Delivering Strategies

Winchester District Local Development Framework Transport Assessment

Report for Winchester City Council

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Non-Technical Summary

The Role of Transport in the LDF

Transport is a fundamental consideration of the Local Development Framework (LDF) process. The movement of people and goods is an essential function of established communities and new development sites. This report collates a range of data sources to build up a picture of current transport activity across Winchester District and considers how proposed development would affect existing movement and how transport networks could be changed to meet additional demands when development is in place. In many instances, reconciling development aspirations and transport needs can be difficult and there are naturally concerns expressed about the impact of development sites, particularly for road traffic.

Current Transport Activity

The city of Winchester has a unique centre which exhibits a number of constraints on movement. However, the city functions well despite some peak period traffic congestion. Car ownership in the District is high and this is a strong influence on how and when people travel. Although cycling levels and bus use are poor relative to the region and nationally, the proportion of walk trips is high. This suggests that there is scope to accommodate additional demand with more walking, with cycling and through more bus use – this approach is advocated at local, regional and national levels of policy.

The hierarchy of policy context reinforces the need to contain car use in favour of sustainable modes for environmental, social and economic reasons. The South East Plan, which has required growth in housing and employment throughout the region, also promotes a re-balancing of the transport system so that the use of public transport, walking and cycling becomes more widespread. Hence traffic levels can be contained and the congestion problems currently experienced in the District can be addressed. This approach is reflected in the Hampshire Local Transport Plan 2006 to 2011 with an underlying theme of Reduce – Manage – Invest, an approach that reflects that adopted by the South Hampshire authorities in response to growth expectations in the PUSH (Partnership for Urban South Hampshire) area and other planning statements.

Issues and Options

The City Council's LDF Issues and Options report generated a large number of responses concerning possible options for development. Local people in the smaller settlements raised concerns about the traffic impacts of possible development while adjacent planning authorities and agencies with a wider remit supported the City Council's approach.

It is important that the decisions made through the LDF process are evidence-based. Transport data tends to be disparate and a range of sources has been drawn upon to understand the current situation. Data obtained included traffic flow information for trunk and local roads, previous studies on transport, the economy and other aspects, 2001 Census information, road casualties and public transport; accessibility was mapped based on a number of data sources. Road capacities were determined to give an indication of spare capacity.

The development options have been considered in the context of experience from elsewhere. It is clear that public transport provides an alternative to car use in many situations. However, self-containment (in which people live and work in the same local area) may be more elusive than expected, particularly over time for locations where a wide range of competing opportunities exists such as South Hampshire. Attempts to reduce travel demand and to support a move away from car use can be successful but generally require a wide programme of initiatives and sympathetic planning. The fact that a number of large developments are being considered in the M27 corridor is significant in that the impact of the sites in combination will be considerable and may overwhelm the measures associated with one site in isolation unless all are planned with some co-ordination.

Traffic Impacts

The expected traffic impacts have been calculated in accordance with Highways Agency advice. This takes trip rates determined from a reliable source and applies this to the quantum of development. This is then split by mode based on Census data and distributed according to observed data. Across the District, 60% of journeys to work have destinations in the District with Southampton, Eastleigh and Portsmouth attracting workers; for Winchester city, 70% of journeys to work are to destinations in the District. For Whiteley, local data has been used which shows that South Hampshire destinations feature more strongly as would be expected. The numbers of trips have then been assigned to routes by mode to give an indication of the likely impacts of the larger sites. The generated trips are then added to observed traffic data to assess the impacts on link flows, taking background growth to 2026 into account.

The analysis indicates that sites in Winchester town will have a marginal impact on the A34(T) but will add to traffic at M3 Junction 11 and motorway flows to the south of Winchester at peak times. The M3 is expected to experience further congestion in future years due to traffic growth as well as generated traffic and capacity will be exceeded. Roads within the city will have higher traffic levels and additional traffic on the B3420 Andover Road from the Barton Farm site into the city centre is expected to cause congestion at peak times. This can be relieved by a strong emphasis on sustainable modes to the site.

Additional traffic from Whiteley at M27 Junction 9 will exacerbate existing problems and compound difficulties of background traffic growth and the traffic generated by large development sites including the North/North East Hedge End Strategic Development Area (SDA) and the North Fareham SDA. The proposed South Hampshire Strategic Employment Zone at Eastleigh will also be expected to add to traffic using the motorways. M27 Junction 9 already experiences considerable delays and additional traffic is unlikely to be acceptable to the Highways Agency which manages the route.

Consideration of Settlements

The settlements in the District have been assessed in terms of their transport strengths, weaknesses, opportunities and threats. Winchester offers considerable potential due the presence of the main line railway, a strong local bus network and extensive walking and cycling opportunities. Local traffic problems persist at peak times but there is spare capacity at other times. Development sites could take advantage of existing transport networks and actively promote sustainable modes to become fully integrated into established travel patterns.

Alresford is relatively isolated and as such is unlikely to support bus improvements without large scale development which may be out of scale to the existing activities in and around the town. Bishop's Waltham, despite being close to larger centres, has high levels of activity but limited public transport. Similarly, Wickham could not sustain more than small scale development in transport terms but could benefit from improved transport links to serve the nearby North Fareham SDA. Unlike the other settlements of similar size, Whiteley is severely car dependent and measures to change existing travel patterns will be needed if large scale extensions are to be achieved successfully.

Of the other settlements, Denmead offers some potential given its proximity to Waterlooville town centre and possible expansion of the proposed West of Waterlooville major development area (MDA). The Colden Common/Twyford/Shawford corridor has relatively poor bus services and limited local facilities, indicating that growth would be difficult to justify. Kings Worthy also has limited facilities but does have regular daytime bus links to Winchester while Waltham Chase is located between Bishop's Waltham and Fareham and is served by some bus services. A larger scale development that incorporates parts of Waltham Chase, Swanmore and Wickham could provide a more robust basis for public transport provision. Expansion of the West of Waterlooville MDA could accommodate some of the planned growth provided that good public transport links are in place. Elsewhere, the Compton/Shawford/Otterbourne corridor offers limited potential for growth despite having regular public transport services to larger centres due to the lack of local facilities.

Conclusions

In the city, traffic growth has been contained over a number of years and congestion is largely confined to peak periods. However, traffic using the M3 has increased considerably and additional traffic would contribute to congestion on this key route. The city offers many opportunities for walking and cycling and the local bus network meets many regular journey needs.

For the smaller settlements in the District, some containment of employment is evident but inevitably there is demand for movement to larger centres, particularly in the south of the District with major urban centres including Southampton and Portsmouth within reach. Across much of the District, car journeys predominate and the traffic levels throughout the M27 corridor are increasing.

Development in Winchester town can be achieved provided that there is a strong emphasis on sustainable modes to minimize the impact of car traffic. This requires an approach that considers bus access, walking and cycling first and provision for car access second. Growth can be accommodated although further pressures on the M3 junctions are likely to cause some problems.

Elsewhere in the District, Whiteley offers major potential but this is only deliverable with significant transport measures to address not only the demands of new housing but also the established Whiteley area - extensive public transport will be required to make the development site function. The location of other large sites in the M27 corridor will exacerbate problems on the trunk and local road networks.

The smaller settlements are unlikely to sustain large scale development individually or collectively without inducing further car dependency. Extending bus provision is unlikely to

be possible in the absence of a major development site but some locations could benefit from public transport provision associated with larger sites in the area.

Recommendations

Considerable opportunities for development exist in Winchester town. Barton Farm is relatively close to the central area and rail station and could be designed to support sustainable modes particularly walking and cycling routes and a new bus service. Other identified sites at Pitt Manor and Worthy Road can be incorporated into existing transport networks without major difficulties. Larger scale development (the step change option) will have significant impacts on the M3, create further traffic in the central area and exacerbate constraints on the capacity of local transport networks. However, depending on the locations of sites within the broader options, some walking, cycling and bus use could be created.

Major opportunities are also presented at **Whiteley**. However, unless transport problems are addressed, the site will exacerbate traffic problems at M27 Junction 9 even with the completion of Whiteley Way to the north. The relationship between North Whiteley and the North/North East Hedge End SDA means that the sites could share some transport provision, particularly bus rapid transit links to major centres. To achieve further growth at Whiteley, substantial efforts are needed to secure strong bus/BRT services, linking with other centres (including the SDA, Segensworth and Fareham), to promote more local walking and cycling and develop travel plan initiatives. Without this, the proposed sites will not be able to function effectively.

Additional development at the West of Waterlooville MDA is achievable provided that good sustainable transport links are in place between the site and the A3 corridor, particularly to Waterlooville town centre, Cosham and Portsmouth. Some growth at Denmead could be achieved also in association with an expanded MDA.

Other more limited development could be provided in some of the smaller settlements including Bishop's Waltham and Wickham, possibly including Swanmore and Waltham Chase if public transport services can be improved.

The New Alresford area is more isolated and less likely to support public transport improvements although significant capacity is available on the A31 towards Winchester for car movements.

