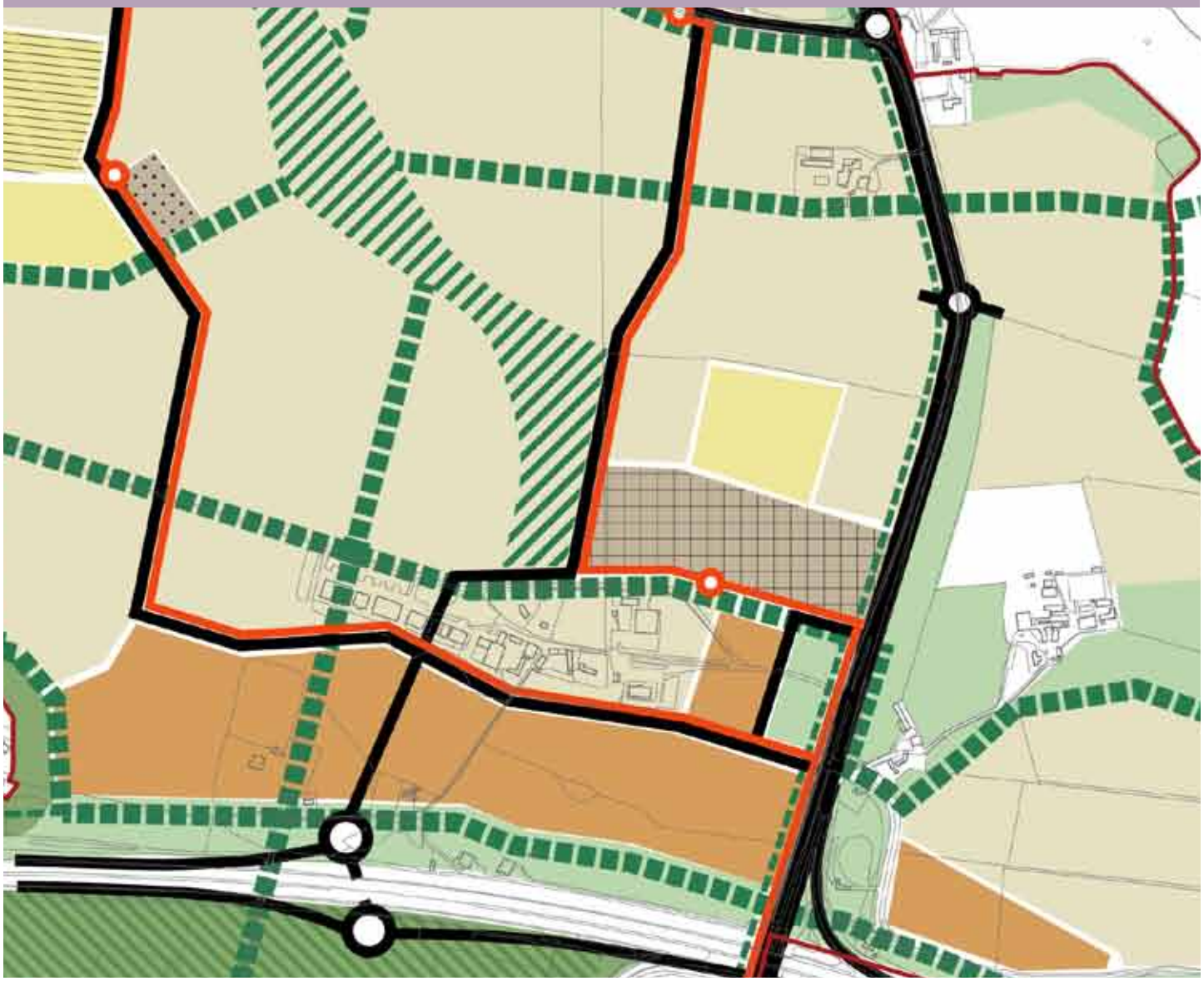
Prepared by Parsons Brinckerhoff



Contents

1. Approach and background

1.1 Approach

This Transport Strategy has been devised in conjunction with the Concept Masterplan and Strategic Framework for the Welborne Community.

The Fareham Core Strategy policy CS13 relates to the North Fareham Strategic Development Area and sets the policy context within which the Concept Masterplan and Strategic Framework has been developed. In transport terms, the CS13 refers to a series of key principles related to containment, sustainable travel, the integration of bus rapid transit (BRT) and the importance of minimising impact on the local and strategic highway network, in particular the M27.

Policy CS13 was informed by an 'Emerging Transport Strategy' which pulled together a number of transport studies and strategies into one single document. As the title implies this was always seen as a living document, and the expectation was that it would be revised and updated as the plan for Welborne progressed. This Transport Strategy is therefore the latest iteration in this process.

Work on the Transport Strategy has evolved, informed by changes to the strategic framework and concept masterplan, transport modelling evidence, and on-going discussions with the Highways Agency, Highways Authority and others. The transport evidence has built upon existing studies and plans to develop a comprehensive package of measures, from masterplanning, investment in new infrastructure and ongoing governance arrangements, to secure sustainable transport from the outset.

This work will now be taken forward by the developers of Welborne. The expectation is that this Strategy will inform the developer masterplanning, Structuring Plan, Transport Framework and Transport Assessment to accompany planning applications for the delivery of Welborne.

Welborne, although separate to Fareham, will have strong connections with the rest of the Borough, connected through transportation, workplace destinations, higher order shopping and leisure attractions.

Central to this vision is the Transport Strategy to ensure Welborne is as sustainable as possible in transport terms whilst maintaining strong links to the local and strategic highway network.

In developing this Strategy, we have considered and evaluated a large amount of existing evidence and studies that have been undertaken.

Our Strategy is underpinned by five key principles:

- ☑ Transport and land use integration
- ☑ Network of streets and routes
- ☑ Embedding sustainable transport
- ☑ Governance and travel planning
- ☑ Managing wider impacts

These have been developed through an understanding of national and local policy, best practice guidance and discussion with stakeholders.

These principles form the basis and structure of this Strategy.

Chapter Two provides more details of these principles with examples and case studies used to illustrate the benefits of the proposed approach.

Chapter Three sets out the detail of the Transport Strategy based upon these principles.

Throughout the Strategy, we have sought to make use of informed and directly relevant case studies to demonstrate precedents and examples of best practice – forming a detailed supporting evidence base. The Strategy covers transport both internal to Welborne and how it connects to the wider Fareham area – highlighting the importance of the existing A32 link as the main connection to the wider borough. This link and its interaction with both the site and the M27 is fundamental to the success of this Strategy.

A detailed study is currently being carried out to identify the various options proposed for improvements to Junction 10. A brief overview and description of the characteristics of each is set out in Chapter Three. The driver for these options is to ensure what is delivered is a viable solution for Welborne, the strategic road network and the wider Fareham area.

Alongside hard infrastructure and layout measures, is a suggested strategy for governance and travel planning, identifying an approach to implementing smarter choices and behavioural change measures to achieve optimum results. This focuses on the importance of influencing travel habits at an early stage in the development, identifying points of transition when change can be affected in travel behaviour most successfully.

This Transport Strategy has been prepared in tandem with the council's Concept Masterplan, which shows one way in which the Strategic Framework for Welborne can be delivered. Out of this Strategy, a detailed list of projects has been identified which has been taken forward in the council's infrastructure planning and viability evidence which supports the Plan. In addition, various policies within Chapter 7 of the Welborne Plan reflect the schemes set out here.

1.2 Policy guidance

Over the last decade, the thrust of national policy guidance on transport has advocated the need to pursue more sustainable transport outcomes for UK towns and cities to reduce transport impacts on the environment and improve people's quality of life. Most notable are the White Paper on Transport 2001 and the more recent Eddington and Stern Reviews of Transport in the context of UK economy and climate change respectively, many of these messages now form the basis of the National Planning Policy Framework (DCLG 2012).

The Department for Transport's 'Delivering a Sustainable Transport System' (DfT, 2008) provides policy guidance on the issue, and is linked into a funded programme of national and regional studies looking at how a more sustainable transport system can be achieved for particular areas and corridors over the next decade and beyond. Manual for Streets (2007) and the second volume of the Manual, Manual for Streets 2 (2010) further contribute to the issue of what constitutes a more sustainable transport system from a perspective of street layout and design.

The Design Manual for Roads and Bridges (DMRB) has been used to inform the design options for creating an all movements arrangement at Junction 10. The DMRB is a series of design standards and technical documents produced by the Highways Agency to set out how the strategic network should be designed and the requirements of infrastructure based on likely demand and location. The DMRB sets a 'standard of good practice' and was developed principally for trunk roads, however it is regularly applied by local highway authorities for the design of lower order routes.

The DfT's 'Building Sustainable Transport into New Developments (April 2008) provides further guidance on the 'sustainable transport' response to the national challenge of delivering an additional three million homes in the UK by 2020; and relates directly to the government's policy to deliver growth in nominated growth points. In contrast to traditional approaches, this document sets out how transport needs to be considered within the framework of wider settlement planning decisions, with the ethos of green travel embedded in the layout, design and management of new development both within and beyond the area in question.

Alongside funding growth point and the former eco-town initiatives across the country, the government has been actively pursuing best practice in smarter travel by funding case studies. Three 'Sustainable Travel Demonstration Towns' of Darlington, Peterborough and Worcester have completed five years of investment in smart measures including infrastructure, education and travel marketing.

They have all achieved an approximate 10% reduction in car journeys with associated uplifts in movement by other modes. This is a significant success and showcases what can be achieved through smarter choices. Yet what is also clear is that smart measures are not sufficient on their own to address more fundamental problems with unsustainable urban structure. The success of the sustainable travel towns has led to the recent Local Sustainable Transport Fund (LSTF) which seeks to deliver travel change through a package based approach to smarter choices and travel planning.

Despite a growing recognition of the need to consider transport in the context of wider decisions on settlement location, density, mix and form (Eco Towns Policy Guidance, 2007 and 2008), it would seem that transport strategies are often developed in response to a masterplan for a single development site or extension, leaving transport professionals in a situation where they are unable to influence the root cause of the transport demand problem, the spatial arrangement of land use that generates the demand in the first place.

This Strategy provides guidance on the fundamental urban structure of Welborne, in terms of development layout, quantum, mix and density, along with the more traditional transport strategy components. Where appropriate we have sought evidence from urban extensions and new communities across the UK, and used key lessons learned.

Approach and background

1.3 Review of previous work

A range of studies have been undertaken to assess aspects of the Welborne Community. These studies are summarised below:

Report title	Summary of content
South Hampshire Sub-Regional Study, North of Fareham SDA Initial Feasibility Study, Nov 2006	This study, commissioned by Partnership for Urban South Hampshire (PUSH), considered the feasibility of the South East Plan policy for the development of the North Fareham SDA. In transport terms, it identified existing capacity issues on the M27, and outlines three scenarios – maintaining existing motorway access; link road to Junction 11; or creation of an all movements Junction 10.
Setting Strategic Direction, North Fareham SDA, Dec 2007, MVA (for TfSH)	This document, commissioned by TfSH, considers the transport implications of the SDA in the context of other nearby developments at North Whiteley and North/North East Hedge End. It highlights that public transport links are critical, along with high levels of containment. It identifies links to Junction 11 as the preferred option for access to the SDA.
Fareham SDA Capacity Analysis Study, Jan 2009, David Lock Ass	This study examined the capacity of the SDA identified land to accommodate up to 10,000 dwellings and 121,000m^2 of employment. This study tested a number of development scenarios and concluded that the SDA would accommodate between 6,500 and 7,500 dwellings depending on the treatment of key constraints and the level of employment required.
A32 Realignment Options Identification, Jan 2009, Mott Gifford (for TfSH)	This report identifies options for the provision of a link road between A32 Wickham Road and M27 Junction 11 to provide SDA access. This concludes with a cost comparison of each of the options – ranging from £25m to £42m.
Fareham SDA A32 Realignment Options Sensitivity, Jan 2009, David Lock Ass.	A sensitivity appraisal commissioned on behalf of FBC of the Mott Gifford A32 realignment study. This considers each of the 7 options in relation to visual, environmental, land use and severance implications.
Fareham SDA Access Study, Feb 2009, Mott Gifford (for TfSH)	A study of the options for providing road access to the proposed SDA, focused on the options for Junctions 10 and 11. This identified a realigned A32 to Junction 11 with Junction 10 remaining unchanged in operation and a dedicated BRT running along the old A32 alignment.
M27 Interim Corridor Study, June 2010, Mott Gifford (for TfSH)	A study of the cumulative impact on the M27 corridor of the planned development in the South East Plan, focusing specifically on the North Fareham SDA, North/North East Hedge End SDA and North Whiteley. The study identifies a number of options to improve access to the motorway from North Fareham including a link road to Junction 11 and an all-movements operation at Junction 10, depending on the extent of the SDA employment land development.
Fareham SDA Infrastructure Funding Scoping Study, Feb 2011	A study and review of available funding sources for the provision of necessary infrastructure at the SDA with recommendations for how funding should be secured.
Fareham SDA Infrastructure Scoping Fact File Compendium	A fact file looking at the available funding sources for the provision of infrastructure with a review of the pros and cons of each mechanism or source.
Fareham SDA Infrastructure Funding, FBC Position Statement, April 2011	A statement outlining Fareham Borough Council's position regarding infrastructure funding for the SDA. Regarding transport infrastructure, there is recognition that the need for improved transport links is a priority and funding will need to come from a variety of sources – likely to be a combination of direct grant funding, developer contributions, and other mechanisms such as the Tax Increment Financing.
Transport Delivery Plan 2012-2026, Dec 2012, TfSH	This report identifies a set of transport schemes proposed for delivery up to 2026 across the South Hampshire strategic area. Included within this plan are the BRT route extensions and proposed links to the New Community.

Existing containment

Census Travel to Work data has been analysed to identify the travel patterns of existing Fareham residents. Table 1.1 below details the current 'containment' of trips within Fareham Borough and the distribution of work trips across the wider area.

Journey to work destination (2001 Census)	Total working population	Percentage
Fareham	25,120	47.5%
South Hampshire	24,828	46.9%
Wider Hampshire	614	1.2%
Wider South East Region	1,139	2.2%
London	551	1.0%
Rest of UK	637	1.2%
Total	**52,889**	

Table 1.1 Current 'containment' of trips within Fareham Borough

Almost 50% of the working population in Fareham work within the Borough, illustrating that high levels of containment already occur in the local area.

Wider issues

Our work on the wider Transport Strategy has been influenced by the existing strategic model of the South Hampshire area. The Sub-Regional Transport Model Suite (SRTM) has been developed on behalf of Transport for South Hampshire (TfSH). This model has been developed to provide a strategic overview of the transport network across South Hampshire in order to forecast changes in transport demand and test the impacts of land-use and transport policies.

In 2012, four runs were carried out on the Sub-Regional Transport Model in order to assess options regarding the access Strategy. These options included improvements to Junction 10 of the M27 and a link road from the development site to Junction 11 of the M27. The initial results from these runs informed the previous Transport Strategy issued in March 2013.

The 2012 SRTM runs showed that an all-movements operation at Junction 10 was an appropriate basis upon which to base future testing.

The headline results were as follows:

Junction 10 option

- Initial results for the strategic road network showed that an all moves Junction 10 option has benefits for the M27 by removing existing U-turning at Junction 11 freeing up capacity for development traffic.
- Initial results for the local road network showed that the Junction 10 option is unlikely to create a significant increase in traffic accessing the junction from the south through north Fareham.

Junction 11 option

- Initial results for the strategic road network showed that a Junction 11 option results in significant increase in delay on the M27 between Junction 11 and Junction 12.
- Results for the local road network showed some additional delay on the A27 and at the Kiln Road junction.
- A series of further runs have been commissioned since March 2013 examining different layout options for Junction 10 as well as variations in development scenarios. The results from these SRTM runs are detailed in Section 3.3.

Travel planning

There is substantial travel planning and smarter choices evidence, at both a strategic and local level, which indicates that a package of interventions will be essential for creating a sustainable and successful development at Welborne. The Sustainable Travel Towns Initiative found that car driver trips by residents reduced by approximately 10% as a result of a concerted area wide effort to deliver smarter travel choices.

In 2010, a review was undertaken of the 'Reduce' Strategy for South Hampshire, one of three overarching themes of the LTP (the others being 'Manage' and 'Invest'). The report contains some important messages about the scale and funding of smarter choices in relation to the 'Manage' and 'Invest' elements. The review concluded that the national budget for smarter choices across the wider South Hampshire area was adequate as set out at that time. Funding across South Hampshire was calculated at between £6-£9 per person per year, compared to £10 per person per year on average which was spent to deliver the Sustainable Travel Towns Initiative.

However, the report made clear that the above assertion was based on the assumption that supportive infrastructure and operations improvements are met from the 'Invest' and 'Manage' budgets. The report also recommended the programme be converted into a year-by-year implementation plan, with spending emphasis on the early years of the programme.

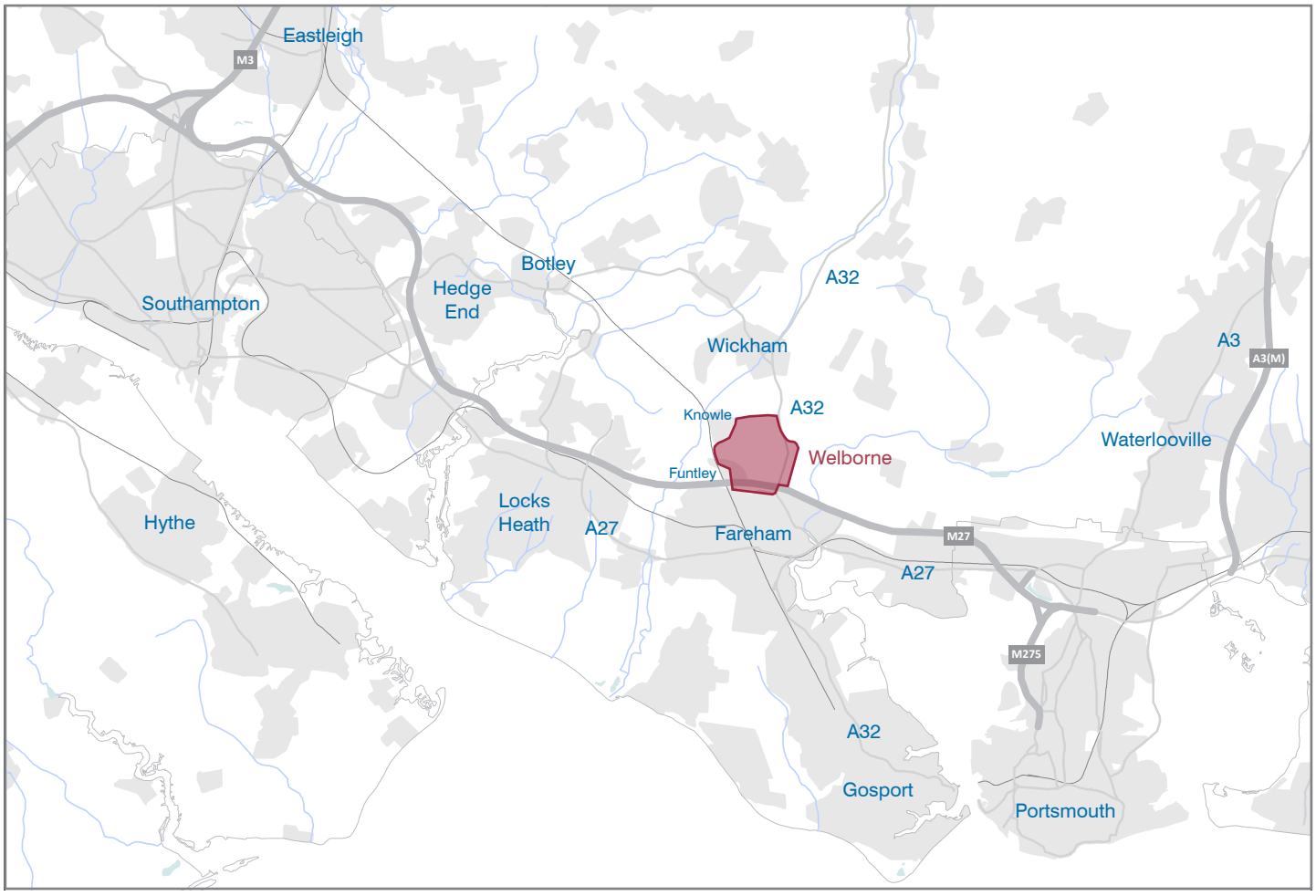
Approach and background

Strategic context

In the wider South Hampshire area the local authorities have been progressing the Local Transport Plan (2011-2031). Local Sustainable Transport Funding was successfully secured in 2011/2012 to deliver additional smarter choices packages over the next few years to 2015. This involves an 'integrated corridor' approach to encouraging behaviour change by linking employment and housing, with 15 key corridors identified including Fareham to Gosport, Fareham to Portsdown and Fareham to Southampton. Significant investment is taking place to assist sustainable travel, particularly by public transport along these LSTF corridors. Although these are being developed and implemented in the short term some years in advance of development at Welborne, their implementation will have implications for the Welborne community in the longer term. It is anticipated that between the Welborne community and Fareham town centre similar levels of sustainable travel measures will be introduced. It will be important for the Welborne strategy to be able to respond to these opportunities. For example by making smart ticketing and media available to future residents, by taking a 'whole journey' approach to trips within the sub-region and by ensuring any benefits or incentives offered through employer travel plan networks (e.g. at Daedalus in Gosport or Portsdown near Portsmouth) are understood by and are available to future residents.

At the local level, the North Fareham SDA Smarter Choices and Parking Strategy (ITP and Campbell Reith 2012) looked specifically at the strategy for Welborne. An area wide package of smarter choices was recommended to deliver a target of 51% car driver mode share by 2031, from an estimated baseline of 66% (2001 Census). To support this ambitious target, the study put forward an inter-related package of measures costed at £2.9m, with phased delivery against the expected development schedule. At the centre of this would be a Framework Travel Plan outlining the workplace, residential and school travel components.

This level of funding would fall within the estimate of costs in the 2010 'Reduce' review.



Context plan

2. Transport principles

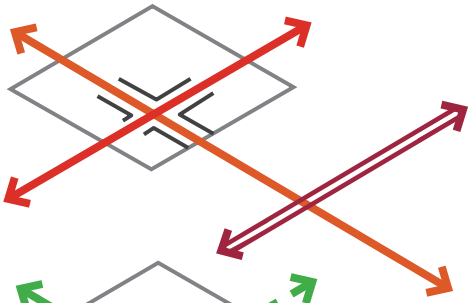
This chapter outlines the transport principles to be applied to Welborne. These have been developed through an understanding of national and local policy, best practice guidance and discussion with stakeholders.

1. Transport and land use integration

> Land use mix
> Local facilities
> Compactness

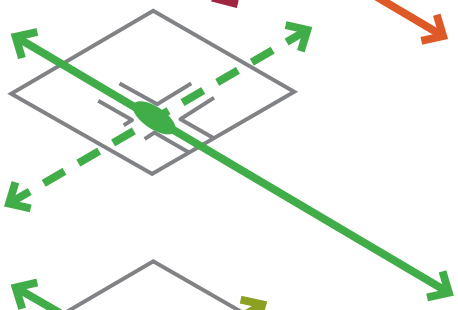
2. Network of streets and routes

> Directness
> Continuity
> Sharing space and placemaking



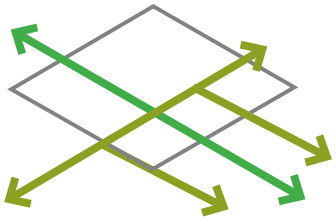
3. Embedding sustainable transport

> Walkable catchments
> Route penetration
> Wider walking and cycling links
> High quality facilities



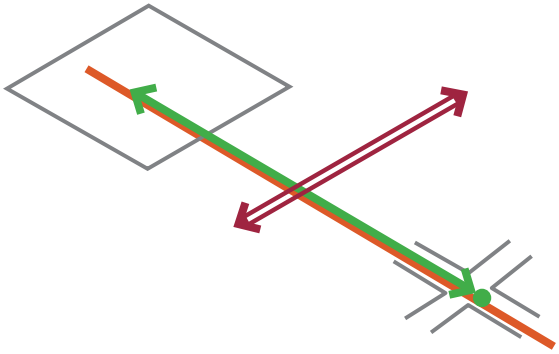
4. Governance and travel planning

> Travel choice
> Attractive transport
> High mode share
> Investment



5. Managing wider impacts

> Manage strategic access
> Manage key corridors



Transport principles

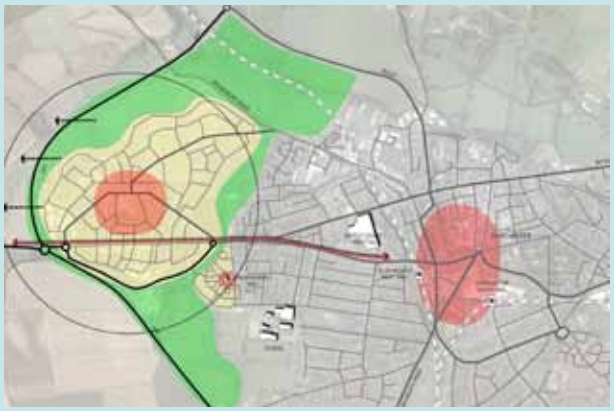
2.1 Transport and land use integration

Welborne will seek to optimise the type, size and distribution of land uses to encourage self-containment and create a genuine community. This approach will be fundamental to creating the conditions for more sustainable movement and minimising wider transport impacts.

Principle	Benefits
Provide a diverse mix of land uses within the community, through the alignment of population and employment levels to ensure a significant proportion of inhabitant's needs being accessible with the community and thus achieving a high degree of self containment.	Promote patterns of local living and working and reduce the need to travel.
Provide neighbourhood access to local retail, community facilities and recreational/leisure amenities all within 10 minutes walk.	Establish peoples propensity to use local facilities, and maximise opportunities for social and economic exchange. Encourage sustainable mode share and reduce travel distance.
Provide compact neighbourhoods.	Better support other land uses such as schools, health care and leisure activities and further benefiting travel containment.

Case study – Poundbury

The spatial planning of Poundbury has focused on creating a place where people can live and work through a rich mix of housing and employment types and the overall alignment of residential and employment populations. This approach has created a neighbourhood which is radically different from many of the large residential urban extensions delivered across the UK in recent years.



2.2 Network of street and routes

Traditional hierarchical transport networks have been proven to create problems for movement by all modes: cars all converge on busy connector and distributor roads; buses are unable to take direct routes; and cycling and walking is generally circuitous and illegible. Welborne will be served by a well considered hierarchy of streets, each serving multiple movement functions and fulfilling placemaking.

Principle	Benefits
Create direct streets and routes which link key land uses and higher order destinations, whilst balancing local and strategic access, structured through a highly connected and permeable street grid of appropriate size to suit each mode.	Making an efficient network for all transport modes to a range of destinations.
Ensure modal continuity on streets and routes allowing travel by various modes, on a continuous network for fast and slower modes, allowing varying degrees of prioritisation, to include strong links by various modes into Fareham, to encourage local linkage.	Fostering travel choice by each mode on continuous networks and appropriate hierarchy to suit the journey type.
Share street space through multi-modal design of streets and integration with place functions and ensure the nature of the road space reflects the urban form, hierarchy and local character.	Integrated streets where multiple transport functions are shared and designed with placemaking in mind.

Case study – Upton

Upton in Northampton showcases best practice in street network design, through the creation of permeable street network. The original plan for Upton envisaged a central spine road and roundabouts serving land parcels. The site subsequently underwent a Design Charette process by English Partnerships and the Prince's Foundation and the resulting masterplan creates a more balanced network of streets and public spaces. This permeable network has successfully created a high quality place providing for people and traffic movement needs.
(This case study is extracted from MfS).

Transport principles

2.3 Embedding sustainable transport

It is essential for sustainable transport to be 'designed in' to Welborne from the start with transport facilities and services available to the first residents. Sustainable transport measures will be central to the development by making public transport, cycling and walking preferable to the private car for the majority of trips.

Principle	Benefits
Ensure public transport routes and frequent services are able to penetrate the community.	Provide personal accessibility by sustainable transport and reducing car ownership and usage.
Ensure the population within a walkable catchment of public transport services is as high as possible, creating high degrees of urban compactness.	Maximise public transport demand, and therefore increase viability and quality of the service offered.
Ensure high quality facilities are provided in terms of vehicles, waiting environments and information.	Improve user experience and reduce car usage.
Provision of high quality cycling and walking facilities across the community to 'knit' the community into the wider Fareham and connect to New Community facilities such as the schools and district centre.	Maximise opportunities for personal mobility, health and wellbeing, whilst reducing vehicle demand.

Case study – Delft

An example of well thought out and comprehensive cycle network planning is Delft. The city of Delft in Holland was selected as a model for transport planning in the 1970s. In 1999, a Cycling Action Plan was devised based on a three-level hierarchy of cycle routes:

- 'Town' – main 'superhighway' routes to centres with heavy flows and a network density of 500m
- 'District' – links between strategic locations across network and joining up 'town' routes at a density of 200-300m
- 'Sub-district' – links between residential areas, often shared with pedestrians at a density of 100m.

The city has seen a 12% increase in daily cycle trips and an overall cycle mode share of 43%.

2.4 Governance and travel planning

To support Welborne, an appropriate governance arrangement will be implemented and a package of travel planning and management measures will be developed to ensure that opportunities for sustainable* movement are maximised:

*[Sustainable travel, in this context, is defined as walking, cycling, public transport and car sharing, but it also includes video and tele-conferencing and consolidated delivery].

Principle	Benefits
Ensure travel choices are flexible, integrated and activated from the first phases of the development.	Ensuring that early residents, employees and visitors naturally choose to travel less or by sustainable modes, establishing a long term pattern of behaviour.
Where travel is required, residents will find it easy and attractive to choose 'sustainable' travel.	To ensure long term environmental sustainability and reduce congestion.
Aim for a lower proportion of car trips and a significantly greater proportion of sustainable travel than has occurred in the wider Fareham area in the past.	Establishing an exemplar for the area and achieving more sustainable development.
Investment to deliver a Framework Travel Plan (FTP) and support its implementation.	Secure long term strategy, with funding secured to deliver it, through collaborative involvement of residents, employers, employees and schools who will participate in the structure and process.

2.5 Managing wider impacts

The development of such a large community will inevitably impact upon the wider transport networks. These impacts will be managed through the combination of sustainable transport measures and the mitigation of highway impacts, including traffic management, severance reduction, accessibility, road safety and bus priority measures.

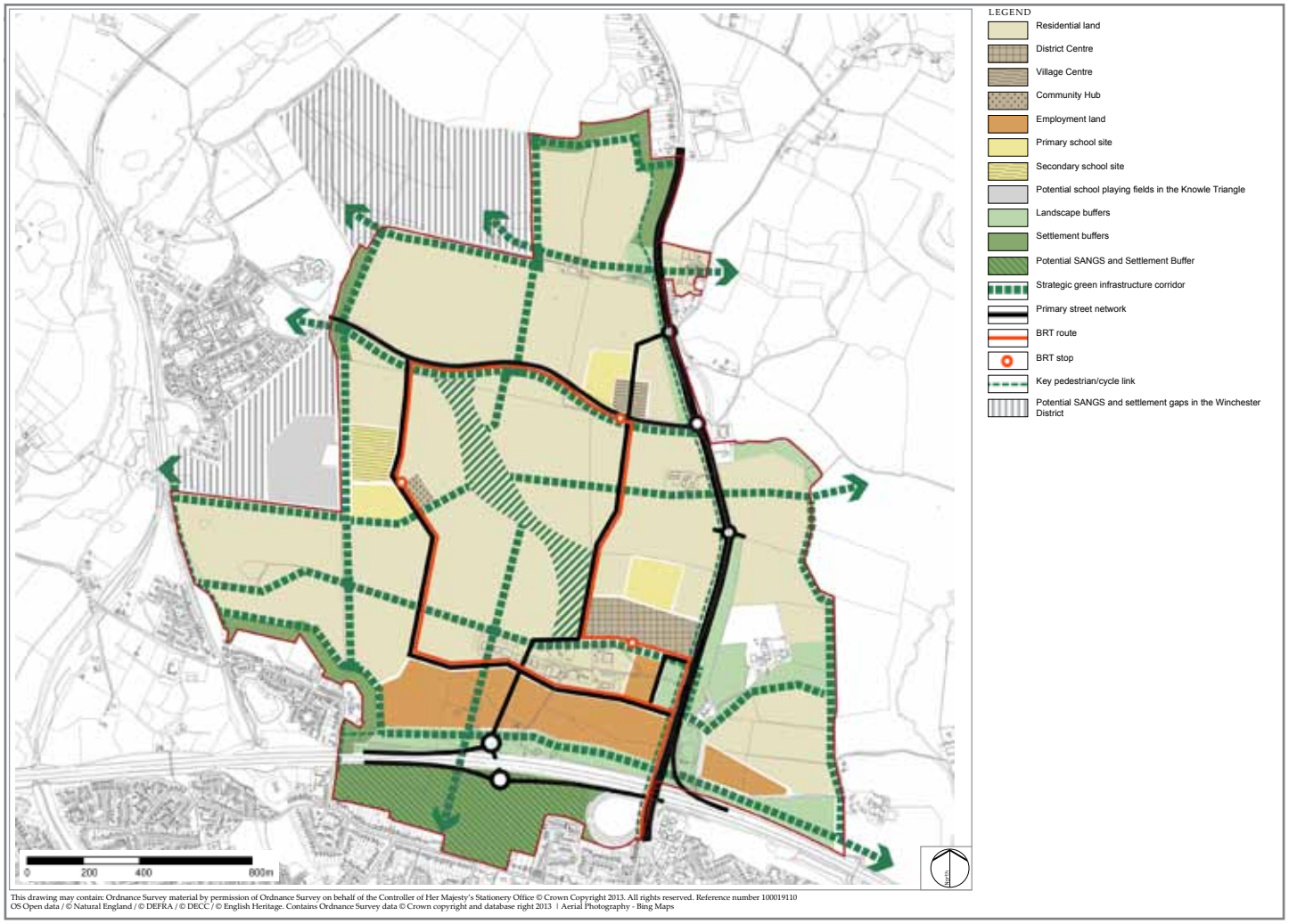
Principle	Benefits
Ensure that highways improvements are provided which prioritise bus and BRT movement to and through Fareham town centre.	To ensure conditions for existing public transport users are unaffected and promote sustainable transport.
Ensure that capacity enhancements are put in place to manage the impact of growth on the strategic road network	To ensure that appropriate accessibility and operation of the strategic road network is maintained.
Deliver traffic management and multi-modal corridor improvements on local roads in Fareham, particularly those into the town centre, such as A27 and A32 to manage impacts and provide local benefits where possible.	To ensure that the New Community does not have an adverse affect on the transport network within the local area.