Glossary

ATM	Active Traffic Management (applied to motorways)
CIF	Community Infrastructure Fund (associated with development sites)
FTE	Full Transport Evaluation (as specified by the Highways Agency)
GVA	Gross Value Added
LDF	Local Development Framework
LTP	Local Transport Plan
MDA	Major Development Area
NRTF	National Road Traffic Forecasts
PUSH	Partnership for South Hampshire
RFA	Regional Funding Allocation
RFC	Ratio of flow to capacity
RSS	Regional Spatial Strategy – the South East Plan
RTE	Reduced Transport Evaluation (as specified by the Highways Agency)
RTS	Regional Transport Strategy
SDA	Strategic Development Area
SHSEZ	South Hampshire Strategic Employment Zone
SRN	Strategic Road Network
SWOT	Strengths, Weaknesses, Opportunities, Threats
TEMPRO	Department for Transport's trip end forecasting program
TfSH	Transport for South Hampshire
TRICS	Database to determine trip rates from development sites

1 Introduction

1.1 Transport Context

Transport and accessibility are fundamental to the Local Development Framework (LDF) process and the creation of sustainable communities. Potential development sites for housing and employment can only be considered to be sustainable where it can be demonstrated that there is good access by sustainable transport modes. Hence transport and land use planning are inextricably linked. This reflects the policies of the draft South East Plan which support sustainable development and present the case for a coherent and deliverable transport network.

Winchester District faces a number of challenges to fulfil the requirements of the LDF Core Strategy in identifying sites for development and addressing transport concerns. While a natural focus is the city of Winchester, much of the District is rural with a limited number of smaller settlements to provide a focus for local facilities. However, the extent of the District and the inclusion of a significant part of it within South Hampshire raises particular issues concerning accessibility, development and meeting the wider expectations of the sub-regional strategy for South Hampshire, articulated through the Partnership for South Hampshire and its delivery agency Transport for South Hampshire. Transport measures associated with the LDF also need to be consistent with the second Hampshire Local Transport Plan (LTP) and future LTPs.

For the city of Winchester, the forthcoming Winchester Town Access Plan addresses the issues faced in trying to reconcile an historic core and the demands for 21st century movement. This builds on the success of the Winchester Movement and Access Plan which aimed to bring together the relevant interests and create an effective transport system to support a thriving economy while maintaining the city's unique environment. Particular issues include the role of additional park and ride sites, the impact of traffic and the opportunities to promote a walking and cycling culture and environment. In addition, the District Community Strategy (created through the Winchester District Strategic Partnership) supports initiatives to enhance sustainable travel.

The transport requirements and options need to be worked up alongside other issues including the availability of land and employment needs/locations. The environmental constraints that are evident throughout the District also constrain where transport links can be provided or expanded.

Car ownership in the District is relatively high: in 2001, there were 0.58 cars per person compared with 0.53 for the South East and 0.46 for England. This is a major determinant of how people travel – if they have a car, they can be expected to use it and orientate their travel behaviour around it, particularly if more sustainable travel alternatives are not readily available. This has implications for parking provision and management in established and new developments, particularly for new residential and employment centres.

Table 1.1 indicates mode share for the District. Rail and bus use is low compared with the region and England as a whole for both the resident and daytime populations. While the railway is vital for connections to London, intermediate employment locations and Eastleigh/Southampton/Fareham/Portsmouth, train journeys within the District are a small proportion of the total. Cycling is also relatively poor but walking compares favourably with

the region, much of this being attributable to journeys in the city of Winchester and within the smaller settlements.

Table 1.1 Mode Share for Winchester District 2001

	Winchester District	South East England	England
Resident Population			
Work at home	12.07%	9.98%	9.20%
Train	4.22%	5.89%	7.43%
Bus	3.25%	4.38%	7.55%
Car/van driver/motorcycle	60.19%	60.61%	56.29%
Car passenger/taxi	5.16%	6.10%	6.66%
Cycle	1.91%	3.08%	2.84%
Walk	13.20%	9.96%	10.04%
Daytime Population			
Work at home	10.05%	10.50%	9.22%
Train	2.32%	2.69%	7.41%
Bus	3.88%	4.47%	7.55%
Car/van driver/motorcycle	64.02%	62.29%	56.33%
Car passenger/taxi	6.20%	6.36%	6.66%
Cycle	1.99%	3.21%	2.84%
Walk	11.54%	10.49%	10.01%

Source: Census 2001

Population

1.1.1 The current population of the District is 110,000[1] living in 46,600 households 107,222 in 2001), a relatively low density of 166 persons per hectare compared with the Hampshire mean (including Portsmouth and Southampton) of 1,848. It is expected that the population will increase by 25,057 between 2001 and 2026. In terms of ethnicity, 97.8% of the population is white British or European.

[1] Mid year estimate 2006. Source: Hampshire Economic Partnership.

1.2 Development Required

1.2.1 The South East Plan focuses on areas with strong economic potential and those with a particular need for regeneration to reduce disparities and increases social and economic cohesion. The Plan identifies two Strategic Development Areas in South Hampshire at North/North East Hedge End (6,000 dwellings, partly in Winchester District) and at North Fareham (10,000 dwellings, adjacent to the District boundary). Also in South Hampshire lie the settlements of Colden Common, Bishops Waltham, Denmead and Whiteley within the District.

1.2.2 For housing, the overall District target is to provide land for 12,240 dwellings in the period 2006 to 2026 of which 6,740 are in the South Hampshire area with the remaining 5,500 to be located elsewhere in the District (see Table 1.2).

Table 1.2 Winchester District Housing Provision

Area	South Hampshire	Rest of District	District Total
Housing Requirement (South East Plan)	6,740	6,000	12,740
Completed 2006 to 2007	150	350	500
Commitments 2007 to 2026 (permissions and allocations)	2,040	1,485	3,525
Remaining requirement	4,550	4,165	8,715

Source: Issues and Options report

1.2.3 The southern part of the District lies within the Partnership for Urban South Hampshire (PUSH) area. As such, the issues facing the cities of Portsmouth and Southampton and the other centres have major implications for the distribution of development in the District and the transport links between various sites and the urban areas is of major significance.

1.3 Current Context

There is continuing debate on the best means of accommodating development with a number of sites proving to be controversial. The identification of possible sites for 'Eco-Towns' in England has raised some fundamental questions regarding travel in addition to urban design and energy saving features. A new community or extensive development adjacent to an existing community must focus on sustainable transport in terms of design and behaviour to avoid the car dependency that has resulted from previous development sites. Given the dispersed nature of settlements in the District, it is important that consideration is given to transport issues from the outset and not attempting to retro-fit measures; this approach needs to be successful in generating journeys by means other than car. For the rural communities, walking and cycling can meet many local needs but bus links must be viable and attractive if good links to other destinations are to be achieved. Within the city, the existing bus network and walk/cycle opportunities provide core networks that will help direct development scenarios.

This reflects national, regional and local guidance which aims to reduce the demand for travel and to encourage a modal shift from car to other modes. Of particular relevance are **Planning Policy Guidance 13 Transport** (2001) which establishes the principles although there are few examples of how this has been achieved in practice. The role of the Highways Agency is important in terms of the relationship between the trunk road network and development sites, particularly the A3, A34, A303, M3 and M27. **Guidance on Transport Assessment** produced by the Department of Communities and Local Government and the Department for Transport (2007) reflects PPG13 and requires Transport Assessment to consider the following:

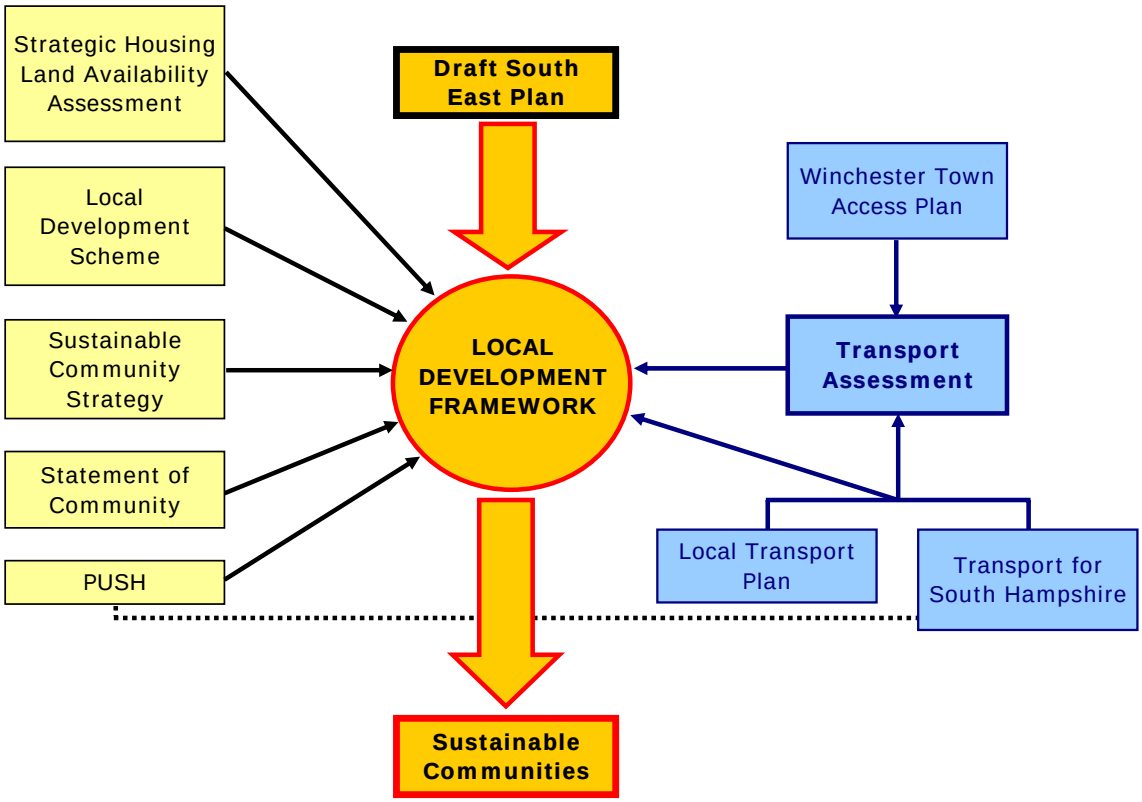
- **Encouraging environmental sustainability**
  - Reducing the need to travel, especially by car;
  - Tackling the environmental impact of travel;
  - The accessibility of the location; and
  - Other measures which may assist in influencing travel behaviour.
- **Managing the existing network**
  - Making best possible use of existing transport infrastructure; and
  - Managing access to the highway network.
- **Mitigating residual impacts**
  - Through demand management;
  - Through improvements to the local public transport network and walking and cycling facilities;
  - Through minor physical improvements to existing roads; and
  - Through provision of new or expanded roads.