3. Strategy

This chapter presents the Transport Strategy to support Welborne, building upon the principles outlined in previous chapters. This transport strategy has been closely aligned with the Concept Masterplan and provides a spatial strategy integral to the Strategic Framework prepared by LDA Design and Parsons Brinckerhoff.

The Vision for Welborne is for a significant proportion of the residents' needs being accessible within the new development. One of the early considerations was whether Welborne should be set apart from Fareham as a stand-alone settlement or whether it should be considered as an extension of urban Fareham. The conclusion was that it should be set apart, albeit with a strong physical connection via a sustainable transport route into Fareham.

3.1 Transport and land use integration



Strategic Framework for Welborne

Spatially Welborne will be structured around a series of neighbourhoods, focused on three distinct centres, each with a different purpose. The highest order centre will be the district centre and located near the A32 towards the south, serving the whole community. A further local centre will be provided to the north designed to serve the immediate neighbourhood, providing local shops, facilities, community and primary schooling. A community hub is also proposed to the west of the community adjacent to the proposed secondary school site. These centres will also provide a hub for transport services. The schedule below indicates the quantum of land use proposed.

Use	Area (ha)
Employment	22.56
Green infrastructure	107.23
Residential	172.9
Education	18.01
Community centres	6.6
Other	18.68
Total	**345.98**

Table 3.1 Proposed land budget

The majority of employment areas will be located on land in the southern part of Welborne, near the established employment area of Deans Farm and with a further smaller area on land east of the A32 close to Junction 10 of the M27. Further employment opportunities will be found at the district centre, and to some extent at the local centre. The employment areas will provide a mix of employment uses, providing for a range of jobs.

The community will be served by a secondary school located to the west of the site. Three further primary schools will also serve the community, generally one adjacent to the secondary school and the other two located near the district and local centres.

Land use mix

To support the sustainability of Welborne, the aim is to encourage high levels of self-containment.

Welborne will deliver a mix of land uses to ensure opportunities for local living and working are provided. Through the alignment of jobs and households, the growth will be delivered in a more sustainable way, through providing opportunities to minimise the need to travel, particularly when compared to housing only development. However, some residents will inevitably work elsewhere; this is evidenced by studying other places such as Kings Hill. An example of the research into levels of site self-containment is described below.

Case study – Parsons Brinckerhoff evidence at Kings Hill, Kent

Kings Hill in Kent is a mixed-use development with housing, employment, schooling, retail and community facilities on the same site. Many would imagine the site to achieve high containment, through complementary land uses to reduce the need to travel and promote sustainable modes. However for many journey purposes, and in particular the trip to work, the level of self-containment in Kings Hill is far lower than national averages derived from the National Travel Survey.

Results indicate that Kings Hill's residents travel considerably further to work than would be expected for a settlement of similar size and setting. Travel distances for non-food shopping and school journeys are also significantly higher than expected. The only exception is food-shopping journeys, which are significantly shorter than the norm. The influences of factors outside the masterplan itself – socio-economics, local and regional geography the type and availability of jobs – were analysed and contributed to the findings.

Given that some employment will leak to other places, site containment needs to be understood at three levels – Welborne, wider Fareham and the South Hampshire sub region. The resulting Transport Strategy needs to be mindful of this and provide sustainable transport links to employment areas within Fareham and wider travel opportunities on strategic networks (M27, rail and BRT) to other employment centres such as Portsmouth, Havant and Southampton.

The Strategy also needs to provide access to the new employment areas from surrounding residential neighbourhoods within wider Fareham and further afield.

Strategy

Local facilities

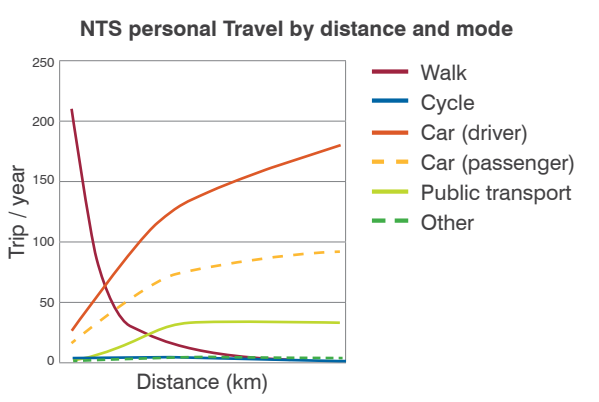
Welborne will provide neighbourhood access to local goods, retail, community facilities and recreational/leisure amenities all within a 10 minute walk or a short cycle ride. These centres have been planned to allow easy walk in access and will double as public transport hubs allowing BRT and local bus access for wider journeys. They will also provide a focus for transport hubs allowing access to transport information, pool cars and taxi.

Creating mixed use facilities and allowing public transport interchange are essential features of Transit Orientated Development and are active ingredients of good placemaking, through increasing people's propensity to use local facilities, and maximising opportunities for social and economic exchange.

Providing local facilities also reduces travel distances which has a positive effect on travel mode toward walking and cycling, as evidenced through observed travel behaviour (see DfT statistics below). The proper integration of local facilities is therefore a fundamental element for Welborne. Unlike employment, evidence from Kings Hill indicates that new development can be successful in capturing a high proportion of local retail and education trips.

Case study – Travel Trends

Evidence from the National Travel Survey shows a strong correlation between travel distance and travel mode. The graph shows how many trips of up to 1km are walk based. However, between 1 and 2km there is sharp increase in car usage. Once over 2km the vast majority of trips are car based, some public transport and a very small proportion are walking or cycle. These trends highlight the need to create quality alternatives to the car – creating great streets for walking and cycling, and rapid bus for town wide travel.



Compact neighbourhoods

A final spatial ingredient is the planning for compact neighbourhoods. This relates to the arrangement of centres in relation to housing and green infrastructure. If located to peripheral parts of the neighbourhood, green space can still be accessible, but pedestrian movement to and through neighbourhood centres is maximised.

Alongside this, the Green Infrastructure 'vision' will prioritise the open space network with the aim of all households being within 200m of a network of parks and open spaces that will extend to every part of Welborne.

Higher levels of urban compactness better support other land uses such as schools, health care and leisure activities – further benefiting travel containment through their accessible proximity in relation to catchment populations. The plan shows that the nodes for public transport coincide with the areas of highest compactness.

Parking

A parking strategy has been prepared for the Welborne community to guide the residential parking levels that should be provided. Car parking throughout Welborne will be provided in line with the Council's adopted Residential Parking Standards SPD[1], the emerging Non-residential Parking Standards SPD and the Welborne Design Guidance. The provision of parking will be regularly monitored and reviewed throughout the development of the project to ensure those standards are appropriate.

Cycle parking will be provided throughout the site for residents, employees and visitors in accordance with the same parking standards.

[1]Residential Car & Cycle Parking Standards Supplementary Planning Document, Adopted November 2009

Main streets hierarchy

Strategy

3.2 Hierarchy of streets and routes

Network

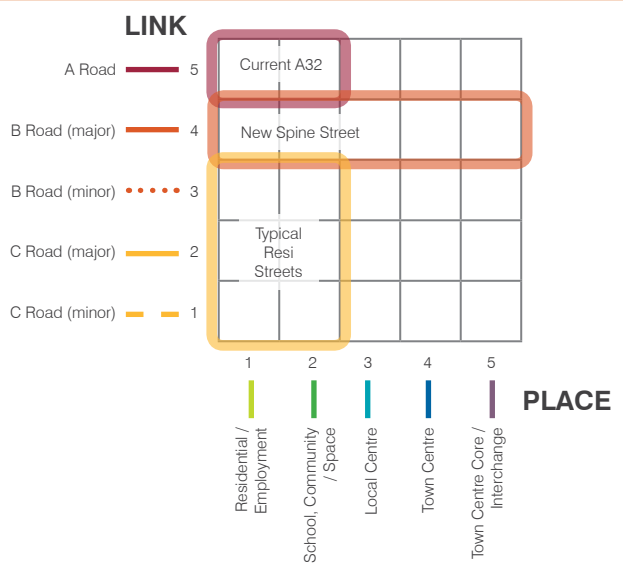
Fundamentally, the street network needs to create direct routes which link key land uses and higher order destinations, whilst balancing local and strategic access needs. As outlined in the previous section, Welborne seeks to contain trips at 3 scales in order of preference – within the development site, within wider Fareham, and finally within South Hampshire sub region.

To maximise containment, the Welborne is structured though a number of spine streets allowing direct multi-modal access to key land uses including the district, local centres, employment areas and all schools.

Link and Place (L+P) approach to street design

Transport function of streets is not the only consideration, street planning also needs to consider the 'place' – a mixture of character, adjoining land use and pedestrian intensity. Bringing together link and place functions through street design will be an essential tool for creating mixed use streets. L+P allows the competing and complex demands for all types of movement, land use needs and context to be considered and given due regard. The resulting street designs will be more fit for purpose.

The approach will form part of the developer Strategic Design Code and Design and Access Statement and ensure that planning decisions around street design, particularly those for more complex streets are transparent, accountable, and represent the best possible balance between movement and place.



The highest order road near Welborne is the M27 which runs east-west through the southern part of the site. This is intersected by the A32, which forms part of the County Strategic Road Network, which runs north-south though Welborne. Other existing roads in the area include Pook Lane, Knowle Road and Forest Road, however these are mainly cul-de-sacs only providing limited access, except Pook Lane which is continuous but a minor lane connecting to Nine Elms Lane to the east. For an area of its size, Welborne is unusually disconnected from routes meaning the A32 will form the main backbone of Welborne and provides for the majority of vehicle access requirements.

As described earlier, a network of spine roads will provide for primary access to the district centre, local centre and major employment uses. The spine streets will need to cater for mixed traffic including HGVs, general traffic volumes, public transport along with walking and cycling. Importantly, these spines will provide gateways into Welborne and its centres, and will be designed to a high 'place status' along with correcting moderate to high 'movement status'. This approach to mixed use streets was once common place to many of our towns, as many places are structured along busy main streets or avenues. The nature of spine streets is more fully described on the following pages.

Case study – Sherford

A similar street hierarchy to that proposed has been put forward in Sherford, Devon.

The planned new community, East of Plymouth at Sherford has been designed with a single mixed use main street at its heart, intersected with other main streets to distribute movement needs and structure the whole development. Importantly land use and density have been closely aligned with the larger more accessible streets, putting higher density and mixed land uses on the most accessible streets.

The spine streets will be structured in a 'box shape' using the Knowle Road as a component of the box. This will be linked back to the A32 at four locations (including Knowle Road/A32 junction). The box configuration has been planned for optimum movement around Welborne, linking all centres. This configuration allows a new north south route, meaning that users can move through the Community avoiding unnecessary travel on the A32. The new north-south route will run through the site, providing links to the local retail and community centre to the north of the site, joining the A32 at the Forest Lane junction.

A lower order network of minor roads and residential streets will be hung off the spine street network. A key principle of the approach is to ensure street continuity where each street type continues through the network. This requires careful consideration at junctions and crossing of larger streets. The street network illustrates the 'C' routes in yellow that are typically designed to provide for walking, cycle feeder routes and slower moving local traffic.

Orange spine roads are generally of moderate volume and speed and balance all movement types including a main public transport function and traffic spines. Where traffic function dominates, such as busy Strategic Roads with a high HGV volume, then single purpose roads are preferable. Where context determines that moderate trafficked Strategic Roads act as main streets, then mixed use street principles (outlined above) need to be employed to create an equitable arrangement of road space and land use and environmental protection.

Public transport spines will follow the main spine road network and thus penetrate through to the heart of the area where there is the highest levels of neighbourhood compactness to maximise service viability. This structure will allow the BRT to operate on a loop around Welborne serving all centres. It also allows for buses to operate on a similar loop or divert off the A32 onto the north south spine road (Forest Lane – District Centre). Further guidance on bus planning is provided in Section 3.4.

Strategy

The nature of spine streets

The spine streets will enable primary access within Welborne, delivering an important function in the street hierarchy described earlier, by providing access to key land uses, catering for mixed traffic with moderate demand and creating gateways and ultimately helping to deliver a high quality place.

The Spine Street Concept diagram shows an illustrative example of how the spine street network may be formed to the North East of Welborne. At network level, the spine streets will exhibit a number of properties:

- Provide primary means of movement to and from Welborne through a network of spine streets which form a strong urban structure, mirroring garden city principles. These will interconnect with the green corridors north-south and east-west which are fundamental to the Green Infrastructure plan.
- Form appropriate junctions with other types of road and street depending on the traffic demand and local context. Examples should include – roundabouts or traffic signal at junctions with higher order access roads, but simple priority junctions with more minor roads. In tune with principles in Link and Place, spine streets will respond to their context, particularly through neighbourhood centres.
- Spine streets will provide multiple connections with lower order streets and routes to maximise permeability for walking and cycling, including the use of measures where car traffic is restricted, but other modes are given freedom of movement.

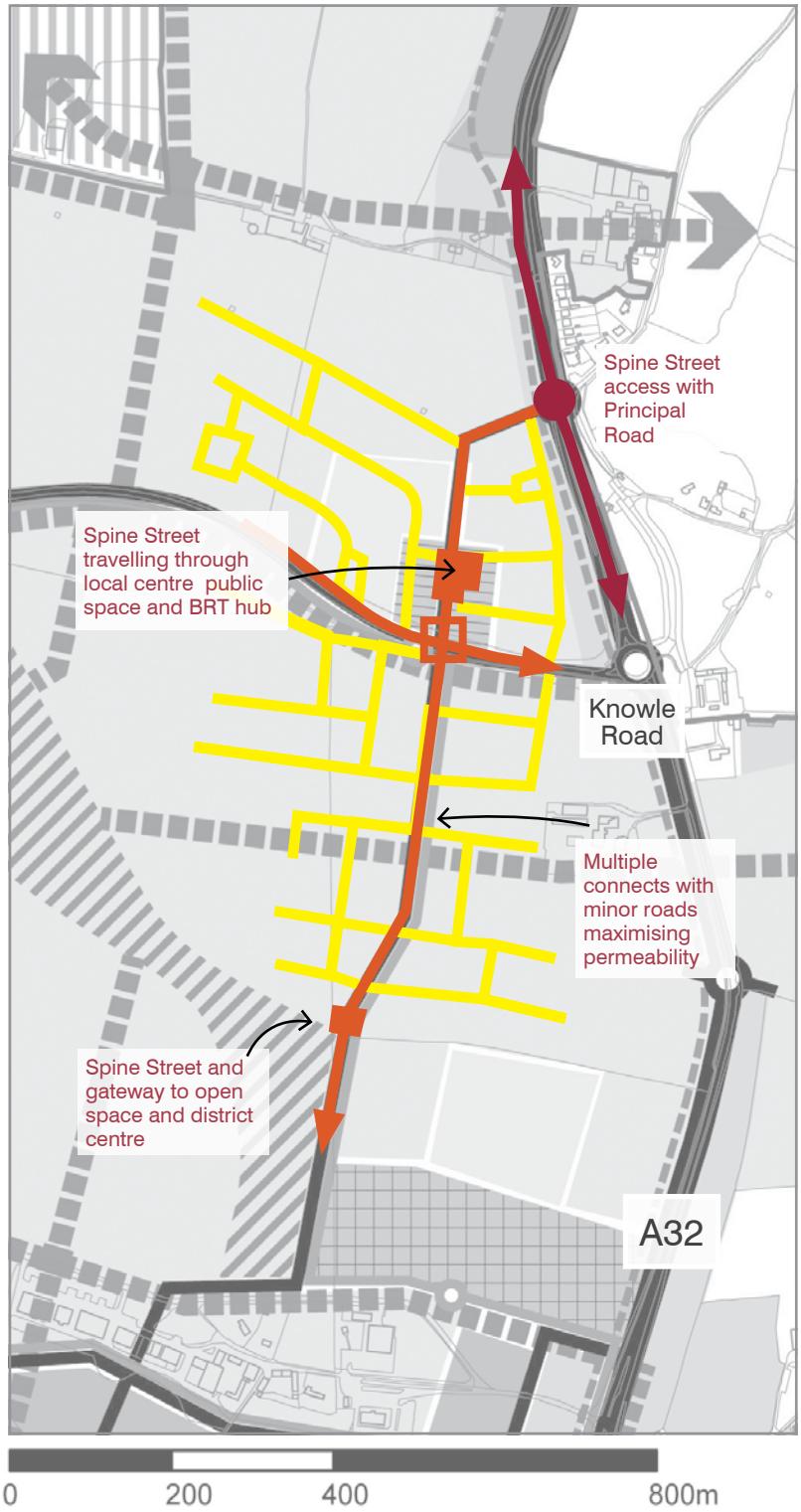
Spine streets will include the following design principles:

- Allowing mixed traffic with moderate flow at steady speeds, with priority given to BRT and local buses through a variety of bus priority measures.
- Ensure freedom of pedestrian movement through formal and informal pedestrian crossings.
- Ensure high quality design through design principles within MfS and MfS2, thus creating a more balanced street environment where built frontage, landscape and needs of people are given priority and balanced with the traffic functions.