We will adopt this approach to ensure consistency with current guidance. We will also take into account the strong direction provided by the Transport for South Hampshire Statement which reinforces the approach of **Reduce – Manage – Invest**. This emphasizes the need to contain demand and make better use of existing networks as well as investing in infrastructure schemes. The Statement indicates that all three arms of this approach will require investment - not just infrastructure – and that a continuing effort is required to achieve sustainable development rather than a simplistic sequential approach. The Reduce – Manage – Invest approach has been adopted more widely for the Hampshire Local Transport Plan.

1.4 The Local Development Framework

Figure 1.1 indicates the relationships between the various inputs to the LDF process. This is complex and while focusing on the LDF Core Strategy, it illustrates the range of planning and transport evidence required to support the spatial strategy for the District.

Figure 1.1 Winchester LDF Context

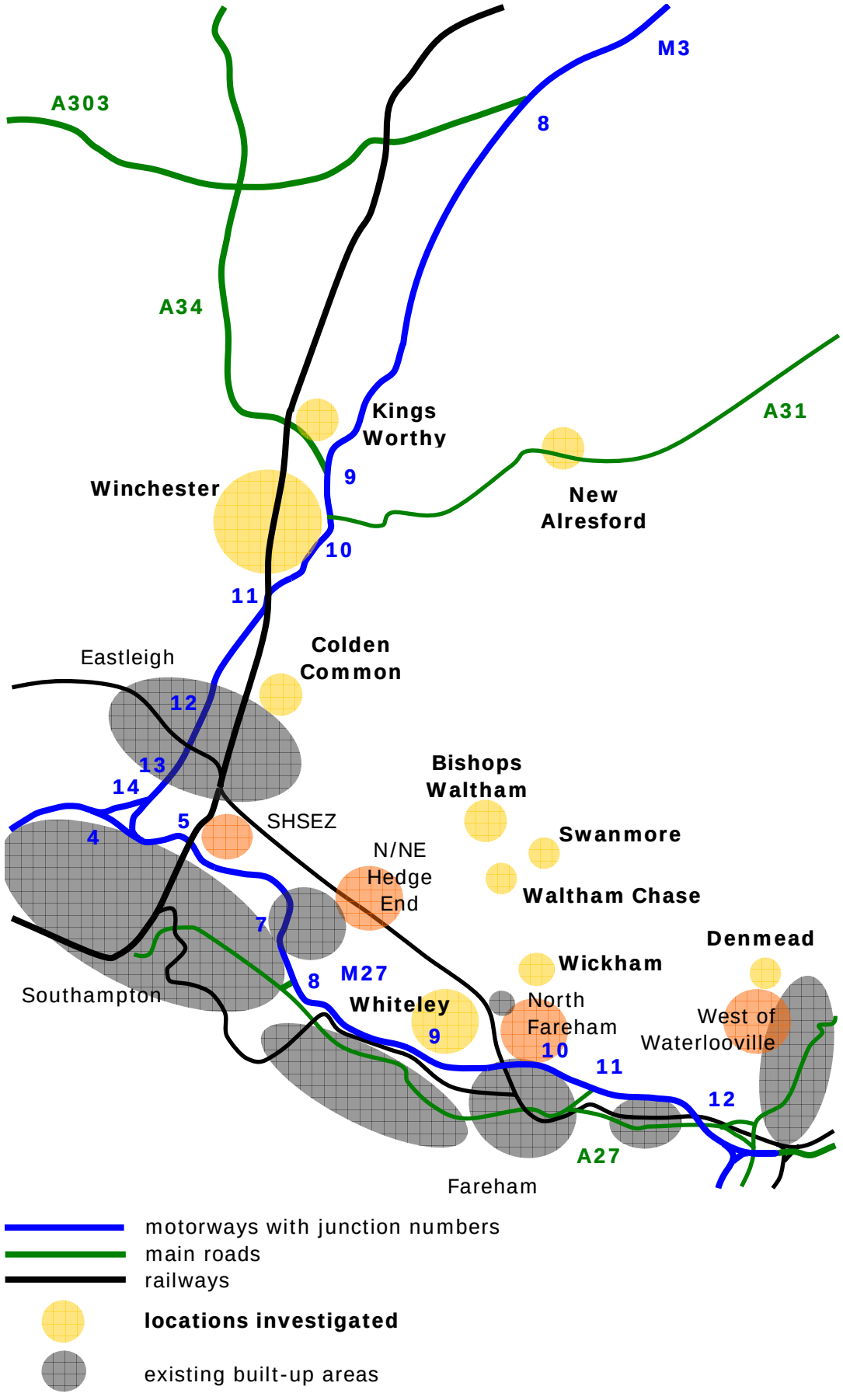


1.4.1 The City Council is developing three key documents within the LDF system:

- **Core Strategy** – this sets out the vision, objectives, spatial development strategy and core policies for spatial planning in the District;
- **Development Provision and Allocations** – this allocates land across the District for housing, employment, retail, leisure and mixed use purposes; and
- An **Area Action Plan** for the Strategic Development Area at North/North East Hedge End – covering all aspects of this large scale development (part in Winchester and part in Eastleigh).

1.4.2 The locations considered are illustrated in Figure 1.2.

Figure 1.2 Locations Considered



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2 Policy Context

2.1 Overview

2.1.1 This chapter reviews the relevant literature to provide the policy context of the LDF and its associated transport assessment. Chapter 3 considers the responses to the Issues and Options report and Chapter 4 provides the evidence to support the analysis.

2.2 Literature Review

2.2.1 A number of published documents have been reviewed for this study. Guidance at national, regional and local levels for transport echo similar themes, that is the promotion of sustainable transport with a recognition that creating additional capacity for car movements can no longer be regarded as a credible approach.

2.3 The South East Plan

2.3.1 The Plan sets out the framework for transport in the Regional Transport Strategy (RTS) alongside other aspects of spatial planning for the region. This emphasizes the role of Manage and Invest including a re-balancing in favour of non-car modes and supporting a more sustainable pattern of development. A number of Regional Hubs and Spokes are identified including Southampton and Portsmouth as Hubs and the M3, M27 and A3 corridors as Spokes. The strategy also includes policies to promote better use of transport networks, improve accessibility, consider charging for road use, restraining parking provision for new sites and promoting travel planning.

2.3.2 The Plan sets out the need to re-balance the transport system with sustainable modes which 'can only be achieved through a spatial approach to planning in which decisions on investment in the transport system are more closely integrated with economic, environmental and social objectives' (paragraph 1.8 of draft Plan). The Regional Transport Strategy provides the framework within which Local Transport Plans are set.

2.3.3 The Secretary of State's proposed changes to the draft Plan strengthen the emphasis on sustainable transport (set out in the Department for Transport's advice in *Towards a Sustainable Transport System*):

> 'Realising the full potential offered by the opportunities to re-balance the transport system provided by the spatial strategy requires the concept of mobility management to be embraced as an integral element of this RTS. Mobility management encourages an approach that embraces the need to develop the transport system in a way that considers more positively the inter-relationship between all elements of the transport system. It creates an integrated approach to managing the demand for movement that capitalises on the opportunities created through the spatial strategy by seeking to adjust, over time, peoples' pattern of travel in a way that increases the use of sustainable modes while maintaining overall levels of access to services and facilities. Climate change is one of the greatest challenges facing the UK and transport has an important role to play. Economic growth and reducing CO^2 are not incompatible and the right balance

between management and investment in infrastructure at local, regional and national level will be critical in achieving that balance.'[2]

2.3.4 The RTS has been re-ordered to reflect the emphasis on re-balancing transport with a new Policy T1:

'Relevant regional strategies, Local Development Documents and Local Transport Plans should ensure that their management policies and proposals:

- Are consistent with, and supported by, appropriate mobility management measures;
- Achieve a re-balancing of the transport system in favour of sustainable modes as a means of access to services and facilities;
- Foster and promote an improved and integrated network of public transport services in and between both urban and rural areas;
- Encourage development that is located and designed to reduce average journey lengths.'[3]

2.4 Hampshire Local Transport Plan 2006 to 2011

2.4.1 The Local Transport Plan (LTP) sets out the transport requirements for the county and for specific areas. In adopting the Reduce – Manage – Invest approach developed in South Hampshire, the LTP outlines an accessibility approach to integrate land use and transport planning. The city of Winchester has agreed to be one of the pilot areas for this long term accessibility strategy approach. Key features of the plan will be:

- Integration of transport and land use proposals within the city;
- The involvement of the local community in the formulation of the plan, making particular use of the Local Strategic Partnership;
- A co-ordinated package of policies and proposals that address the key issues of traffic impact, localized congestion, air quality, and accessibility for pedestrians and cyclists;
- The employment of 'soft measures' reducing the need to travel and the extent of travel and improving information on travel choices;
- Specific measures to address air quality issues, including the promotion of cleaner vehicles and innovative measure such as car clubs, car sharing and 'bikeabout' schemes; and
- The further development of the park and ride strategy for the city, with associated bus priority measures and car parking policies.