Case study – Haslemere

A good example of active street frontage in a settlement of comparable size is Haslemere on the Hampshire/Surrey boarders.

Haslemere like many small towns is structured through a series of historic main streets converging on the centre. The 15k population of Haslemere is very similar to that of Welborne and this provides some evidence for the nature and size of main streets. The photo shows a single carriage street carrying mixed traffic at 30mph with HGV/bus movements parking bays, footways, and continuous frontage.



Spine street concept diagram

Strategy

A32 Transformation and local access

Currently the A32 is a critical part of the strategic road network with a 50mph speed limit, providing for interurban travel. The context for this section of the A32 will change and this chapter outlines some the network and street design principles, which will be employed to handle the changing context. The future A32 will adopt the following network principles:

Backbone – as Welborne straddles the A32, it follows that the A32 will form the backbone of Welborne in tune with current approaches to street design and urban planning. This approach is essential to ensure that land uses on the eastern side of A32 are properly integrated into the main community to the west side, and don't become islands of development, only accessible by car.

Street character and transition – the A32 will need to respond to the new urban edge created by the northern part of the Welborne, through a staged change in street character and traffic speed. Travelling south, the diagram shows development in the vicinity of the northern junction with Forest Lane will be mostly screened through structural landscaping, so the character will remain green and rural.

However, the new urban edge will be visible upon arrival at the Knowle Road roundabout and the gateway to the new urban environment.

A32 and the District Centre (Gateway) – the Strategic Framework diagram shows the District Centre adjacent to the junction between the A32 and the roads leading to the M27. In this location, the District Centre will be extremely visible and prominent, particularly for people travelling north along the A32 or arriving from the M27. It is therefore essential that the highway and junction design are integrated with the design for the District Centre to ensure a positive first impression of Welborne. An integrated design exercise will need to consider highways performance alongside urban design criteria, such as how buildings address the principal streets including scale, enclosure and overlooking, and how landscape features can be used to reflect the Vision and define the character of this part of the plan. As the District Centre is intended to serve the local community it is also essential that at-grade pedestrian access is maintained from all directions allowing convenient routes to the District Centre from all surround residential and commercial areas and green infrastructure connections.

Secondary street network integration – lateral movement needs across the road for pedestrians and cyclists will form important design requirements, particularly the section of A32 south of Knowle Road serving the new schools. The safe movement of street users will need to drive the whole design of this section.

Additionally, the delivery of a high quality urban environment, which has active frontage to improve street safety, provide street trees and public realm will all contribute to creating a successful street environment to integrate the eastern development into the main community.

Motorway interface and access – Welborne will provide for all movements at an upgraded Junction 10. The following section deals will the various junction options. All their options will create major change to the A32, particularly the section north of the motorway. Importantly, the A32 should retain its continuity, providing direct access to Fareham and Gosport, whilst allowing a degree of managed access to the higher order route, the M27.

This approach will link Welborne to Fareham, first and foremost, but also give the option of access to the motorway network.

The A32 transformation will need to include a number of design principles which draw on guidance from MfS2 and other best practice:

Highway capacity – the A32 will need some capacity enhancement to cater for increases in general traffic usage. Generally the A32 will remain as a single carriageway road, to the north of the new settlement but the southern section may need additional lanes to deal with demand. If this occurs, a boulevard treatment will be appropriate from the M27 northward. Traffic demand drops midway up the development as Welborne traffic diverts into the development. It should therefore be a design aim for the A32, to remain a single carriageway north of the intermediate Welborne access (south of the school) to better integrate eastern development including the school.

Junction spacing – spine street access from the A32, to Welborne will be formed at several locations. The diagram shows an illustrative arrangement for these connections. The regular spacing at 300 – 400m along the A32 with a rhythm of junctions will help slow traffic and significantly change the character of the road.

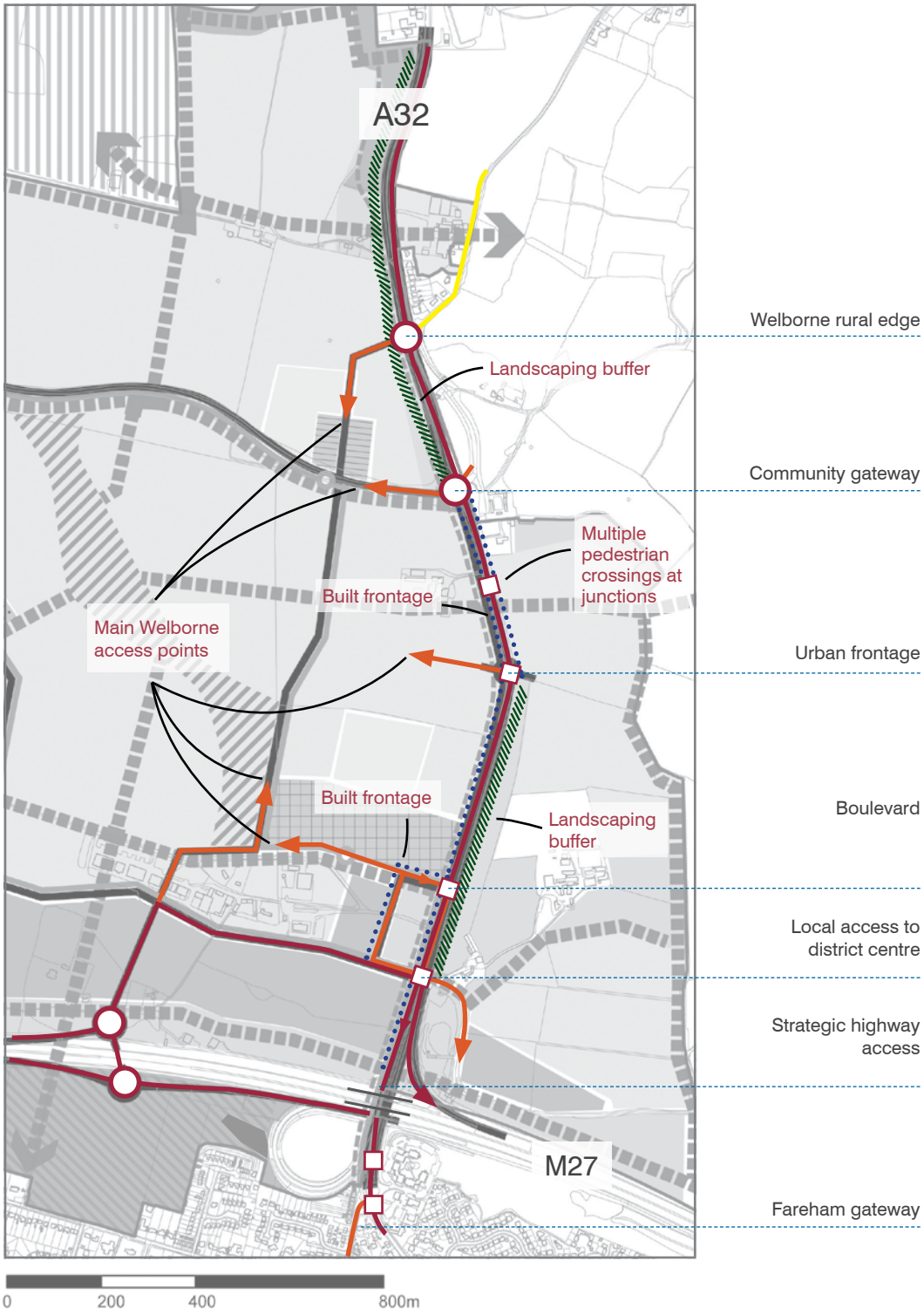
Development frontage – there will be a need to integrate development frontage and side roads into the layout. This will be achieved by a parallel street to the A32 (westside) allowing residential frontage and ensuring that side road provides continuous access and to allow turning heads to be avoided.

Walking and cycling routes – the A32 will provide high quality landscaped routes along both sides of the A32 with formal crossing points at main junctions.

Case Study – Upton A43 Frontage

The Upton case study described earlier provides an excellent example of how trunk road can be redesigned to better suit their context. Here on the A43, the street has been redesigned with a wide boulevard style pavement, street trees and a service road allowing new development frontage in the form a local retail centre. This arrangement will form the heart of a collections of urban extensions and capitalise on passing trade.

Strategy



A32 corridor

3.3 Strategic access

Securing a safe access to the strategic highway network is of key importance for Welborne. Junction 10 of the M27 provides access to the A32, which runs north through the site to Wickham, and south into Fareham. Junction 10 currently only allows access to and from the east. Following initial assessments it was identified that an all movements Junction 10 solution was likely to be a viable option.

Over the last 12 months, a number of options for an all movements junction have been tested using the Sub-Regional Transport Model, run by Transport for South Hampshire. These options have considered the scale of the junction, the most appropriate location for new slip roads, and how a larger junction would connect into the existing A32 corridor.

The modelling process is iterative with a number of model runs already processed examining different junction layouts and development scenarios. This iterative process has also taken into account changes in development quantum changes and variations in mode share assumptions.

Table 3.2 provides a breakdown of all modelling runs commissioned to date.

MVA Run Number	Description
1-4	Run 1 – 2031 Base no development Run 2 – 2031 Development with no mitigation Run 3 – 2031 Development with mitigation at Junction 11 and A32 link road Run 4 – 2031 Reduced scale development with mitigation at Junction 10
5	2036 FBC Gyratory option for Junction 10
6	2036 FBC Gyratory option with revised PT share and employment levels
6a	Timing for Junction 10 upgrade
7	2036 WSP 'Dumb bell' east-facing slips, underpass
7a	2036 WSP 'Dumb bell' east-facing slips with revised roundabout layouts
8a	2036 WSP 'Dumb bell' east facing slips with new westbound slip, underpass
8b	2036 WSP 'Dumb bell' east facing slips with additional capacity in underpass
9	2036 Halcrow all movements signal based layout proposal

Table 3.2 Breakdown of all modelling runs commissioned

The Transport Strategy issued in March 2013 identified a preferred option for the Junction 10 layout of a gyratory arrangement, making use of existing slip lanes and introducing new slip lanes to enable an all movements junction. This was tested in Runs 5 and 6 and is discussed as Option 1 overleaf.

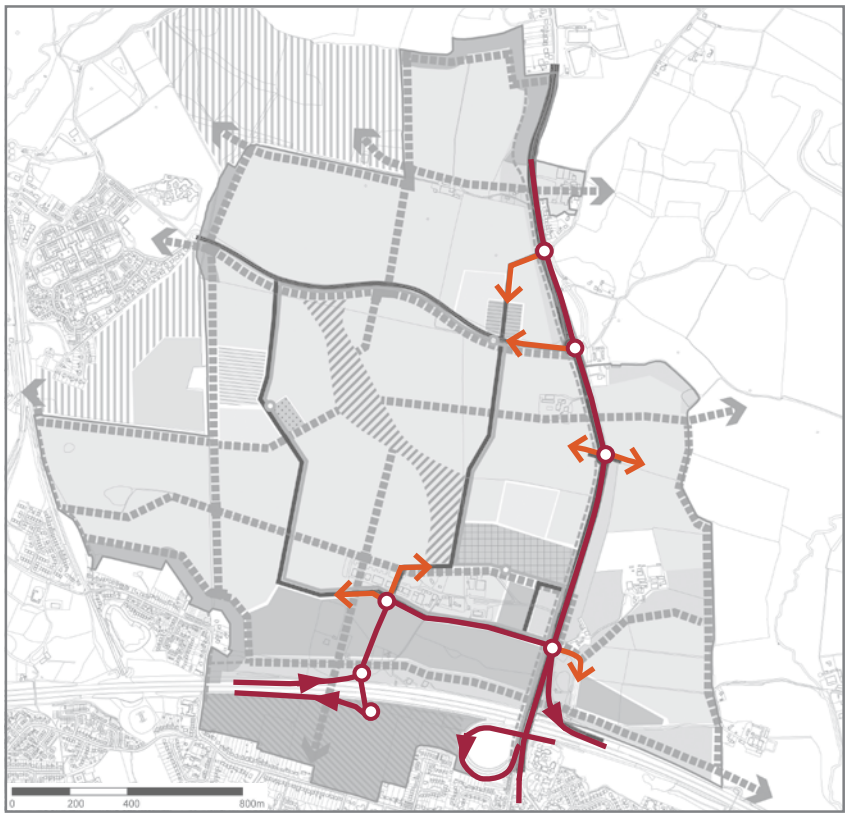
Subsequent discussions with stakeholders, landowners, the Highways Agency and the Highways Authority led to four potential junction layout options, based on model runs 6, 7a, 8b and 9, being explored further. As can be seen from the comparative assessment detailed later in the chapter, there is no one clear optimum layout with a series of pros and cons for each. It is therefore felt important to assess all of these junction options equally at this stage. Indicative layouts for these junctions are provided on the following pages.

Strategy

Option 1 – Runs 5 and 6

Option 1 – Runs 5 and 6

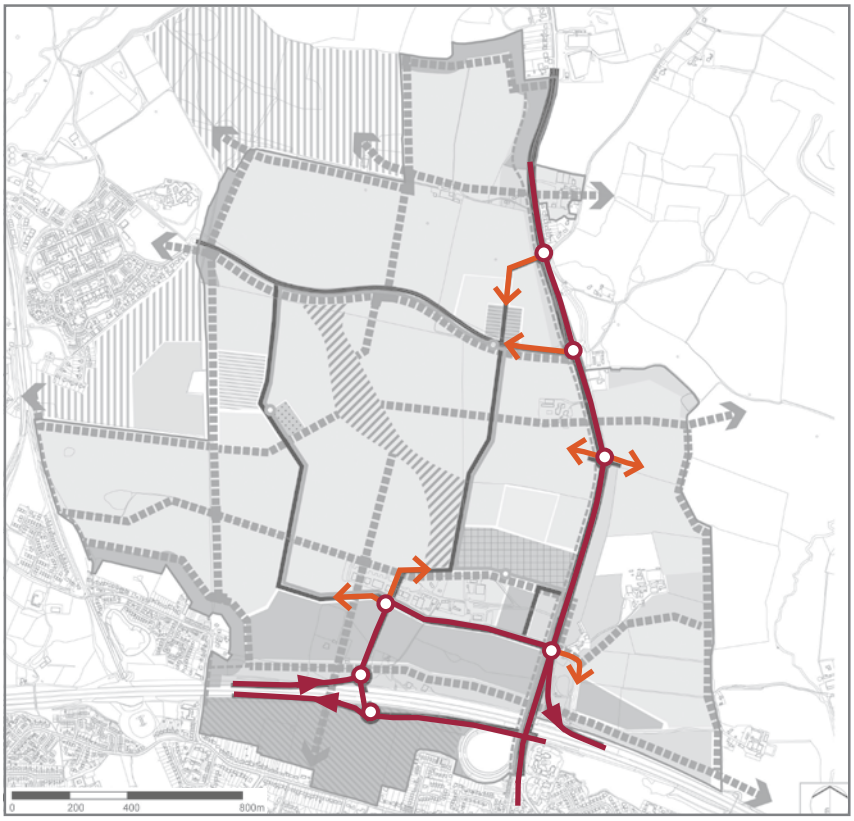
This option would provide a signalised gyratory to the north side of the M27. This arrangement accommodates all turning movements within a relatively small area whilst reducing turning conflicts through providing a one-way operation. A new westbound on-slip would be provided under the existing westbound off-slip, which would be retained.



Option 2 – Runs 7 and 7a

Option 2 – Runs 7 and 7a

This option proposes a more conventional motorway junction layout, with the provision of a new 'dumb bell' arrangement to the west of the A32 under the M27. This would provide new slip lanes to the west of the Welborne with a spine road running east-west to connect with the A32. This approach would dilute traffic in the A32 area, reducing the size of necessary junctions on the A32. It would require a new underpass to be constructed under the main M27 carriageway. This would again retain the existing westbound off-slip.