2.4.2 Of relevant to the District, the strategy can be summarized as follows:

- **Reduce** the number of journeys made and the average length of journeys, where this does not have disproportionate effects on quality of life or the economy:

[2] Government Office for the South East (July 2008) *Secretary of State's Proposed Changes*: Chapter 8 (Section D4, paragraphs1.8 to 1.11 and Policies T1 and T5 of Draft Plan).

[3] Extract from Secretary of State's Proposed Changes (Policy T1).

- Land use policies to create more sustainable communities where employment and other services are closer to where people live;
- Travel planning and other initiatives to reduce unnecessary journeys, particularly car journeys to work and school;
- Marketing to encourage behavioural change; and
- Discouraging unnecessary journeys through demand management measures, without causing serious impacts on the economy or quality of life.

- **Manage** the existing transport networks effectively, to make the best use of existing capacity:
  - Action to minimise delays and improve journey time reliability, including prompt responses to poor weather, crashes and management of roadworks;
  - Traffic management, including the use of intelligent transport systems and coordinating works on the highway;
  - Junction improvements and local bypasses to improve traffic flow and protect communities;
  - Continuing commitment to road safety and casualty reduction; and
  - Better information to the travelling public and businesses about travel options.
- **Invest** in additional capacity, where this is shown to be essential. Emphasis will be given to investing in public transport networks, particularly those catering for shorter journeys:
  - Improved public transport to provide a real alternative to the car – especially for shorter journeys;
  - Measures to promote public transport links to the principal hubs of Basingstoke, Southampton and Portsmouth and key international gateways;
  - Walking and cycling improvements to make it easier to move around towns and villages; and
  - Road improvements to create more capacity – road widening and new roads.

2.4.3 It should be noted that road construction is included despite severe environmental constraints and lack of funding although capacity increases are being implemented on parts of the M27. In the context of assessing sustainable development locations, it would be reasonable to assume that construction would primarily be to access sites and provide for sustainable modes rather than overall capacity increases to accommodate additional traffic.

2.4.4 For the wider District, the Central Hampshire Transport Strategy, the objectives are:

- To support the local economy and the provision of local facilities;
- To encourage genuine travel choice, promoting alternative modes of transport to the car, especially for intra-urban journeys;
- To improve town centre accessibility;
- To maintain the rural character and protect the environment in developing transport schemes and solutions;
- To reduce road casualties and improve personal safety;

- To improve public transport services;
- To optimise the road network through the innovative use of intelligent transport systems and traffic management techniques;
- To develop a further park and ride site for Winchester;
- To promote social inclusion particularly within the rural communities;
- To consider the needs of people with mobility impairments;
- To raise public awareness to encourage changes in travel behaviour;
- To develop access plans aimed at reducing the need to travel, maintaining the self-contained nature of the towns and managing the future growth in traffic;
- To contribute to improving air quality specifically within Winchester's AQMA. To work with district councils on identifying and treating emerging air quality problems in other areas;
- To consider the transport implications of the future growth of housing as part of the South East Plan;
- To consider the growing leisure demand for recreational access to the countryside, notably in the context of the proposed South Downs National Park; and
- To ensure appropriate infrastructure is provided in association with future development.

2.4.5 These objectives need to be addressed as development proposals are considered but with a robust indication of how measures can be delivered to support them. Selecting some of the objectives as a justification for allocations is not sufficient of a sustainable approach is to be taken.

2.4.6 The LTP promotes 'smarter choices', including travel planning, (schools and workplaces), personalised journey planning, awareness campaigns, car clubs, car sharing, teleworking and home shopping.

2.5 Winchester Town Access Plan

2.5.1 The forthcoming Winchester Town Access Plan[4] aims to improve access and reduce pollution through a combination of measures affecting the provision of local facilities, parking management including park and ride, better parking at the rail station, reducing traffic congestion, providing a replacement bus station, promoting walking and cycling routes, improving public and community transport and introducing travel plans. This is set in the context of heritage requiring new public spaces and enhancing the quality of public spaces and streets. In supporting business, the transport system needs to meet the needs of everyone, balancing ease of access with the need to protect the environment. Further emphasis is placed on improving the pedestrian environment and encouraging the use of public transport.

2.5.2 These aims are in accordance with the principles of sustainable development. For potential development sites in and around the city, the constraints that are evident in the city centre

[4] Winchester City Council (2007) *Winchester Town Access Strategy Consultation Draft*.

will need to be addressed by comprehensive measures throughout the built-up area to support non-car modes. Walking and cycling routes, enhancing the environment in the centre and elsewhere and promoting bus and rail use are essential strands of creating sites which support sustainable transport.

2.6 Adopted Local Plan

2.6.1 The Local Plan[5] conforms with the Hampshire County Structure Plan and accords with the Regional Spatial Strategy and Local Transport Plan. The Local Plan strategy is a sequential approach to meeting development requirements. This includes making best use of land within built-up areas, including reassessing the development capacity of sites already allocated for development, before releasing new greenfield sites. However, Winchester is a rural District, with no large urban areas in need of regeneration. Also, not all 'previously developed land' is within existing settlements and not all land in these settlements has been previously developed.

2.6.2 Previous consultation identified five Key Principles for the Local Plan Review, all of which were supported by over 80% of people responding to a questionnaire sent to all households in the District:

- Plan development and transport together to reduce the need to travel;
- Protect the natural and man-made environment;
- Encourage development in existing built-up areas (brownfield sites);
- Promote economic success; and
- Meet the needs of all sections of the community.

2.6.3 There was strong support for locating new housing that reduces the need to travel and make use of existing facilities and infrastructure. The results showed that car ownership is very high and that if people were prepared to reduce their use of the car, it would be mainly for shopping and leisure trips. Most people saw no need for additional business sites and would be opposed to relaxing policies to allow for additional leisure development in the countryside.

2.7 Transport for South Hampshire 'Towards Delivery' Statement

2.7.1 Transport for South Hampshire (TfSH) acts as a delivery agency of PUSH and represents the transport interests of the three strategic authorities in the sub-region. The Statement[6] sets out the priorities for transport implementation in the context outlined by national, regional and local policy documents and the issues raised by the Stern[7] and Eddington[8] reports. It is predicted that road capacity in the TfSH area will become severely congested in the future and that alternatives to car use must be explored and implemented. The three strands of the strategy are presented:

- Reduce:

[5] Winchester City Council (July 2006) *Winchester District Local Plan Review (Adopted 2006).*

[6] Transport for South Hampshire (April 2008) *'Towards Delivery' Transport for South Hampshire Statement*.

[7] HM Treasury (October 2006) *Stern Review: the economics of climate change.*

[8] HM Treasury (December 2006) *The Eddington Transport Study*.

- Travel planning – for workplaces and schools;
- Land use and car dependency – overcoming the difficulties of dispersed land uses and expectations of self-containment;
- Location of development sites – promoting choice of mode and promoting mixed use developments;
- Public transport improvements rail and bus infrastructure and service improvements;
- Application of technology – improving fuel efficiency and spreading internet applications;
- Car clubs – facilitating car use without car ownership;
- Supplementary Planning Documents – featuring sustainable transport measures;
- Central area parking policies – co-ordinated changes in availability and pricing;
- Workplace Parking Levy – charging employees for use of parking spaces in tandem with public transport improvements; and
- Road User Charging and Congestion Charging - mechanisms to reduce demand and support alternatives to car use.

- Manage:
  - Highways networks – reallocation of road space in favour of buses and high occupancy vehicles or to support improved access for freight vehicles, also Active Traffic Management to make better use of existing infrastructure;
  - Public transport networks:
    - Bus networks responding to changing land uses with Bus Rapid Transit services and considering other forms of service provision;
    - Park and ride and complementary measures;
    - Rail improvements to services and infrastructure;
  - Technology – traffic management and information systems and also smart cards to make payment for public transport easier and more 'seamless';
  - Freight – promoting more efficient movements of goods.
- Invest:
  - Targeting investment to meet regional and sub-regional objectives
  - Access to the sub-region via the M3 Winchester-Southampton corridor with Active Traffic Management on motorways and rail capacity enhancements;
  - Access to Portsmouth and South East Hampshire – Bus Rapid Transit applications and a premium bus network, linked to the North Fareham SDA (and potentially to development sites in the District);
  - Eastern access to Southampton and South West Hampshire – including the Eastleigh Chord to provide direct rail access from the east-west access to Southampton International Airport, bus priority corridors and access to the North/North east Hedge End SDA;
  - Considering the access needs by sustainable modes to the SDAs.

2.7.2 Within that part of the District covered by the TfSH area, Whiteley represents the main opportunity but also the main challenge in alleviating problems on the highway network. Reducing demand from the established parts of Whiteley will be required if additional journeys associated with new sites are generated; the highway network may require greater management and intervention. Public transport provision is essential for these elements to integrate new and existing Whiteley sites with areas beyond.

2.8 Network Rail Proposals

2.8.1 Network Rail is responsible for all railway infrastructure including tracks, power supply and stations. The South West Main Line which serves Micheldever, Winchester and Shawford on the route between Basingstoke and Southampton is a major route[9] and is expected to respond to increased demands for passenger and freight movements. A major issue has been providing adequate clearance for deep sea containers and the constraint of Southampton Tunnel will be overcome by planned gauge enhancement works. Having overcome this, suitable clearance to Reading and beyond needs to be secured as well as a diversionary route and once in place, the volume of traffic from the Port of Southampton is expected to increase considerably. Other pressures include constraints elsewhere on the route including London Waterloo.

2.8.2 While major reconstruction works are planned at various locations, more local improvements could be incorporated at a later date. These include the Eastleigh Chord which would be important in respect of the North/North East Hedge End SDA and SHSEZ and improving access to southern parts of the District. Station improvements may also be possible, working in partnership with the train operators which lease them from Network Rail.

2.9 Highways Agency Proposals

2.9.1 While there are currently no planned schemes affecting the area, several are underway. On the M27, additional capacity is being provided to the west of the M3 intersection between Junctions 3 and 4 and between Junctions 11 at Fareham and 12 at the M275 Portsmouth intersection. The A3 Hindhead Tunnel will remove the major bottleneck on the route between London and Portsmouth, enabling improved access to Waterlooville and South East Hampshire.

2.10 Parallel Studies from Other Hampshire Districts

Access to the Sub-Region

2.10.1 Three studies were commissioned by the South Hampshire strategic authorities covering Portsmouth and South East Hampshire, Southampton and South West Hampshire and the Winchester to Southampton Corridor[10]. These identified transport schemes that were appropriate for taking forward for funding through the Regional Funding Allocation in that they facilitated growth in the sub-region and in doing so, framed the transport strategy for the area.

[9] Network Rail (2008) *Route Plans 2008: Route 3 South West Main Line.*

[10] Peter Brett Associates, Mott Gifford/MVA Consultancy (2008).

2.10.2 Of particular relevance to Winchester District, a number of possible capacity improvements to the trunk road network were considered and costed which suggested that while they would clearly benefit vehicle movement, there were considerable capital costs and environmental constraints such as improvements at M3 Junction 9 (A34 interchange) and Active Traffic Management for the M3.

2.10.3 Rail schemes focussed on the proposed Eastleigh Chord which would allow direct trains to run from Fareham and the North/North East Hedge End SDA to SHSEZ and Southampton. Linked with capacity improvements on the main line between Southampton and Eastleigh, this scheme unlocks a number of other benefits in the southern part of the District as well as facilitating improved access to the gateways of Southampton Port and Southampton International Airport.

2.10.4 Wide-ranging improvements to the bus network were investigated including rapid transit links from the SDAs to major centres involving extensive priority measures and links within the sites themselves to rail stations and local centres.

Harbour Authorities LDF Study

2.10.5 A study was commissioned by Portsmouth, Fareham, Gosport and Havant authorities to consider the transport implications of growth in that part of the sub-region[11]. We understand that this supported the development of the North Fareham SDA and its consequent effects on Knowle, Wickham and other settlements in Winchester District. The scope for rail improvements is very limited and bus rapid transit schemes are being supported, focusing on the A3 corridor (potentially of significance for the West of Waterlooville sites) and the Fareham to Gosport corridor, based on the former railway. Links between large housing and employment centres would form the basis of a rapid transit network.

North / North East Hedge End SDA

2.10.6 A further study is underway to provide detail on the transport impacts of the SDA in terms of trip generation, traffic impacts and the measures needed to reduce car-dependency and promote sustainable modes[12]. This is considering the scope for bus rapid transit to the site, the implications of the proposed highway link to M27 Junction 8 and the impacts of traffic across the network. Further development at North Whiteley is relevant given the proximity of the SDA and the possibility of a Botley Bypass which could link to an extended Whiteley way.

[11] Peter Brett Associates (2008).

[12] MVA Consultancy (due for completion October 2008).

3 Comments on the Issues and Options Report

3.1 LDF Issues and Options Report

3.1.1 The Issues and Options report[13] considers the information obtained to date and the results of community consultation through various processes on the emerging options. It states that:

> '... the way forward for the Core Strategy will be to look at the main areas of the District from a spatial perspective as this will allow us the fully explore the potential that different parts of the District can offer in terms of growth, sustainable development and diversity. This approach will however need to ensure that the different linkages and interactions between the different areas are maintained to guarantee that inclusiveness is not overtaken by the promotion of local distinctiveness within these spatial areas.
>
> 'Accordingly it is proposed to sub-divide the District for the purpose of this Core Strategy into three distinct areas [Winchester Town, market towns/rural area, PUSH area] taking into account the following broad considerations:
>
> - Availability of local employment opportunities.
> - Public transport services to neighbouring settlements and further afield.
> - Range of services and facilities including shops, education and health provision.
> - Opportunities for growth/change and relationship with neighbouring settlements.'
>
> (page 22)

3.1.2 These considerations link the provision of sustainable transport to spatial planning in that development sites need to be determined on the basis of accessibility to facilities including employment opportunities.

3.1.3 A large number of comments were received in response to the Issues and Options report and associated questionnaire. Many of these were concerned with the impact of additional traffic associated with new land uses. Clearly transport is an important issue for many people and the LDF needs to address transport in a broad way to consider not only traffic management measures but crucially how to deliver effective and viable bus services, promote use of local rail services and develop attractive walking and cycling options.

3.2 South East England Regional Assembly

3.2.1 SEERA welcomes the approach which accords closely with the draft South East Plan[14]. In particular, the approach to Winchester town is supported. Affordable housing at all locations is suggested including rural areas. For the southern part of the District, there is a need to focus development in areas with good public transport as a key consideration in determining the locations for growth. Managing the transport network and reducing the need to travel are important elements of the South East Plan and need to be delivered through the LDF.

[13] Winchester City Council (December 2007) *Core Strategy Issues and Options.*

[14] Letter to WCC, 7 February 2008.

Transport infrastructure requirements need to be identified along with an indication of how it will be delivered.

3.3 Highways Agency Comments

3.3.1 The Highways Agency's comments are articulated in correspondence[15] in response to the Issues and Options report. This notes that the M27 within Winchester District currently experiences peak period congestion which will worsen and that certain development sites may also have an impact on the A3(M) and parts of the M3. Concern is expressed that additional traffic would have serious effects on some links and junctions without mitigation measures in place.

3.3.2 For Winchester Town, support is expressed for creating a better balance between employment and housing to reduce high levels of in-commuting. Other potential sites such as Barton Farm, Pitt Manor and Worthy Road are mentioned as having some potential impacts on the highway network for which supporting evidence would be required by the Highways Agency. Justification for potential employment and retail sites would also be required. Park and ride would need to be promoted with evidence that additional trips would not be generated and show how city centre parking stock would be reduced. Exacerbation of air quality problems due to additional traffic associated with development sites should be avoided.

3.3.3 Effort is required to avoid sites at Wickham and Whiteley contributing to more traffic at M27 Junction 9. Similarly, development adding to pressures at M3, M27 and A3(M) junctions would be required to include mitigation measures.

3.3.4 The Agency expresses support for effective alternatives to car use and the implementation of travel plans. On a wider level, the Local Transport Plan's strategy of Reduce – Manage – Invest is supported, particularly the emphasis on infrastructure as a last resort to mitigate the transport impacts of development sites.

3.4 Hampshire County Council

3.4.1 The County Council is generally supportive of the more radical transport scenarios set out in the Issues and Options report[16]. Some additional sites are indicated;

- The **Carfax site** close to Winchester rail station. This is a very accessible location with a large number of bus services as well as rail and linked to walking and cycling routes and within easy reach of the city centre;
- The former **highways depot at Bar End**, currently a temporary car park for County Council staff is also raised as a potential development site given its proximity to the St Catherine's park and ride site. This site has a good daytime bus service but no evening or Sunday service and may be attractive to car users given its location in relation to the M3 motorway. Walking and cycling routes to the city centre will need to be considered to overcome deficiencies;

[15] 15 February 2008 from Highways Agency Network Strategy – South East.

[16] Hampshire County Council response to Winchester City Council's consultation.

- **Chilcomb House** is also located at Bar End close to the M3. The County Council suggests that this could be a mixed use urban extension which could be linked with the park and ride bus service. Consideration is needed of walking and cycling links to the city centre as well as how it could best be incorporated into the local bus network but there may be potential for the site in transport terms.

3.4.2 The County Council strongly supports further development at **Whiteley** with improved accessibility 'achieved in the main through the continuation of Whiteley Way'.

3.4.3 More radical transport improvements for Winchester town are strongly supported including public transport improvements, new and enhanced park and ride and a more comprehensive network of 'green infrastructure'. In addition it is proposed that the current minimum parking standards for new developments in the most accessible locations should be removed in favour of green travel plans with an emphasis on sustainable modes.

3.5 Town and Parish Council Views

Bishop's Waltham Parish Council

3.5.1 The Council considers that Bishop's Waltham and Wickham should not be in the PUSH area[17]. North of Winchester is supported for development as sustainable transport facilities could be provided and Denmead should be a key hub. All the key hubs identified should have further employment opportunities although Bishop's Waltham should be contained within its current boundary.

3.5.2 The Parish Council considers that the North/North East Hedge End SDA would divert investment, employment and public transport away from Bishop's Waltham and Wickham. Major expansion of the Bishop's Waltham, Wickham and Knowle is rejected; growth at Whiteley is strongly supported. An integrated transport system for the PUSH area should be promoted and local employment should be available to reduce commuting.

New Alresford Town Council

3.5.3 Up to 300 dwellings could be accommodated according to the Council[18] which would support local businesses and expand employment opportunities and a proposal to create a new road link to the town centre from the A31 (and hence restrict commercial vehicle access via other routes). Additional development could be accommodated within the established town on brownfield sites but no greenfield sites are supported apart from recreational land and the proposed southern access.

3.5.4 It is noted by the Town Council that public transport services are 'sporadic' in the area. If rural employment is to be promoted, then it is unlikely that bus services could be available to meet workers' needs. Heavy commercial vehicles, notably those to the watercress premises, are considered to be a problem which needs to be addressed.

[17] Response to WCC from Parish Clerk.

[18] E-mailed response to WCC, 16 February 2008.

Whiteley Parish Council

3.5.5 The Council supports a maximum addition of 3,000 houses to the north of Whiteley but a site to the east is not supported due to lack of access to established Whiteley and the need to maintain a strategic gap[19]. Road traffic is considered to be a significant problem and infrastructure deficiencies including roads will be required from the outset.