Option 3 – Runs 8a and 8b

Option 3 – Runs 8a and 8b

This option is a variation on the 'dumb bell' layout with an additional new westbound off-slip to replace the existing off-slip loop to the south of the motorway, which may help improve safety, which could be compromised by loading additional traffic onto the existing loop.

Option 4 – Run 9

Option 4 – Run 9

This arrangement is similar to Option 1, proposing a signalised junction solution with additional slip roads. A signalised junction is proposed to the north of the M27, adjacent to the A32, to accommodate the high demand turning movements. All traffic joining and leaving the motorway will be concentrated around the existing Junction 10 and A32 interchange. The junction would link to a new east-west spine road and eastbound off-slip to the west of Welborne. As with Option 1, a new westbound on-slip would be provided under the existing westbound off-slip, which would be retained.

Strategy

An initial comparative assessment has been made of these four shortlisted junction options in terms of forecast network performance as well as an examination of feasibility, local impacts and costs. A summary of this assessment for each option is provided below.

Option 1	Option 2
• Cost: £25.9m • Land take concentrated to the north • Reduced traffic flows through Welborne • Signal based solution allows pedestrian facilities • Traffic concentrated in A32 corridor may cause air quality and noise problems • HA concerns over capacity of junctions and safety of gyratory • HA concern over capacity and safety of additional traffic using existing westbound off-slip • HCC concerns regarding efficiency of signal-controlled junction in northwest corner • Third party land requirement to achieve eastbound off-slip • Has least impact upon existing underpass, providing an attractive route for pedestrians and cyclists • SRTM run shows network performing relatively well although congestion concerns on A32 and increased delay on the mainline motorway between junctions 9 and 10	• Cost: £30.0m • Land take at Fareham Common, reducing value as buffer and GI • North-south GI link using existing underpass is compromised • Higher traffic flows through Welborne community • E-W link road will require DMRB standards and generally larger roads through the site • Requires construction of new underpass under live motorway • HA concern over capacity and safety of additional traffic using existing westbound off-slip • Dumb-bell layout allows for more straightforward junction operation • Roundabout junction on A32 has urban design and pedestrian permeability implications • SRTM run shows network performing well, with some concerns regarding adding traffic to existing slip road
Option 3	**Option 4**
• Cost: £35.4m • Land take at Fareham Common reducing value as buffer and GI • Removal of existing westbound off-slip allows for potential streetscene improvements on A32 • Requires construction of new underpass under live motorway • As with Option 2, roundabout junction onto A32 has urban design and pedestrian permeability implications • As with Option 2, SRTM run shows network performing relatively well, although high levels of traffic through the Welborne site	• Cost: £26.2m • Avoidance of third party land through eastbound off-slip western location • Location of off-slip extends beyond plan area • New eastbound off-slip very close to Funtley village • New eastbound off-slip creates barrier to movement through the site and restricts access to existing underpass • High levels of traffic through signal controlled junction • HA concern over capacity and safety of additional traffic using existing westbound off-slip • SRTM run shows network performs relatively well although increased delay on the mainline motorway between Junctions 9 and 10

A comparison of traffic flows for the four options against a Do Minimum reference case has been made using the SRTM results. The general conclusions that have been drawn from this analysis for key locations on the local road network are shown in table 3.3 below.

Location	Traffic flow comparison between Options	
	General increase/ decrease in traffic flows	Options with highest increase/decrease from the Do Minimum
M27 Junction 9	Decrease	No significant difference between options
M27 Junction 10	Increase	Options 2 and 3 showing the highest increase
M27 Junction 11	Decrease	Options 2 and 3 showing the highest decrease
M27 Mainline Flows (J9-10)	Increase	Options 2 and 3 showing the highest increase
M27 Mainline Flows (J10-11)	Decrease	Options 1 and 4 showing the highest decrease
Kiln Road/North Hill/Park Lane/ Old Turnpike	Increase	Options 1 and 4 showing the highest increase
A32 Wickham Road (north of M27)	Decrease	Options 2 and 3 showing the highest decrease
A32 Wickham Road/Wallington Way (south of M27)	Increase	Options 2 and 3 showing the highest increase
A27/A32 Eastern Way/The Ave	Decrease	Options 1, 2 and 3 have the highest decrease

Table 3.3 Comparison of SRTM traffic flows between junction options

In general, increases in traffic are shown at the M27 Junction 10, and on the M27 to the west of Junction 10. This is likely to be a result of traffic using Junction 10 to access the motorway and Fareham rather than Junctions 9 and 11. Options 2 and 3 show the highest increase in demand at Junction 10 in comparison to the Do Minimum reference case.

At Kiln Road/North Hill and on the A32 at Wickham Road/ Wallington Way, there is a general increase in traffic flow. This is likely a result of more traffic using these routes to access the M27 Junction 10. The flow changes suggest that traffic may alternate between the A32, Park Lane and Old Turnpike to access Junction 10 from the south depending on which route presents the lowest delay.

Traffic generally decreases on the A27/A32 to the south of Fareham, which is likely to be a result of more traffic using Junction 10, rather than Junction 9. However, there is no significant difference between Options 1-3.

Traffic generally decreases on the A32 immediately north of the M27 which may be a result of traffic diverting through Welborne. Options 2 and 3 show the highest decreases on the A32 owing to their design which encourages more traffic to divert through Welborne.

As can be seen from the comparative assessment, and the results of the SRTM, there is no one definitive optimum solution and therefore all pros and cons need to be weighed up and considered carefully as the strategy develops for Junction 10. Section 3.6 identifies the key corridors and specific junctions where the Welborne development and an all movements Junction 10 are likely to have the most impact. Further more detailed analysis is required to identify the specific impacts on these corridors and junctions depending upon detailed designs for Junction 10.

In the meantime, the Strategic Framework diagram, Concept Masterplan and diagrams used within this Strategy Report have used Option 3 for the purposes of illustrating how Welborne can be delivered.

Strategy

Junction 10 interim improvements

As detailed in table 3.2, the SRTM has been used to determine when improvements are required at Junction 10, with or without the Welborne development in place. The modelling process has identified that the existing, partial moves Junction 10 would not provide sufficient additional network capacity to accommodate additional demand predicted to be generated from development at Welborne.

Model run 6a examined the impacts on the two existing Junction 10 slip roads. The results examined a merge analysis and a link performance of the slip roads at Junction 10 as well as the westbound on-slip at Junction 11.

The result of the assessment identified issues with a number of the slip lanes and mainline capacity of the motorway by 2019, well before the majority of the Welborne development will come forward.

The need for interim improvements will be considered alongside the identification of a preferred option for Junction 10.

Alongside physical infrastructure improvements required at Junctions 10 and possibly 11, the Highways Agency has announced proposals for introducing Smart Motorways on this section of the M27.

Smart Motorway schemes use technology to vary speed limits and lane availability according to driving conditions and relative demand. During busy periods speed limits can be reduced and the hard shoulder can be made available to running traffic.

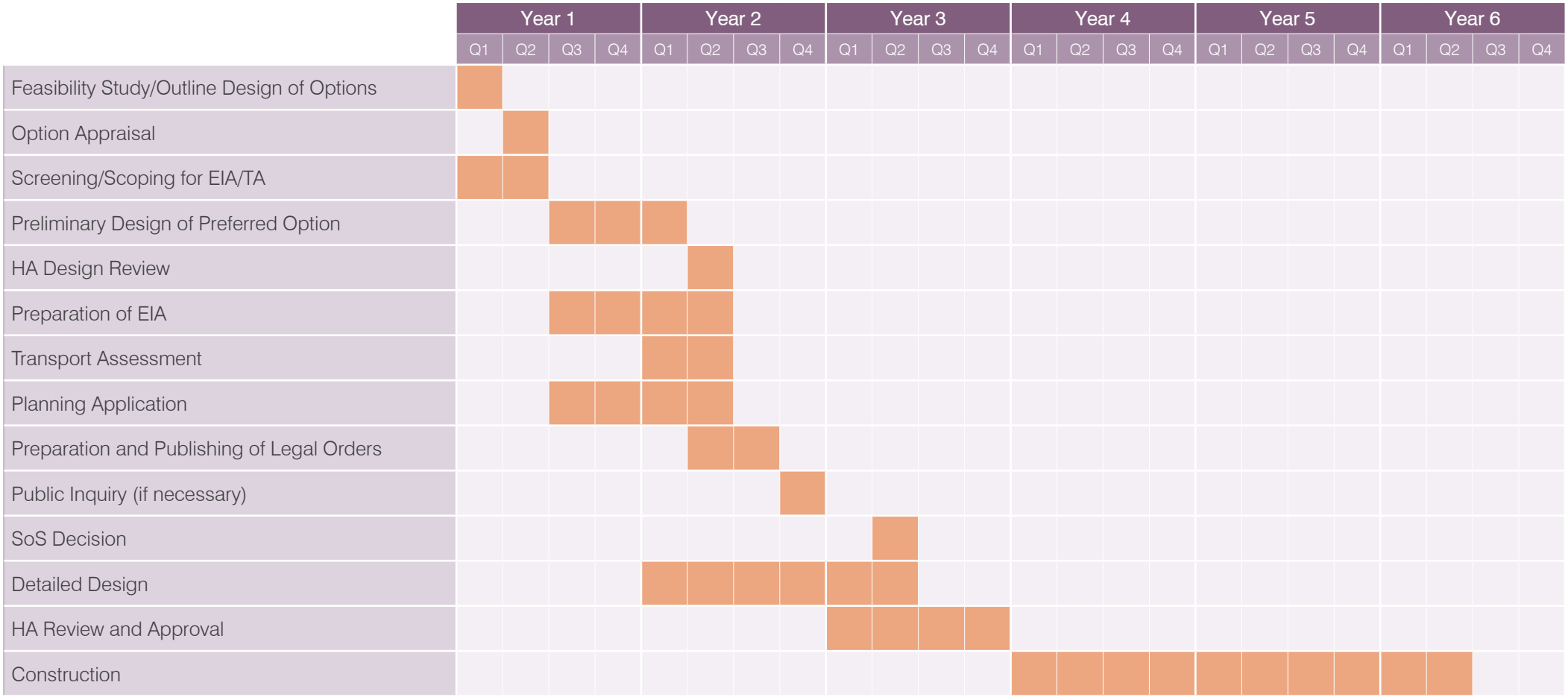
The approach is aimed at making more efficient use of the infrastructure in place to reduce the need to construct additional infrastructure.

It is considered that all of the proposals for improvements to Junctions 10 and possibly 11 can be implemented alongside and are compatible with a Smart Motorways scheme.

Timeline

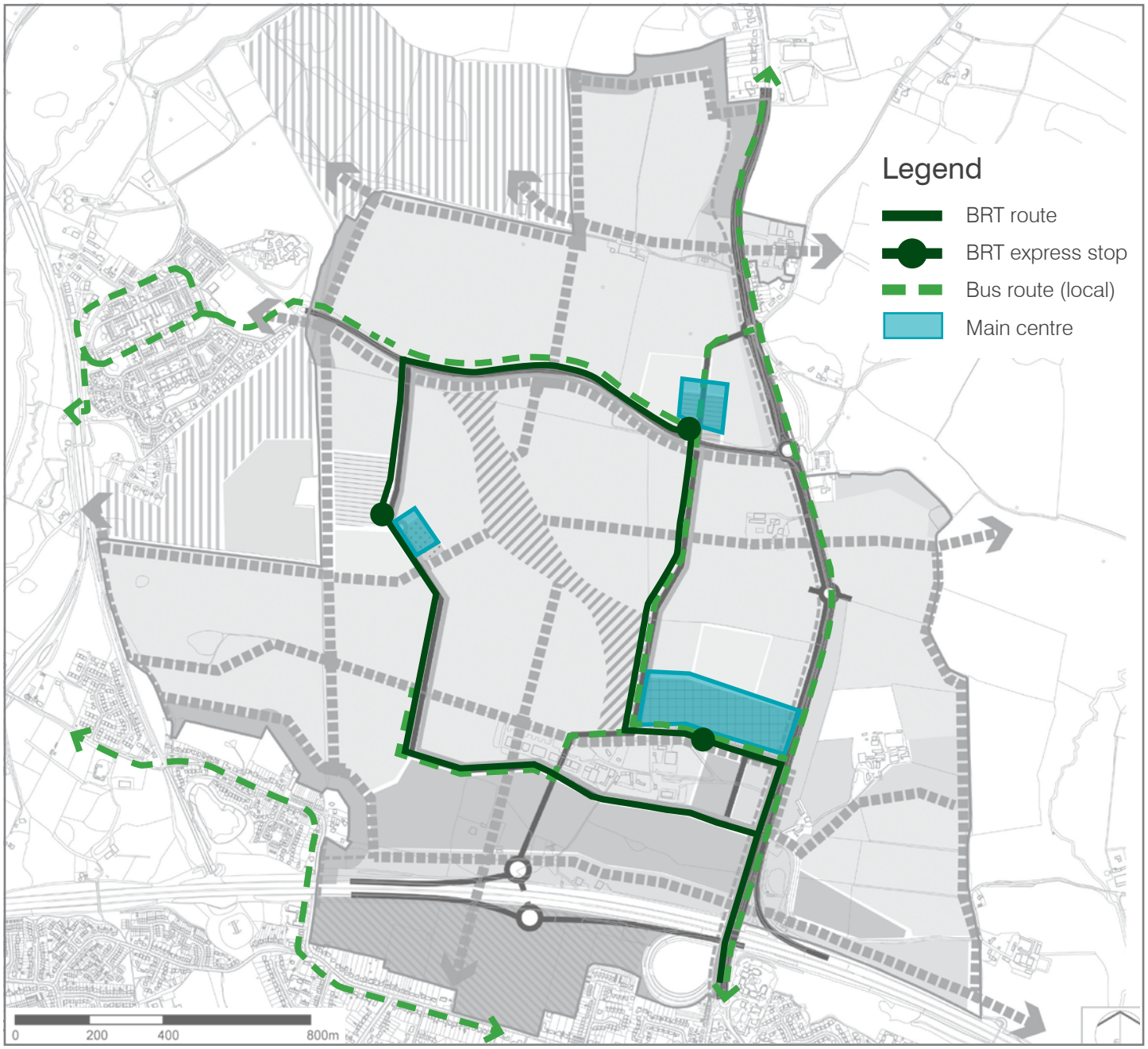
An indicative timeline has been devised to illustrate the potential programme for the development of an all movements Junction 10. A simplified version of this is provided overleaf – note it does not include provision of interim improvements. All options would have a comparable estimated programme.

Timeline


Year 1
Year 2
Year 3
Year 4
Year 5
Year 6
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
Feasibility Study/Outline Design of Options
Option Appraisal
Screening/Scoping for EIA/TA
Preliminary Design of Preferred Option
HA Design Review
Preparation of EIA
Transport Assessment
Planning Application
Preparation and Publishing of Legal Orders
Public Inquiry (if necessary)
SoS Decision
Detailed Design
HA Review and Approval
Construction

Strategy

3.4 Embedding sustainable transport



Public transport strategy

Public transport routes and catchments

Public transport will be integral to and directly connected into Welborne from the start with services available to the early residents, making public transport an attractive and viable alternative to the private car for many types of trips.

Welborne will be served by high quality public transport through connecting into the bus rapid transit (BRT) network and the wider Fareham bus network.

The BRT service will have just three stops providing access from the main district and local centres. The limited number of stops will ensure that the service can provide a competitive alternative to the private car in terms of travel time, meaning the BRT service is fundamental to the success of the development in sustainable transport terms.

Bringing public transport to the centre of the development, integrating stops with local and district centres, ensuring short direct walking routes to all land uses are non-negotiable elements of strategy. The majority of residents will be able to access a BRT route in less than 10 minute walk (800m) and local bus services with 5 minute walk (400m).

BRT nodes located at local centres will be concentrated around areas of higher density or urban compactness reflecting the relative accessibility of these areas.

The BRT service will operate at similar frequencies to the current Eclipse service – a 7-minute headway during peak periods. This will enable a journey time of approximately 10-15 minutes to Fareham Railway Station.

BRT routes will run within the primary road network, using the general traffic lanes with bus priority measures at key junctions, including interchange with the A32. As part of the ongoing design work for an all moves Junction 10 the potential to construct a bus lane along the A32 under the M27 will be considered with a continuation of bus priority measures where appropriate, between the M27 and Fareham town centre.

Alongside the BRT service, complementary local bus services will be provided and enhanced, particularly in the early stages of development. At the very early stage of development, Route 20, currently serving Knowle Village, will be upgraded and diverted through the site. Route 69 from Winchester could also provide a re-routed service through the site. Any such improvements and diversions would require an initial subsidy or approximately £120k per year.

As the development grows, the potential for additional bus routes to complement the BRT link will be explored which would serve the Spine Street through the site along with western areas providing connections to the BRT.