Wickham Parish Council

3.5.6 The Council strongly supports proposals that strengthen the viability of small rural towns (set out in the South East Plan Policy BE5) and considers that the rural part of the PUSH area should be considered separately from the urban areas[20]. In doing so, the provision of an additional 150 houses maximum to the north of the village is supported. However, additional affordable housing is not considered to be appropriate.

3.5.7 Minimizing the impact of traffic growth on Wickham and its rural surrounds is a 'major concern'. Provision of high quality alternatives to car use is supported and additions to road infrastructure where necessary. The potential impacts of the North Fareham SDA will also need to be mindful of Wickham and Knowle.

Winchester Town Forum

3.5.8 Three main issues were raised by the Forum[21]:

- the lack of **affordable housing** in the city;
- ensuring **economic vitality and prosperity**, particularly the approach to creating higher value jobs, reducing commuting and broadening employment to reduce the proportion of public sector jobs; and
- **quality of life** through retaining cohesive local identity by mitigating against the pressures of development on existing infrastructure and relating well to the established areas.

3.6 Adjacent Local Authority Views

Eastleigh

3.6.1 The North/North East Hedge End SDA is the largest issue affecting both districts and further work to promote a sustainable development will be needed[22], particularly taking into account longer term considerations and the role of the SDA within the wider area. Any development sites close to the Eastleigh boundary will need to take into account traffic impacts.

[19] Letter to WCC from Parish Clerk, 13 February 2008.

[20] Letter to WCC from Parish Clerk, 13 February 2008.

[21] Letter to WCC.

[22] Letter to WCC, 15 February 2008.

Fareham

3.6.2 The expansion of Whiteley to the north is supported in principle[23] provided that it is of appropriate scale and has additional infrastructure including new transport provision. A site to the east of Whiteley is not supported. Expansion of Knowle is also not supported given the need for a gap between Knowle and the SDA.

Havant

3.6.3 The Council suggests further consideration of the reserve allocation of 1,000 dwellings to the West of Waterlooville but is concerned about further housing and employment expansion[24] which would lack coherence with the rest of the MDA. The possibility of development at Woodcroft Farm (Chalton) involving Havant, Winchester and East Hampshire is raised. The consistent approach promoted through PUSH is supported.

[23] E-mail to WCC, 11 February 2008.

[24] Letter to WCC, 15 February 2008.

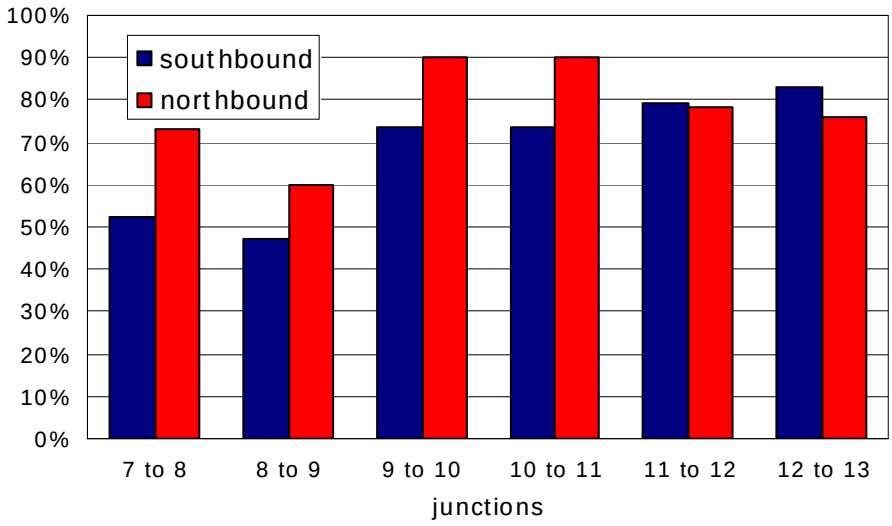
4 Evidence Collated

4.1 Initial Transport Assessment

4.1.1 The initial assessment[25] grouped potential development sites into a series of clusters for which trips rates were determined based on TRICS and 2001 Census data. (For investigation into the Strategic Development Areas in South Hampshire, TRICS and National Travel Statistics data was combined to provide trip rate by purpose with adjustments to take into account the large size of the sites and their level of employment containment.) 2001 Census Journey to Work data was used to determine trip distribution which provides a reasonable indication of AM Peak movements.

4.1.2 Figures 4.1 and 4.2 show data taken from the report which shows the volumes of peak hour motorway traffic in terms of capacities. This indicates that several locations have congestion problems at peak times, notably M3 Junctions 10 to 9 northbound (Winchester Bar End to Winnall), M3 Junctions 11 to 10 northbound (Winchester South to Bar End), M27 Junctions 7 to 5 westbound (Hedge End to Southampton Airport) and M27 Junctions 11 to 12 eastbound (Fareham to Port Solent). The implications is that with further development, particular sites affecting the M27, would add to these peak hour difficulties and create problems at other times and exacerbate existing peak hour problems to an unacceptable extent.

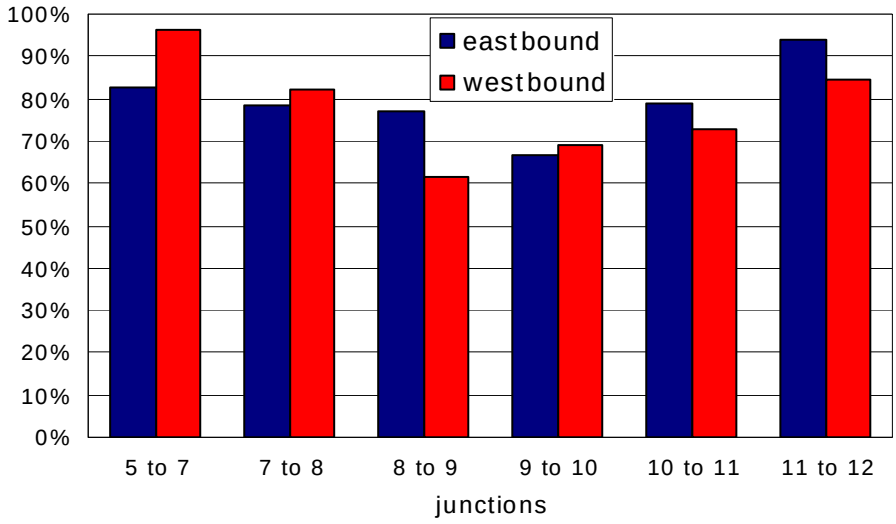
Figure 4.1 Assessment of AM Peak Traffic Flow Relative to Capacity for the M3



Source: WSP 2007

[25] WSP Development and Transportation (November 2007) *Winchester Local Development Framework Transport Assessment.*

Figure 4.2 Assessment of AM Peak Traffic Flow Relative to Capacity for the M27



Source: WSP 2007

4.1.3 Other traffic flow data was obtained for other locations in the District as shown in Table 4.1, for which ample capacity is available currently.

Table 4.1 Traffic Flows AM Peak

Location	Direction	AM Peak Hour Flow	Estimated Capacity	Volume / Capacity
A3 Purbrook	northbound	545	1,296	42%
A3 Purbrook	southbound	651	1,296	50%
A31 Alresford Bypass	eastbound	464	1,296	36%
A31 Alresford Bypass	westbound	593	1,296	46%
A33 East Stratton	northbound	380	1,296	29%
A33 East Stratton	southbound	301	1,296	23%
A34 South of Bullington	northbound	1,978	3,784	52%
A34 South of Bullington	southbound	2,089	3,784	55%
A272 Hinton Ampner	eastbound	351	1,296	27%
A272 Hinton Ampner	westbound	235	1,296	18%
A334 Broad Oak	eastbound	748	1,296	58%
A334 Broad Oak	westbound	758	1,296	58%
A3051 Botley Rd Burridge	northbound	479	1,296	37%
A3051 Botley Rd Burridge	southbound	458	1,296	35%
B3057 Bishopstoke Road	eastbound	459	1,296	35%
B3057 Bishopstoke Road	westbound	588	1,296	45%
B3354 South of Fishers Pond	northbound	712	1,296	55%
B3354 South of Fishers Pond	southbound	243	1,296	19%
Morestead Road	northbound	525	1,296	41%
Morestead Road	southbound	123	1,296	9%

Source: WSP 2007

4.1.4 A scoring system was adopted to indicate the relative merits or difficulties associated with each location. Criteria included:

- Congestion hotspots;
- Proximity to the National Cycling Network;
- Access by walk/cycle;
- Public transport access to employment centres;
- Current provision of local retail;
- Viability of bus service improvements;
- LTP identified public transport improvements; and
- Proximity to rail stations.

4.1.5 While some of the assumptions made were inevitably coarse and somewhat optimistic in terms of delivery and impacts, the study provided an indication of the relative score of each location. Clusters were identified for the purposes of the analysis.

4.1.6 From the scoring methodology adopted, the clusters were assessed to give:

- high scores for Winchester City North (13) and Winchester City South (11);
- medium scores for Whiteley (8.5), West of Waterlooville (7.5), King's Worthy/ Headbourne Worthy (6.5) and Micheldever Station (6); and
- relatively low scores for Alresford (5), Bishops Waltham/Waltham Chase/Swanmore (4.5), Wickham/Knowle (4.5), Colden Common/Twyford/Shawford (4) and Denmead (2.5).

4.1.7 The report notes that the M3 and M27 would suffer from further development at Whiteley and that West of Waterlooville would add to congestion on the A3 and M27.