The wider bus network would be provided through a combination of developer contributions and bus operator investment.

Example of German bus integration into town square

Strategy

High quality facilities

The future planning and design of streets and access will need to ensure BRT and bus routes are prioritised across the development over car traffic to maximise the benefits of using public transport. In practice this will mean a combination of bus routes, bus lanes and other forms of bus priority on spine streets.

Eclipse BRT

The Eclipse BRT service runs between Fareham and Gosport providing a frequent rapid bus link, with sections of the route along dedicated busway. The service provides a 7-minute headway during peak periods. Since commencing operation in April 2012, patronage has increased by 64% on new routes E1 and E2 compared with the equivalent routes replaced. Over the Gosport peninsula as a whole, there has been a 12% general increase in bus use. Buses are, on average, 57% full.

Walking and cycling networks

Welborne will deliver clear and legible cycle and walk routes throughout the community. The Green Infrastructure Strategy, being developed alongside this Transport Strategy, details a network of green corridors and pedestrian, cycle and bridleway routes through the site. This Strategy reflects this network of routes. The overarching 'vision' for Welborne is that it will derive its character and identity from the land and countryside surrounding it, bringing everyone in the community closer to nature. The Green Infrastructure Strategy and the proposed network of walking and cycle routes reflect the vision by prioritising these routes in the development of the Concept Masterplan and Strategic Framework.

These will provide connections between local centres as well as providing access to the schools, and nearby communities of Wickham, Funtley and Knowle. A direct cycle link will also be provided north-south through the site to link Wickham with Fareham town centre. Options for this route are currently being developed by Hampshire County Council along with a potential link to the Whiteley development, providing links between employment and residential developments to the north of the M27.

The primary cycle and walking network will be spaced on a 400m grid. To ensure a high quality cycle experience, the primary route network will be segregated from general traffic, through a mixture of measures. The strategic network will provide continuity, ensuring bike routes are continuous as possible.

A secondary network of feeder routes may also be added where necessary, and generally include minor roads where dedicated cycle facilities do not need to be provided. In general segregated routes will only desirable in some situations but are no substitute for streets that are safe to cycles. The development should therefore seek to incorporate cycle safe streets in an attempt to reduce dedicated infrastructure.

Existing features such as the green corridor through the site provide excellent opportunities to develop high quality green infrastructure for both walking and cycling, and for both leisure and direct travel. These existing features are capitalised upon through the Green Infrastructure Strategy to develop a network of routes across the site. Guidance on delivering pedestrian and cycle friendly routes will be included in the Strategic Design Guidance or Design Codes for the development.

Creating quality walking environments

In addition to the strategic network discussed above, the Welborne Community will have a convenient and prominent pedestrian environment in terms of signage, lighting and gradients. Safety from traffic will be ensured by effective traffic calming and street design principles outlined in the Manual for Streets (MfS) and MfS2, which presents pedestrians at the top of the user hierarchy.

The local pattern of footpaths will create high permeability – a choice of routes filtering through the whole area, creating a fine grain network. Routes from homes to local facilities, especially shops, schools and bus stops, should be as direct and pleasant as possible, avoiding steep slopes or steps/kerbs where possible, longer-distance walks (to the local centre, Wickham, Fareham or for recreation) should be facilitated by a strategic network.

Creating quality cycling environments

Safety will be a prime driver for the design of cycle routes, including provision of segregated facilities where there is conflict with vehicles, particularly at junctions.

Cycle comfort and amenity will be achieved through giving attention to gradients and surfaces, also the design of adjacent buildings and ensuring routes are attractive and well maintained and free from noise, fumes and turbulence of speeding traffic.

It is recognised that cyclists have a variety of needs, depending upon the nature of their journey and destination. Cycling proposals for Welborne will need to cater for commuter, on-road and leisure routes.

Case study – Southampton Eastern Cycle Highway

A local example of cycle route enhancements is in Southampton.

Southampton City Council is seeking to implement an eastern cycle route connecting Hedge End and Botley with Southampton Central Station.

The scheme will use a combination of on-carriageway lanes, dedicated cycleways, shared footway/cycleways and Toucan crossings to create a direct route from the east into the city centre, avoiding key junctions.

The route is inspired by Dutch-style cycle ways and will be a new branded route, similar to the London cycle superhighway routes.

The route has recently consulted upon with construction due to commence in late 2013.

Strategy

Other complementary elements

Transport Hubs will be provided at each centre and other key land uses. These hubs will provide secure cycling parking to increase opportunities to cycle in combination with public transport and car sharing.

Strategic walking/cycle links

The presence of the motorway immediately to the south of Welborne creates a significant severance issue for cycle and walk links with limited opportunities to cross the motorway. It is proposed that all existing connections will be improved and enhanced to allow shared access.

The aim is to maximise the use of the existing routes over and under the M27 to reduce the reliance upon the A32 underpass. However, the existing route under the M27 at Junction 10, whilst being improved for highways and public transport access, will also be required to enable safe cycle and pedestrian links.

Cycle links

Cycle routes to Fareham town centre and railway station will make use of existing connections to provide a direct link north-south through Welborne up to Wickham. This mainly off-road route will enable existing and future residents to connect with rail services to wider Hampshire from Fareham Railway Station. The existing routes over and under the M27 provide the opportunity to deliver a range of options for routes into Fareham encouraging cycling and walking through providing attractive routes to a range of destinations.

Enhancements to cycle facilities at Fareham Railway Station will be secured including cycle parking, and secure locker facilities.

A range of links and proposals are detailed below, aimed at providing for the varying needs of casual, leisure and commuter cyclists.

The existing green infrastructure around the edge of the development will be integrated and enhanced to ensure connectivity around all boundaries for walking and cycling, as indicated in the Strategic Framework.

Most importantly, the new secondary school must be well connected to the cycle and walk network as it will have a large catchment covering north Fareham, Funtley and Knowle. Sustainable travel to the school for pupils and teachers must be available and promoted as key travel modes.

Until the new school is provided on site, the nearest secondary school will be Henry Cort Community College. A number of key cycle links will ensure access to the college from Welborne.

Key cycle links identified for Welborne are:

1. **Mayles Lane** – currently provides links a right of way between Funtley Lane and Knowle, and to the north to Wickham. The section of Mayles Lane between Funtley Lane and Knowle is private and subject to restricted access. A bus gate is in operation where Mayles Lane reaches Knowle village to prevent through vehicular traffic.

   However, it remains a right of way for pedestrians and cyclists and provides a bus only connection between the three villages. Importantly, Mayles Lane provides a crossing point for the railway. It is proposed that cycle and pedestrian routes to the west of the site will tie in to Mayles Lane.

2. **Titchfield Lane** – located to the west of the site, connecting to Funtley Lane, this provides links to the north and Wickham via an existing country lane. There is scope to provide segregated cycle/footway along some sections of Titchfield Lane where there are currently wide verges, particularly on the eastern side of the carriageway.

3. **Pook Lane east** – this country lane currently provides links to the east and on to Junction 11 of the motorway. Although Pook Lane will provide direct vehicular access to the employment land on the eastern side of the A32, it is not suitable for significant increases in vehicular traffic due to its rural nature. Therefore the option of closing this road to through traffic while ensuring adequate access to existing premises will be considered. It will still provide a through link for pedestrians, cyclists and horse-riders.

4. **Pook Lane and south over motorway** – Pook Lane provides a connection to a footbridge over the motorway immediately to the south east of the site which will provide a key pedestrian and cycle link from north Fareham to Welborne. The development of the land in the southeast of the Welborne site will provide the opportunity to deliver additional links to the bridge.

5. **Forest Lane** – provides a link to the northeast of the site along a rural country lane. Forest Lane ultimately connects up to the B2177 which links down to north Portsmouth.

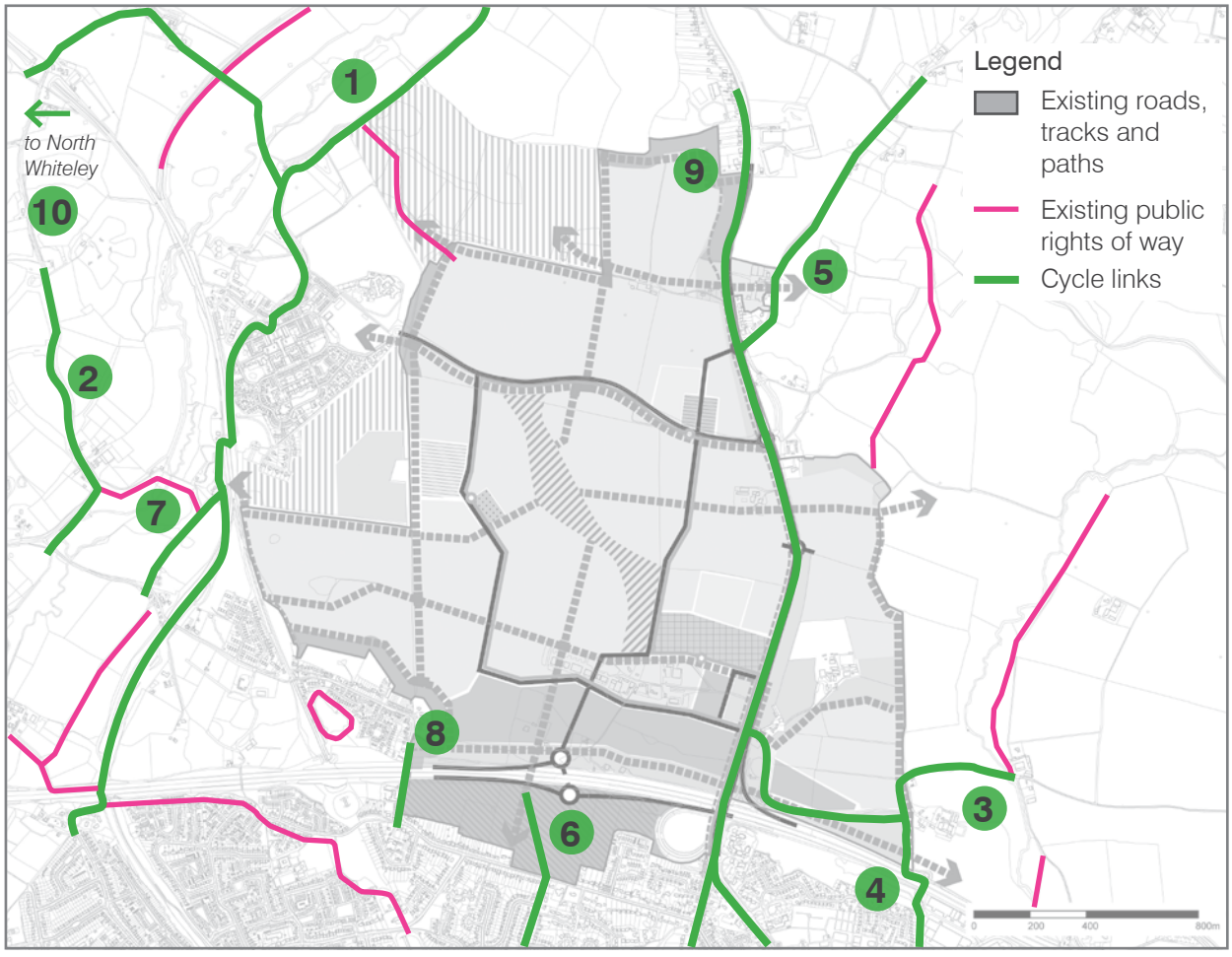
6. **Kiln Road link under motorway** – a motorway underpass currently provides access for a number of properties to the north of the M27. This can be used to deliver a key pedestrian and cycle link from Welborne to Fareham. There is the potential for this link to cross Fareham Common and meet Kiln Road opposite Maylings Farm Road, offering a wider choice of routes on to Fareham town centre. The relationship this link has with existing residential properties will need to be considered.

7. **Disused Railway** – now a bridleway, runs south west from Knowle providing a walk/cycle route under the motorway to north Fareham. The surface treatment may need investment to ensure it provides an attractive link to Henry Cort School in north Fareham. The route provides an opportunity to link to the Meon Valley Trail.

8. **Funtley Road/Funtley Hill** – a further key motorway crossing point, this link will provide a cycle and walk route from the southwest of the site to Henry Cort School in north Fareham.

9. **Fareham to Wickham** – Hampshire County Council is developing proposals for a cycle link between Fareham and Wickham, also linking into Knowle. Any proposals for Welborne will look to incorporate and contribute to this link through provision of appropriate cycle lane infrastructure along the A32 corridor where possible and improvements to links south of the M27.

10. **Welborne to Whiteley** – Hampshire County Council is exploring opportunities to develop a cycle link between Welborne and the Whiteley development. This would make use of the rural lanes and existing rail overbridges to provide a low traffic link between the two sites for casual, leisure and commuter cyclists. Links 1, 2 and 7 should explore the potential for linking to this route.



Walking and cycling plan

Strategy

3.5 Governance and travel planning

The emerging strategy for governance and travel planning is based on the following principles:

- A vision and funding for the long term
- Early implementation so as to catch new residents/employees at 'transition points'
- Flexibility of delivery, with residents and future users able to participate in and tailor measures to suit
- Co-ordination with efforts in the wider area, to maximise benefits. There will be an on-going role for the local authorities to work with the Welborne community to support measures.

The **Framework Travel Plan (FTP)** will be the central mechanism for a long term, consistent, smarter choices strategy. This will include ambitious, overarching objectives, targets, measures, monitoring and review procedures. The diagram below illustrates the various 'layers' of the FTP, building on the infrastructure provided. The FTP will have associated funding and could be supported by a Strategic Travel Plan Co-ordinator (STPC). Measures (services and facilities) will form the heart of the FTP and will need to be widely promoted.

Key measures are likely to include:

- Multi-modal smart ticketing
- Travel information and marketing (various channels, possibly including a travel information centre within a community facility within the development)
- Real time information boards, delivered in partnership with the transport operators.
- Promotion of smarter working practices (in partnership with the employers)
- Personalised travel planning
- Promotions and events – e.g. 'bike to work' week
- Public transport marketing and branding of services
- Car club scheme – e.g. a community based group with vehicles and allocated parking
- Car share scheme (including local car share group for residents to join)
- Electric vehicle charging points
- Monitoring surveys

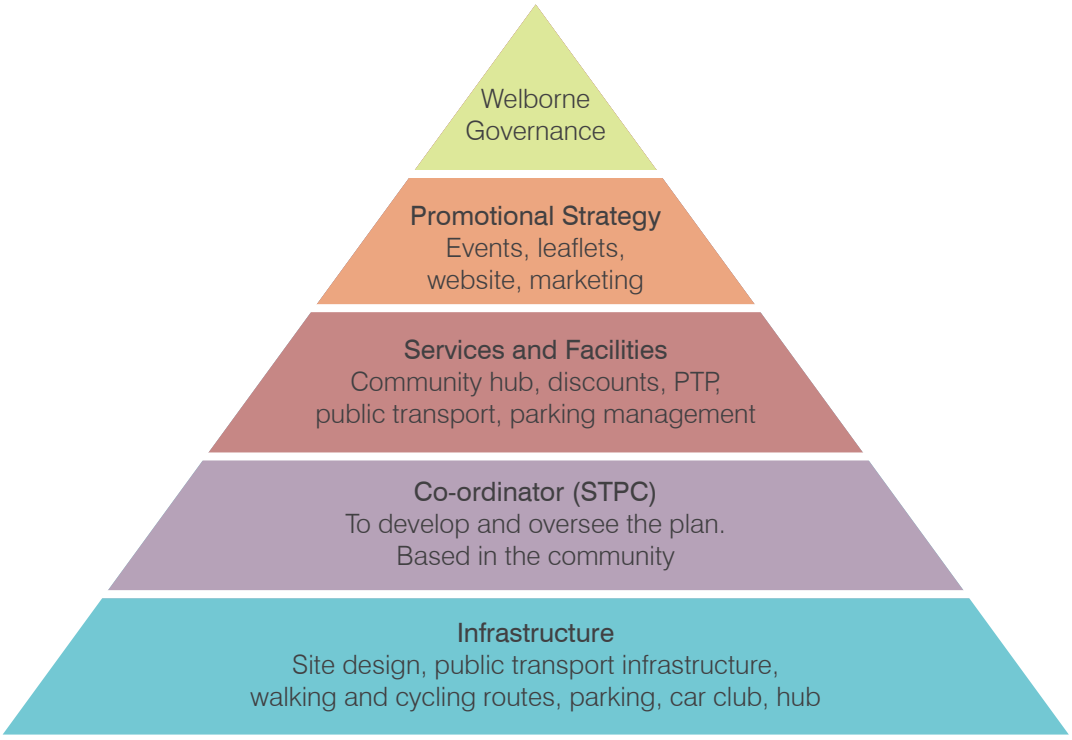


Figure 1: Framework Travel Plan pyramid

The Framework Travel Plan will be developed in partnership between developers, local authorities, existing residents, community groups and transport operators as part of the proposals that emerge for Welborne. It should be consistent with the proposals emerging to improve transport in the wider area, supporting the schemes being delivered through the Fareham Transport Town Access Plan (e.g. the local footway, cycleway and public transport improvements being planned). The aim will be to ensure a complete 'whole journey' approach to accessibility in the community (e.g. from the Welborne community and surrounding areas to Fareham town centre, Fareham Railway Station, etc).