4.1.8 **Winchester City North** emerged from the Panel Report for the Hampshire County Structure Plan Review as a reserve major development area. Sites in and around the city offer considerable advantages in terms of access to rail services and major roads (A34 and M3) and the range of facilities available within Winchester. There is also considerable scope to extend and improve local transport networks for walking and cycling and to take advantage of local bus services.

4.1.9 **Winchester City South** also offers good access to city centre facilities by walking and cycling and good bus services are in place. A second park and ride site is planned for the southern approach.

4.1.10 **Alresford** is relatively isolated and has no direct rail service but does have unconcested road access via the A31. Walking and cycling is restricted to very local journeys as other centres are too far away for regular journeys.

4.1.11 **Whiteley** does not currently have public transport at an appropriate scale to support sustainable development associated with the proposed sites. There are few bus services and to travel to other centres, walking and cycling are largely impractical; rail services are available from Swanwick and the bus link at Yew Tree Drive makes this a more plausible option but the great majority of journeys are car-based. Considerable changes would need to be made to make this location sustainable in transport terms and

hence the scoring appears to be over-optimistic. Creating bus links to an attractive level would be costly but this is fundamental to the success of the area in transport terms.

4.1.12 **West of Waterlooville** is a major development area and was designated for its proximity to Waterlooville town centre and the progress in improving bus links towards Portsmouth (the A3 'Zip' priority corridor). Hence a relatively high score is reasonable but is undermined by the apparent lack of a direct bus service as we understand that 'Zip' services will not pass through the site and that the site is not being designed with the bus at its core. Hence the sustainability of the site is restricted by its design.

4.1.13 **King's Worthy / Headbourne Worthy** has very limited local facilities and the existing bus link to Winchester would need to be enhanced, probably in association with greater parking controls in the city centre and associated measures.

4.1.14 **Micheldever Station** scores relatively well due to the proximity to rail services. However, this long-standing proposal suffers from its relative remoteness from higher order facilities in Basingstoke and Winchester which undermine the possibility of viable bus services; train capacity increases are also unlikely to accommodate any additional demand. A very large scale development offers greater potential for employment containment but journeys could still be influenced by out-commuting to Basingstoke, London and Winchester rather than by local opportunities. It should be noted that the proposal is not be taken forward at this stage through the LDF process.

4.1.15 The **smaller clusters** currently have limited bus services but could be considered in conjunction with proposals for Strategic Development Areas at North/North East Hedge End (linked with Colden Common/Twyford/Shawford) and North Fareham (linked with Knowle). Other centres such as Alresford and Bishops Waltham offer a range of local facilities but development potential needs to be balanced against maintaining the character of the existing towns and the relative attractions of other centres.

4.2 Employment and Commuting

4.2.1 Employment and economic activities have major implications for transport. Not only do they generate significant amounts of transport demand but if located away from public transport and/or within inaccessible areas they can present limited opportunities for non-car owners and increase car dependency. Getting the spatial distribution right so that employment and economic activities are accessible by a range of sustainable modes is therefore critical if sustainable development and personal accessibility aspirations are to be met.

4.2.2 Census (2001) data highlights the district has a reasonably open economy which is a net importer of labour:

- Winchester district has a resident population of around 107,000 people of which some 78,000 are of working age;

- 42,000 residents are employees and 8,500 are self-employed; and
- 66,000 people worked at workplaces in the District but less than half of these jobs were taken by residents of the District.

4.2.3 Gross Value Added per head of population is the highest in Hampshire (26.1 compared with a mean of 17.7) and the District has the highest mean weekly earnings in the county - £457.20 compared with £366.40 for Great Britain. Only 0.7% of the working age population is claiming Job Seeker Allowance compared with 1.2% for Hampshire. The working population in the District is comparatively well qualified, especially to first degree level.

4.2.4 Winchester has an above average number of people working in public administration, health and education as well as business and financial services but a lower than average number of people employed in manufacturing (see Table 4.2).

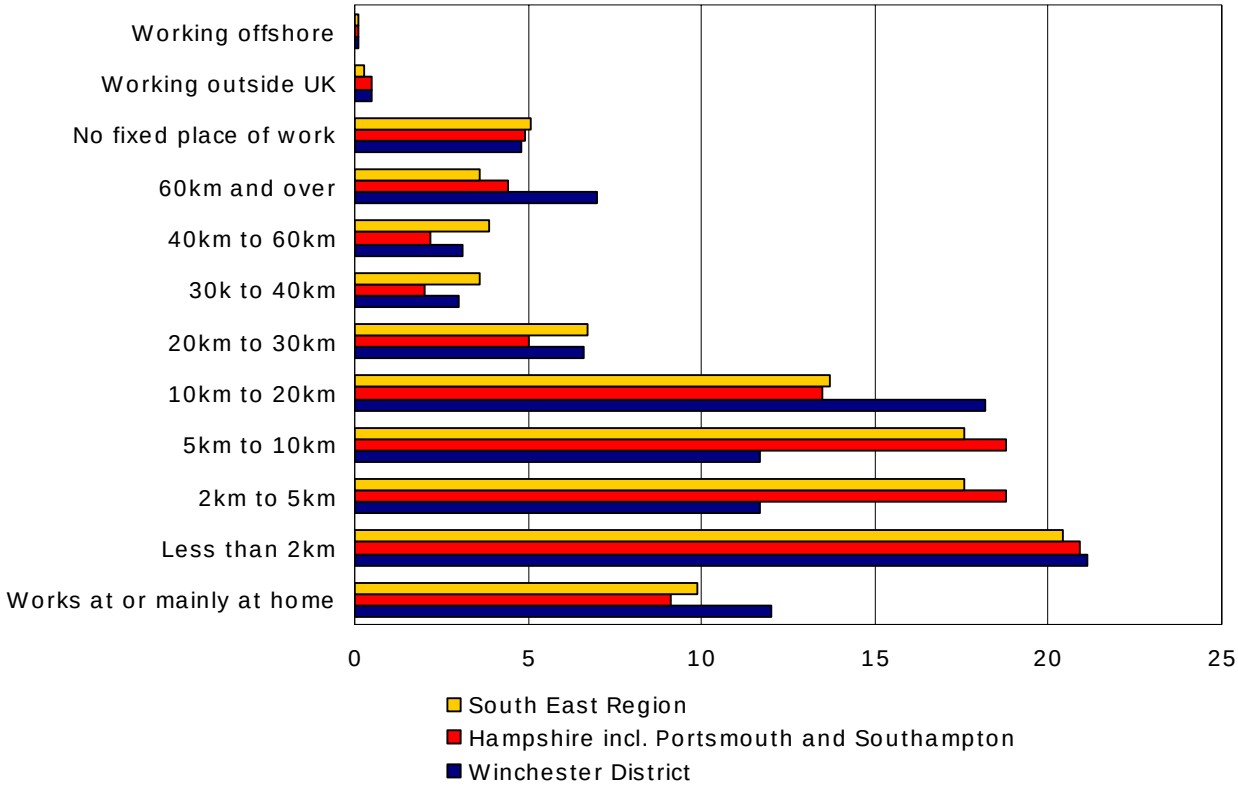
Table 4.2 Main Employment by Sector (2005) (%)

Sector	Winchester District	South East Region	England
Banking, finance and insurance, etc	24.4	23.8	21,4
Construction	4.5	4.4	4.5
Distribution, hotels and restaurants	20.7	25.6	24.3
Manufacturing	6.3	8.8	11.1
Other services	5.6	5.2	5.1
Public administration, education and health	33.0	24.6	26.2
Transport and communications	3.7	6.1	6.1

Source: Government Office for the South East reproduced in Issues and Options report

4.2.5 Figure 4.3 shows the distance travelled to work by District residents compared with Hampshire and the region.

Figure 4.3 Distance Travelled to Work (Resident Population) 2001 (km)



Source: Census 2001

Economic and Employment Land Study

4.2.6 A recent study[26] was commissioned by the City Council to provide an evidence base on economic and employment issues within Winchester District, and specifically identifying priorities for the City Council's economic development service within the context of its Community Strategy, Corporate Strategy and existing Economic Action Plan.

4.2.7 The report identified that while the existing Local Plan (July 2006) emphasises the need to conserve the high quality built and natural environment that characterises a predominately rural district, the draft RSS sets ambitious growth targets for GVA and productivity for the South Hampshire sub-region. The contribution of existing employment land allocations in the southern fringe of the District far exceeds the provision in Winchester town and the rural areas of the district.

4.2.8 The study highlights the RSS Panel argument for an increase in the proposed housing numbers for Winchester excluding the southern fringe. The Panel's argument for this is the fact that Winchester town's economic role is greater than its immediate population due to the high number of public sector activities. However, the Panel was cautious to suggest a greater economic role for the town with concerns that this could impact on regeneration proposals for Southampton and Portsmouth.

[26] SQW Consulting and Cambridge Econometrics (November 2007) *Winchester District Economic and Employment Land Study*.

Economic Overview: Winchester District

4.2.9 In terms of economic performance the District performs well on most measures:

- In the overall Index of Local Competitiveness for 2005 the district was ranked 32nd out of 434; and
- It was the 18th best performing Local Authority District (LADs) in the South East.

4.2.10 However, in terms of business density (ranked 67), rates of start-up (52), economic activity (302) and employment rates (169) it does not measure as strongly. The District's overall rank of 32 in 2005 is also a fall of 7 places since 1997 and within the South East its rank has fallen by 3 places.