To oversee the implementation of the Framework Travel Plan, it is recommended that a Strategic Travel Plan Co-ordinator (STPC) is in place from the beginning of the development, funded by developer contributions for an initial period. The Sustainable Travel Towns Initiative was resourced by 1 FTE staff for every 15,000 residents.

The added value that a STPC brings to the process is a focal point for travel planning in the community, providing essential management and co-ordination activities. The STPC would oversee measures, the spending of resources, identify and secure further funding and negotiate on behalf of the residents and site users. The STPC would be responsible for monitoring future travel patterns to and from Welborne and ensuring continued efforts are made to encourage sustainable travel. The person required will need to have sufficient gravitas to facilitate effective partnerships between different interests and authority to secure funding and manage delivery. To ensure a good calibre of individual, it is important that long term funding is found to support this post over a period of 5-10 years as the development is built out.

Site Specific Travel Plans will be developed by schools and employers locating on the site. A residential travel plan will be developed and implemented by the STPC. As individual developments come forward, these Site Specific Travel Plans will be consistent with the Framework Travel Plan. Future schools and employers will be required to develop and maintain their travel plan, ensuring certain measures are in place. Travel plans will need to cover the detail of how the users of the site will be encouraged to reduce the need to travel and, where travel is involved, ensure it is done sustainably. For example, the detail might include the on-site facilities (e.g. cycle parking, showers, etc) and management arrangements (e.g. staff time to promote information, deliver PTP etc). It is envisaged that Local Travel Plan Co-ordinators could be required as part of this process.

Priorities

Developing the Framework Travel Plan and considering whether a Strategic Travel Plan Co-ordinator is appropriate are essential next steps and therefore priorities for Welborne. Another important element will be the employer, school and residential travel plans which, national evidence suggests, could reduce demand for car travel by 10% or more.

Previous reports have reviewed a broad range of possible measures, identifying costs and potential impacts of different elements. Costs will need to be reviewed, as there may be more cost effective ways to deliver, which developers and stakeholders will need to consider. Flexibility will therefore be needed to tailor the package which evolves over time. However at this point the evidence suggests interventions included within the Framework Travel Plan will be made up of:

Information and marketing campaigns, to make people aware of different options. This might be particularly beneficial immediately before and after new residents move into their new homes/employers decide to relocate.

Site wide incentives such as a car share database, car club and a cycle hire scheme. Car clubs can be particularly successful in reducing the need for car ownership (perhaps replacing a second car for a household) and have been shown to lead to an increase in public transport use, as users weigh up costs and evaluate the alternatives. Likewise providing car share software and promoting it amongst people with something in common (e.g. workplace/ residential area) can provide a simple and cheap way to encourage car share journeys.

Intensive approaches such as personal journey planning which has been shown to reduce demand for car travel by up to 9%. This will need to be intensive, can be focused on the residential area and workplaces and supported by physical links and improved services.

Strategy

Governance

Case study – Northstowe

In Northstowe, Cambridgeshire, a formal community partnership structure has been developed. This has enabled the existing community to comment on the planning applications as they come forward and help shape the proposals, as they evolve. A Community Interest Company is planned, to be funded initially by the developer, with the aspiration that it will eventually be the mechanism for overseeing aspects of the development, which could include travel planning and associated 'community assets' (e.g. Community Hall, website, potential car club).

The Framework Travel Plan approach sets out the structure for smarter choices. Alongside this, consideration needs to be given to a mechanism for the delivery of a long term strategy, through effective governance. Developing and delivering smarter choices should rest with the local community, in a partnership with the developers.

This aspiration is for the Welborne Community to participate in sustainable travel, working with the developers initially to develop the strategy and eventually taking ownership of the strategy, including any community assets (e.g. travel centres, websites, car club etc).

It is recommended that the authorities work with the developers to identify an appropriate Framework Travel Plan, within a structure identified within this Strategy and supported by long term funding. There are various stakeholders that could be engaged as part of this process and various options as to how this could be achieved. One option to achieve this would be to use the existing governance structures for Welborne to allow the various parties to respond effectively to the development proposals and shape the Framework Travel Plan as it emerges.

There are various options as to how governance structures might eventually emerge. This might take the form of a Transport Management Association, Community Trust or Social Enterprise.

Case studies – Governance Structures for Travel Planning

Although still relatively new in the UK, there are examples of governance models that have been used to establish the long term ownership and delivery of travel plans.

Several companies at Thames Valley Park have come together on a voluntary basis to establish a site-wide travel plan framework. Having established an action plan of measures, the companies were able to come together to consider a business case for supporting it financially. Alongside this they considered a mechanism for calculating and pooling contributions from each business to ensure its continuity. An independent management company now manages pooled contributions and is accountable to a committee of directors from participating organisations. As well as ensuring continuity, this mechanisms allows economies of scale, with each organisation sharing the costs of incentives (e.g. shuttle buses to Reading Station) that might otherwise be prohibitively expensive.

Similarly, companies in north Bristol have come together to form an organisation called North Bristol SusCom to take forward an Area Travel Plan. The Area Travel Plan comprises a number of jointly supported initiatives which promote greater walking, cycling, public transport and car sharing in the area. North Bristol SusCom receives annual subscriptions from its Membership to support delivery of measures. The measures include a Travel Plan Co-ordinator, travel information through a dedicated website, various incentives to assist cycling and a bespoke area wide Travel Map. North Bristol SusCom were successful in securing some LSTF funding, in partnership with the local authorities, to contribute towards this package of measures, plus deliver an improved orbital bus route linking residential areas to key employment sites.

A Transport Management Association (TMA) is currently being considered as an option for delivering a new community at Northstowe, in Cambridgeshire. The TMA would be a separate legal entity, which would exist to deliver the objectives of the new community. It would be independent, transparent and would provide the community with an ongoing mechanism for joint decision making delivering a framework travel plan. The idea is to ensure delivery of smarter choices beyond the initial development.

The potential benefits of establishing a 'not for profit' organisation' as evidenced in these examples include:

- Continuity for co-ordinating and implementing Travel Plan initiatives
- An identity and focal point for action
- Independence from any one company and transparency for all involved
- A framework for actions
- The ability to act like a company – e.g. an address, employment of staff, managing subscriptions and budgets, applying for loans, discounts and public sector funding, speaking on behalf of the community in negotiations with public transport operators
- Credibility with the general public and the public sector and a conduit for a greater level of joint working than would otherwise be possible
- Reduced costs, through the joint implementation of a range of initiatives and incentives. A business case would be needed to set out the potential for reduced costs.

It is recommended that a Framework Travel Plan is required as part of the development proposals and that funding is sought to deliver it. The Framework Travel Plan and the detail of measures will need to be developed further, initiated by the developers but undertaken in partnership with residents and stakeholders. This will form the basis for a monitoring and review process. Some of the funding could be set aside to support a governance structure to be set up, with the aim of providing a legacy beyond developer involvement and funding.

Strategy

3.6 Managing wider impacts

Welborne will inevitably generate additional transport movements on the highway network in the vicinity of the site.

Congestion is recognised as a problem within Fareham town centre, one which makes journey times and reliability a continuing problem. The mitigation measures associated with Welborne will provide the opportunity to better manage traffic in the central area of Fareham enhancing opportunities for sustainable travel.

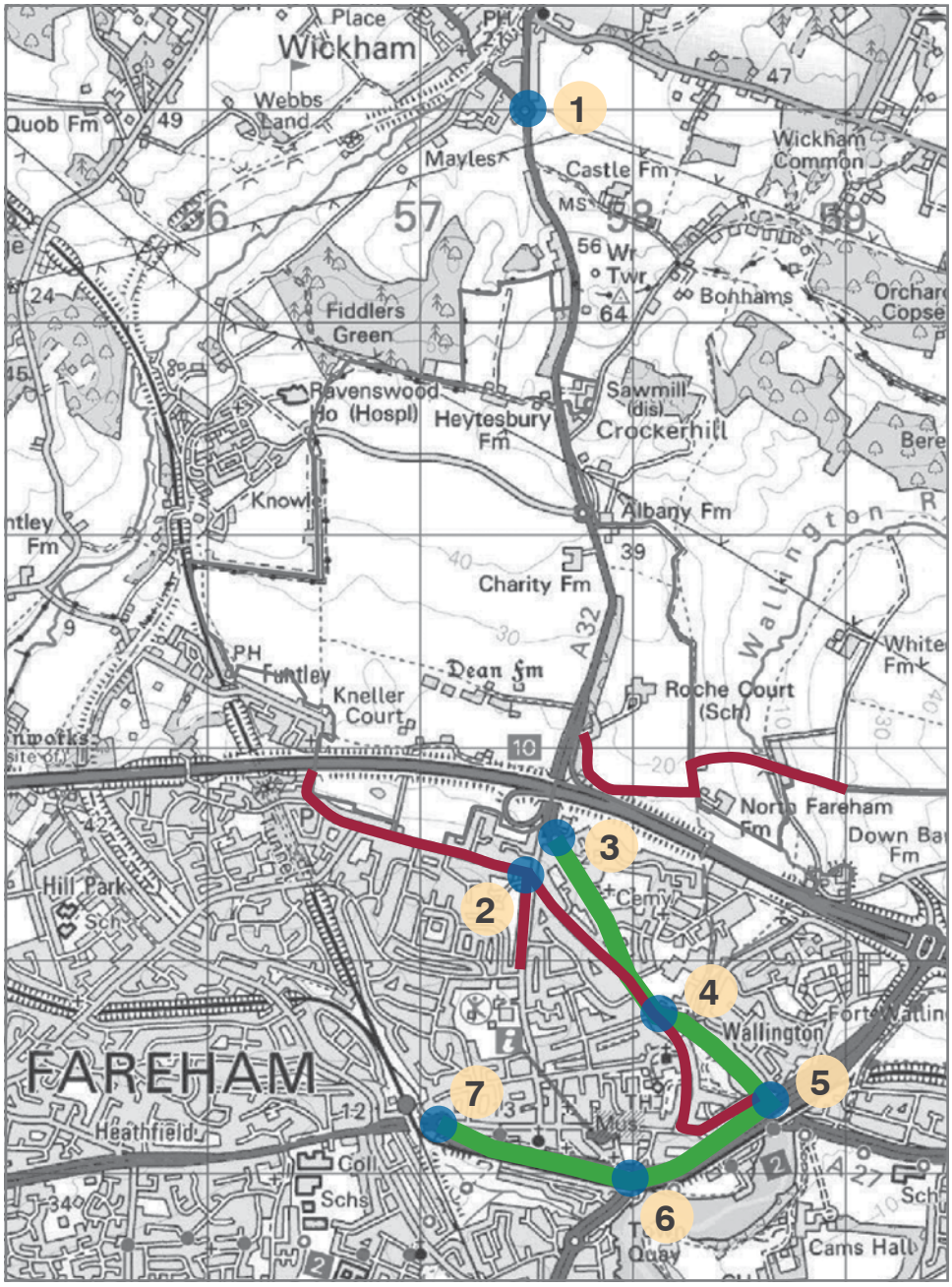
Highway and corridor improvements

It is recognised that a package of measures will be required to manage the traffic impact of the community on the wider highway network – both locally and strategically. The strategy will build on existing studies and plans in Fareham to develop a comprehensive package of improvements that can be secured through a range of both private and public sector funding sources.

The existing Town Access Plan identifies a number of highways improvements required to reduce congestion in the town centre, including traffic signal control measures which will be maximised to control, manage and direct traffic away from congested areas wherever possible.

Alongside improvements identified to the M27 infrastructure, a number of key junctions and links on the local highway network have been identified that may require traffic management measures or improvements as a direct result of traffic generated by Welborne. Further investigation and appraisal of measures will be required as part of the Transport Assessment to accompany the initial planning applications for the site. The following list sets out the key links and junctions and highlights potential mitigation which may be required following some very initial detailed modelling work alongside outline feasibility design work.

1. **A32/A334 Fareham Road, Wickham** – This junction lies to the north of the development on the A32. It is a three-arm roundabout junction with two-lane flares provided on all approaches. There appears to be sufficient carriageway and verge space to realign the carriageway if appropriate. Further work in relation to the operational effectiveness of this junction and the need to modify the junction to a traffic signal based design to enable better traffic control will be considered as work progresses. The need for traffic management measures and mitigation along the A32 Wickham Road, Hoads Hill and the A334 Fareham Road will also be considered as work progresses and discussions with local Wickham residents to inform the outputs will form a key part of this work.
2. **North Hill/Kiln Road/Old Turnpike/Park Lane** – Kiln Road provides the main link to Funtley from the north of Fareham. The new development may generate additional demand on Kiln Road and North Hill by traffic from the local residential areas travelling to Junction 10 of the motorway, avoiding Fareham town centre. Many of these trips are already using roads in the area to access the motorway at either Junctions 9, 10 or 11 but may adjust their travel patterns when all moves at Junction 10 becomes possible. Traffic calming measures may be required and will be investigated along Kiln Lane to reduce the 'rat-running' traffic and control speed of traffic on this residential route. The junction itself is currently restricted with limited space to provide additional capacity and will require improvements to cater for the inevitable additional traffic movements. Detailed modelling will be undertaken in order to identify the potential for improvements within the existing constrained highway layout, however without third party land take it is unlikely that operational effectiveness can be optimised at this location. Further work is required.
3. **A32 Wickham Road/North Hill/Furze Court** – This roundabout junction lies just to the south of Junction 10, providing the main route into Fareham town centre from the north. There is limited carriageway space to the south of the junction and through the roundabout to provide additional lanes for bus priority. However, to the north, there may be scope to provide bus priority for BRT vehicles and buses travelling south. Further testing of this junction with bus priority measures in place will be required as development proposals for Welborne come forward. The preferred option for the Junction 10 all movements junction will determine whether this roundabout is altered to be a signal-controlled junction.
4. **A32 Wickham Road/Wallington Way/Southampton Road** – This junction, comprised of two roundabouts, lies on the A32 and provides access to Broadcut Retail Park and Fareham Industrial Estate. The two roundabouts linked by dual carriageway, present the opportunity for bus priority measures through this section down to the A27 junction (Delme Roundabout).
5. **Delme Roundabout A32/A27** – This large, grade-separated junction links the main A27 to the A32 and connections south to Gosport. The A27 east-west corridor experiences peak hour congestion problems with a mixture of single and dual carriageway sections and constrained junctions creating bottlenecks along the route. The A27 is important for local and strategic movements complimenting the M27 for much of its route. It is a critical artery for the central Fareham area. The introduction of an all movements operation



Legend

- Off-site highway improvements
- Potential traffic management
- Key highway corridors

Off-site highway improvements

Strategy

at Junction 10 will relieve some of this east-west traffic flow. The need for improvements at Delme will be explored in order to facilitate BRT movements to and from Portsmouth, particularly on the westbound approach to the junction.

6. **A27/A32 Quay Street Roundabout** – This complex junction has recently been upgraded to accommodate access to the new Tesco Superstore. An overpass provides some relief to traffic on the A27; however this is a single carriageway creating some congestion. Significant additional works are not envisaged, but some minor improvements may be required. Opportunities for further improvements at this junction will need to be explored with the Highway Authority.

7. **A27 Railway Station Roundabout** – The direct connection between Welborne and the railway station via BRT and local bus routes will be fundamental to deliver the alternative transport offer to the private car. Local Transport Body funding has been secured to deliver an improvement at this junction along with the adjacent junction at Gudge Heath Lane to achieve optimum benefit. The improvement will provide for better interchange between bus and rail including a dedicated bus lane and improved pedestrian and cycle access.

Key corridors/traffic management

Alongside the specific junctions identified above, a series of key corridors have been identified where sufficient capacity will be vital to ensuring the strategic road network is resilient enough to accommodate the additional demand generated by both the Welborne development and an all movements Junction 10. These key corridors are:

- A32 Wickham Road
- A32 Wallington Way
- A27 Eastern Way
- A27 Western Way

A number of more local roads have been identified where traffic management measures may be required to discourage rat-running on the local network. These are:

- Pook Lane
- Kiln Road/Funtley Road
- Park Lane
- Old Turnpike
- High Street/East Street

Further more detailed modelling will be required in any planning applications to ensure that the capacity of these key junctions and links will be sufficient to accommodate future demand.

Public transport

Fareham has a comprehensive bus network linking the town to the local employment and retail centres of Portsmouth, Gosport, Southampton and beyond. This includes the innovative 'Eclipse' route between Fareham and Gosport, as well as a strong network of local bus services, primarily run by First Group. Hampshire County Council has developed a strong partnership working relationship with operators, which has led to a stable bus network with good levels of patronage. Despite this, up to 80% of trips are still made by car by Fareham residents.

Welborne will build upon this foundation and provide additional routes within this network so that residents and employees can access all main destinations by public transport.

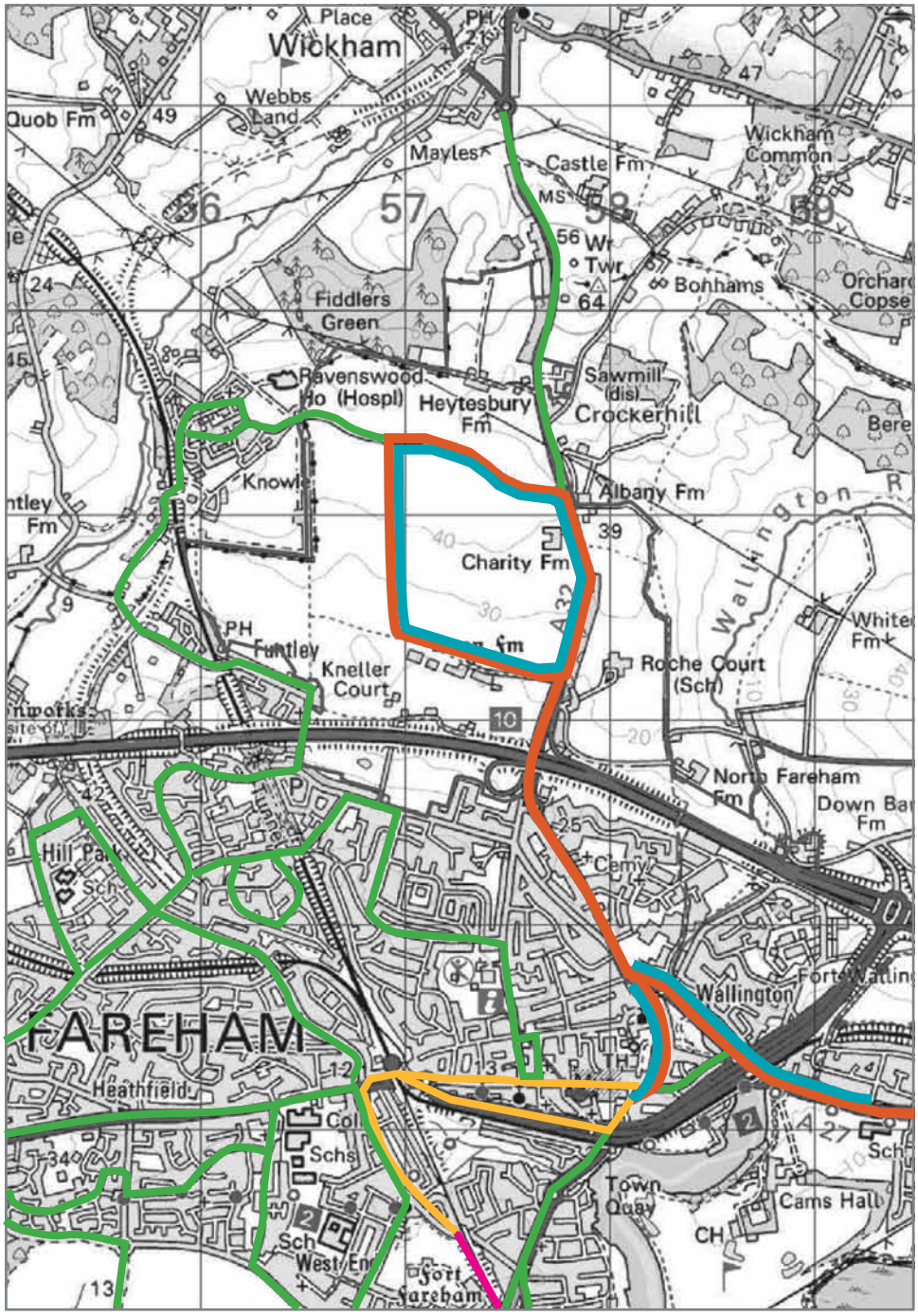
Bus rapid transit (BRT)

The existing BRT link between Gosport and Fareham town centre is the first stage in the development of a network of routes across South Hampshire. The innovative, high specification service will form a key component of the access strategy for Welborne. The existing E1 and E2 services which currently terminate at Fareham Bus Station will be extended to Welborne to provide a direct connection for the site to not only the town centre but the bus and railway stations for onward journeys. The BRT connections form a critical part of the transport and access strategy for the development. New routes are also to be provided to link to Portsmouth initially via the A27 and in the longer term also via the M27 to provide a higher speed connection to the city.

Two committed schemes have already been approved by HCC to provide bus priority in the town centre and adjacent to Fareham Station for use by the BRT services and other local bus services:

- A new bus lane is proposed along the A27 Western Way to provide additional general traffic capacity whilst retaining the bus priority lane for BRT and local buses and improving access for buses to Station roundabout;
- A new bus gate at the intersection of Western Road and A27 Western Way to provide direct BRT access onto the A27 westbound carriageway, thus avoiding the congested Quay Street roundabout.

Improvements to the A27 Fareham station roundabout are also proposed to assist BRT and funding confirmation is being sought from the Local Transport Body.



Legend

- Existing on-carriageway BRT route
- Existing dedicated BRT route
- Proposed BRT route
- Opportunities for bus priority
- Existing bus route network

Wider public transport map

Strategy

Local buses

The BRT route through the site will be supplemented by a series of local bus services providing an integrated and coordinated network. Interchange from BRT to local bus services at each of the main BRT stops will be facilitated by the provision of high quality infrastructure and onward travel information.

The additional bus routes or services will serve not only the Welborne community but also the local villages including Funtley and Knowle, enhancing their connectivity to Fareham town centre.

The site borders the village of Funtley. Bus route 20 currently links Knowle and Funtley villages with Fareham town centre, making use of a bus gate in operation in Knowle village centre. This gate provides links to the west across the railway line, a route that is not accessible to general traffic. Route 20 currently operates on a 70-minute headway, and increases in frequency on this route to half-hourly or better would be of great benefit to both the existing villages and Welborne residents. Route 69 from Winchester could also provide a re-routed service through the site.

The Welborne community will support additional routes, providing links between Welborne and the local villages of Wickham, Funtley, Botley, Bishops Waltham and Knowle.

Bus priority measures, as discussed above, would be provided for all bus routes where needed, not just BRT services to ensure public transport has a time advantage over private vehicles wherever possible.

Integrated ticketing will enable seamless travel on the public transport network across South Hampshire, facilitated by the LSTF funding detailed above.

Rail connections

Welborne is bounded to the west by the Fareham to Eastleigh rail line. This route is currently single track and the opportunities to develop a new rail halt on this line to directly serve the Welborne community are limited due to line access, single track operation, level changes, and proximity to the existing Fareham Station.

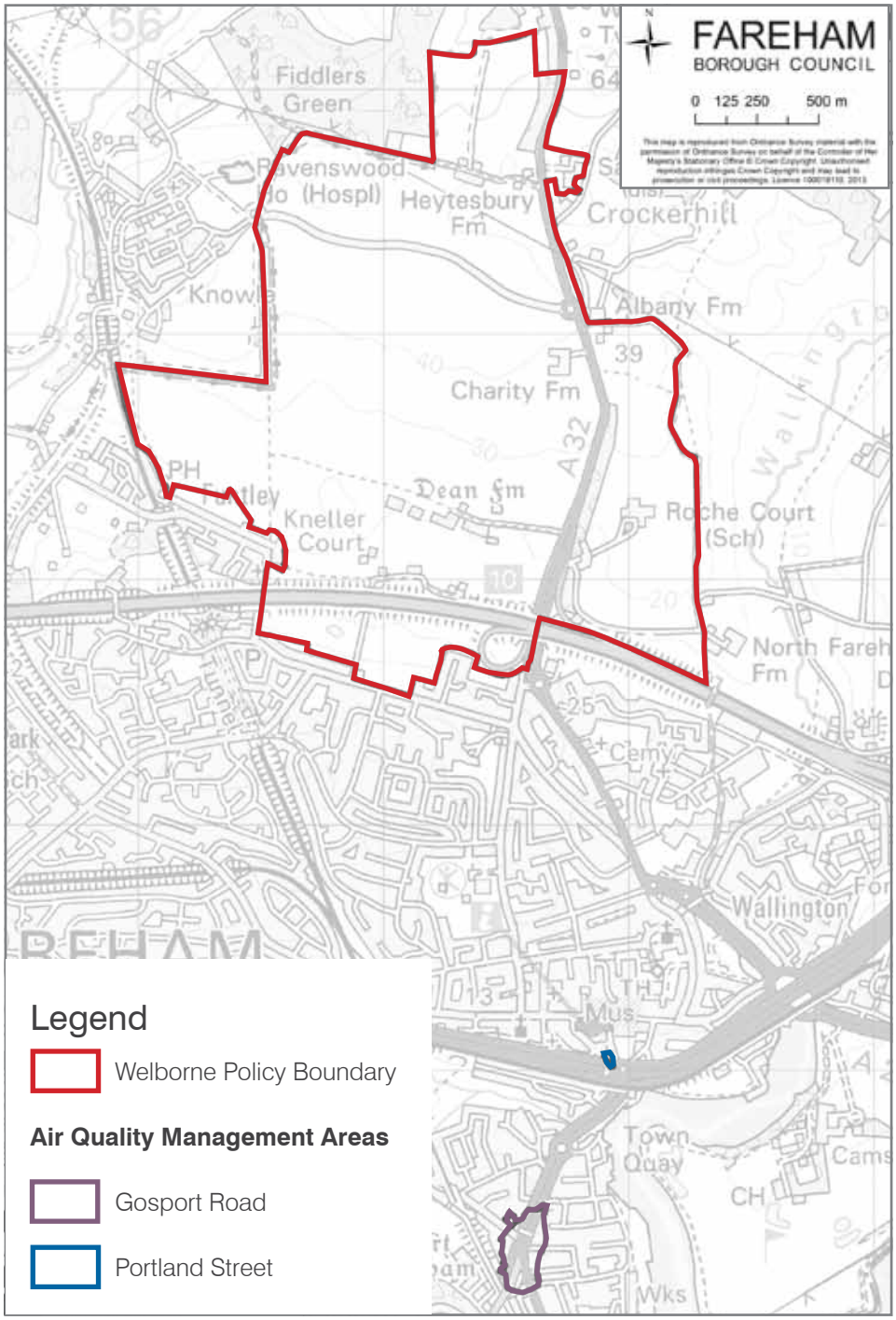
Network Rail has confirmed that there is no in-principle technical reason why a halt could not be developed, however, the estimated costs is significant, which would need to be funded by the development and could be prohibitive. A new stop would also cause 4-5 minute delay on services which would require the support of South West Trains.

Safeguarding of land in this location is recommended to ensure any future developments are facilitated in the longer term. The Masterplan has been designed with such safeguarding in mind to the west of the site.

Such a proposal may represent a long term vision, potentially with a light rail solution. However, in the shorter term, strong links will be developed from the start between the Welborne community and Fareham Station through the BRT and bus network enhancements. Smart ticketing will be implemented in association with transport operators to provide a seamless journey for passengers, incentivising public transport travel.

Air quality

There are two Air Quality Management Areas (AQMAs) in Fareham – Gosport Road and Portland Street. The impacts of additional traffic in these areas in particular will be closely monitored. The National Air Quality Standards will need to be met in these two locations. Strategic modelling results have so far shown limited impacts on these two locations in terms of traffic increase. The measures contained within this strategy both in terms of infrastructure provision to reduce congestion and measures to reduce the level of private car use will serve to mitigate impacts upon these two locations.



Air Quality Management Areas

4. Welborne transport infrastructure project review

This chapter provides a schedule of transport projects which have emerged from the strategy. These cost, phasing and delivery of these projects has been considered by GVA/AECOM in the parallel study on infrastructure delivery and viability.

Project number	Infrastructure item	Location	Delivery Agency	Phasing/ year of trigger	Cost
Highways projects					
Project 1	M27 Junction 10 – capacity improvements to existing eastbound on-slip	Off-site	HA//Master Developer	2018	–
Project 2	M27 Junction 10 Improvements (including new Welborne southern access roundabout on A32). Provision of new westbound facing slip lanes to enable all movements junction	Welborne and Off-site	HA/HCC/Master Developer S106	2018-2022	£25-35m
Project 3	M27 Junction 11 Potential Improvements. Capacity improvements to existing slip roads.	Off-site	HA/Master Developer	2018-2022	–
Project 4	Internal Primary and Secondary Street Network, including provision for pedestrians and cyclists along these routes	Welborne Site	Master Developer	2015 onwards as site develops	£29.3m
Project 5	Adoption of On-Site Street network. These streets and junctions are required to be constructed in accordance with the Council's guidelines and would typically be adopted by way of an agreement between the developer and the Council under Section 38 of the Highways Act 1980. The developer will provide a committed sum of money to cover future maintenance of the adopted road network.	Welborne Site	HCC/Master Developer	2015 onwards	£7.3m
Project 6	A32 Northern Site Access at Forest Lane – four-arm roundabout providing access to northern sector of site	Welborne Site	Master Developer	2016	£500,000
Project 7	A32 Knowle Road Roundabout – minor works to improve the existing roundabout	Welborne Site	Master Developer	2016	£150,000
Project 8	A32 Central Site Access between Knowle Road roundabout and Junction 10. Four-arm signal junction	Welborne Site	Master Developer	2015	£500,000
Project 9	A32 Corridor. Street transformation project along the A32 including widening of approximately 1km section between Knowle Road and Junction 10	Welborne Site	HCC/Master Developer	2016	£4.1m
Project 10	Off-site Traffic Management (rural). Offsite capacity improvements, traffic management and traffic control measures on surrounding rural roads that are impacted by Welborne traffic, including A32 north and Pook Lane	Off-site	HCC/Master Developer	2017-2018	£1m
Project 11	Off-site Traffic Management (urban). Traffic management and traffic control measures on surrounding urban streets that will be impacted by Welborne traffic. Key junctions include: A32/ North Hill; Delme Roundabout; Quay Street Roundabout; Station Roundabout	Off-site	HCC/Master Developer	2022	£2.5m

Project number	Infrastructure item	Location	Delivery Agency	Phasing/ year of trigger	Cost
Public transport projects					
Project 12	Cycle parking at Fareham Station. Principal interchange for rail access to Welborne	Off-site	HCC	2015	£100k
Project 13	Knowle Rail Halt	Welborne Site	Master Developer/ Network Rail	2030	£10m
Project 14	On site BRT network. Implementation of BRT priority measures at 4 internal junctions to allow for signal equipment and localised carriageway widening. Phased introduction.	Welborne Site	Master Developer	Phase 1 (A32 corridor) 2019 Phase 2 2025	£1m
Project 15	Off-site BRT infrastructure. Bus infrastructure measures for proposed BRT routes to serve Welborne between M27 Junction 10 and Fareham bus stattion and town centre.	Off-site	HCC/Master Developer	2019	£600k
Project 16	Bus and BRT Operational Subsidy to implement a new route between Welborne and Fareham Rail Station to link to wider network, with a service frequency of 4 buses per hour.	N/A	HCC/Master Developer	2016-2028	£150k-£300k per annum Total: £2.9m
Project 17	Local Bus Infrastructure with new bus stops on the Welborne site and improvements to existing bus stops on key routes serving the site.	Welborne and Off-site	HCC/Master Developer	2015	£400k
Public transport projects					
Project 18	The increased use of travel planning and softer measures, often identified as 'smarter choices' techniques, offers a cost effective method of maximising access and travel opportunities without increasing traffic impact. For Welborne, it is envisaged that similar techniques should be applied, with funding of an Area Wide Travel Plan and related projects from developer contributions. The costs associated with smarter choices techniques relate to the running and managing of an Area Wide Travel Plan. It is envisaged that a developer funded Area Wide Travel Plan managed via the Transport Management Association would be in operation from prior to the initial occupation of the Welborne site up to the completion of the site which is assumed to be fully built out over a 25-year period.	Welborne	HCC/Master Developer	2016 onwards	£3.8m
Walking and cycling projects					
Project 19	Pedestrian and cycle linkages into surrounding areas in line with the Green Infrastructure Plan. Includes M27 crossing(s), Meon Valley Trail, Whiteley, Segensworth and north-south link between Wickham and Fareham	Off-site	HCC/Master Developer	2020	£5m

Notes

1. For the Highways projects:
   - This estimate exclude Statutory Undertakers diversion costs
   - This estimate exclude Third Party land acquisition
   - This estimate is indicative only and should not be used for budgeting purposes
   - This estimate has not been calculated from engineering drawings and there is approximate only. Further costing will be required at design and tender stages

Contact information

Jonathan Tricker, Head of Placemaking

Parsons Brinckerhoff
The Forum
Barnfield Road
Exeter EX1 1QR

Tel. 44-(0)7917-436933

jonathan.tricker@pbworld.com

www.pbworld.com

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