4.2.11 A number of key observations are provided:

- The Professional Services sector appears to have grown strongly in both absolute terms and relative to the average for the South East (in 2005 it accounted for 11,000 jobs and was second behind Health and Social Work);
- As employment sectors, Banking & Finance and Insurance have also performed much more strongly in Winchester district than across the South East;
- There are a large number of sectors in which employment in Winchester has been stable whilst it has fallen sharply region-wide (Mechanical Engineering and Electrical Engineering for example);
- Both Public Administration & Defence and Education have declined relatively as employment sectors although they both remain important in Winchester town;
- Winchester has grown as a location for most of the higher order occupations and declined as a location for elementary e.g. clerical services, occupations; and
- Although small, Winchester has retained its skill in agricultural occupations.

4.2.12 48% of the people working in the District live in the District. The most common employment destinations for employment by District residents are Southampton, Greater London, Portsmouth, Eastleigh and Basingstoke; for people from outside the District, Southampton, Eastleigh, Portsmouth and other parts of South Hampshire are the main origins.

4.2.13 Employment self-containment is shown in Table 4.4. The smaller settlements have relatively low self-containment, ranging from 20% to 38%; this is significant in terms of the aspirations for development areas, their relative proximity to competing centres of employment and the transport services available. Self-containment in the District is much less than that achieved in settlements through the country including 61% for Salisbury[27]. Hedge End, while outside the District is a relatively recent large housing and employment area, has self-containment of 25.7%.

[27] Other comparable figures include Guildford 54%, Maidstone 55%, Bath 70%, Hereford 73% and Exeter 80%.

Table 4.3 Employment Self-Containment of Main Settlements

Settlement	Resident Population	Resident Workforce	People Living and Working in the Settlement	Employment Self-Containment
Winchester (city)	41,420	20,135	11,501	57.1%
Bishop's Waltham	6,085	3,140	983	31.3%
Denmead	5,788	2,811	585	20.8%
Alresford	5,102	2,540	972	38.3%
Whiteley	2,195	1,514	309	20.4%
Wickham	1,915	991	271	27.3%
Colden Common	3,249	1,760	369	21.0%

Source: Winchester District Economic and Employment Land Use Study.

Commuting To and From Winchester City

4.2.14 Winchester city has a population of around 41,420, 39% of the population of the District. The city provides 29,492 jobs (2001) and 17,991 travel into the city (61% in-commuters); 8,634 travel out of the city to work. These are large numbers in the context of settlement size which has implications in terms of traffic congestion, demand for parking and public transport provision and capacity.

4.2.15 A majority of in-commuters are from either 'administrative and skilled trades' or 'personal services and sales occupations' (highlighting the dominance of public service jobs in the city). This also illustrates that 'management and professional' occupations can afford to live in the city whilst those in lower occupations cannot.

4.2.16 A majority of in-commuters come from Eastleigh, Southampton and Bishopstoke areas; only 14% of in-commuters come from other parts of the District. Around half of in-commuters live in the M27 corridor.

4.2.17 Greater London, Southampton, Basingstoke and Eastleigh are destinations for a majority of out-commuters. Other destinations include IBM at Hursley Park and Kings Worthy. This highlights that the city mainly serves other larger urban areas and does not serve other smaller outer-lying settlements within the District.

Commuting in the M27 Corridor

4.2.18 The study reviewed in- and out-commuting patterns at Denmead, Whiteley and Wickham. Unsurprisingly, all three areas have strong commuter links with the M27/A27 corridor. Both Denmead and Wickham have very small out-commuting to Winchester city; given that they are functionally independent of it, this is not surprising.

4.2.19 Whiteley is distinct because it has large employment activity and therefore has a strong inflow of commuters, some 4,000 people. A majority of people commute from the Portsmouth and Southampton areas and half those working at Whiteley have 'managerial and professional' occupations. Functionally Whiteley is therefore a part of the economy of South Hampshire.

Commuting in the Rural Area and Market Towns

4.2.20 The report identified Alresford, Bishop's Waltham, Denmead, Whiteley and Wickham as market towns. These areas range quite significantly in size, in terms of resident population, with the largest being Bishop's Waltham (6,085 with 2,226 jobs) and Wickham the smallest (1,915 with 869 jobs).

4.2.21 Table 4.5 shows the in- and out-commuting for the market towns. The figures indicate that while they all retain local residents for employment, there is still a considerable amount of in- and out-commuting. Bishop's Waltham and Alresford have a net imbalance of more people out-commuting than in-commuting while Wickham and particularly Whiteley have more people coming in to work than travelling out.

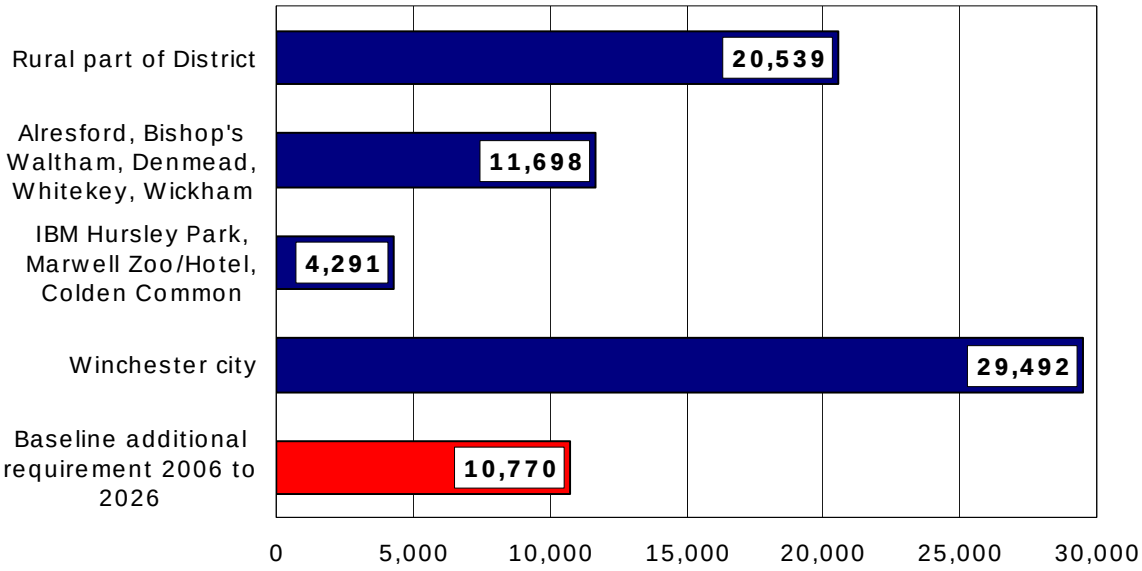
Table 4.4 Market Town Commuting

Location	Total Population	Total Working (Residential) Population	Total Residents Working Within the Area	Total Out-Commuting	Total In-Commuting
Bishop's Waltham	6,549	3,330	1,042	2,288	1,280
The Alresfords	6,019	2,874	1,266	1,608	975
Wickham	2,920	1,209	412	797	1,043
Whiteley	2,194	1,396	320	1,076	4,755

Source: Census 2001

4.2.22 Alresford is the most self-contained of the market towns and the most 'open' is Whiteley. Bishop's Waltham and Alresford (and especially the latter) are more significant in terms of out-commuting to Winchester. Figure 4.4 shows the relative importance of the component parts of the District.

Figure 4.4 Employment



Source: Winchester District Economic and Employment Land Study

Economic Projections

4.2.23 Employment in the district is expected to grow at 0.3% per annum over each five year period up to 2020, which is slightly less than the regional average. Computing services are projected to grow the most within the District and other expected growth sectors include banking and finance, insurance and computing services.

4.2.24 Public administration will remain important. Retailing and distribution are both projected to grow in employment terms although this is significantly lower than across the South East region which should be considered in light of proposals for additional housing. The prospects for employment growth in some potentially high value-added manufacturing sectors appears weak within the District.

4.2.25 The report concludes that the local property market has strong demand for employment uses in the M27 corridor and notably at the southern end of the M3 in Eastleigh Borough. Traffic congestion and other factors are limiting demand around M27 Junction 9.

4.2.26 The demand for further employment uses in Winchester city is restrained by a limited supply of office and industrial land and floorspace and restrictive planning policies. Baseline employment projection for the District is an increase of 10,770 jobs from 2006 to 2026.

4.2.27 A sample of 50 sites that are existing, committed or potential employment sites were selected to be surveyed. Each site was assessed based on a number of criteria including some related to transport: site access and accessibility, and movements and commuting. Based on total scores given for each discreet criterion the sites were given an overall rank. In summary, 42 sites were classified as clearly fit for purpose of which the top 20 are in the M27 corridor.

4.3 Strategic Development Areas

4.3.1 As part of our investigations for TfSH, we considered access to the SDAs at North Fareham and North/North East Hedge End. North Fareham is of relevance in that new bus services/bus rapid transit linking the site with Portsmouth, Fareham and the Gosport peninsula could be extended to Knowle and possibly Wickham. Moving the A32 from its current alignment to a new route towards the M27 Junction 11 was also proposed which has implications for traffic movements through Wickham and beyond. North/North East Hedge End is partly within the District and bus links to the SDA could also serve sites at Whiteley as part of a Fareham/Portsmouth route in addition to links towards Southampton.

4.3.2 The South Hampshire Strategic Employment Zone (SHSEZ) at Eastleigh could attract workers from a wide catchment and is influenced by the construction of the proposed Eastleigh Chord and the Chickenhall Lane Link Road. In securing improved rail and bus links, SHSEZ could draw employees from parts of Winchester District.

4.4 Education Provision

4.4.1 Hampshire County Council's projections for school places[28] take account of the the West of Waterlooville MDA by assuming that one new primary school will be located in the development area with secondary provision at existing schools in the area (within Havant). Further development beyond 2,000 dwellings would require additional provision.

4.4.2 At April 2006 there remained a need for 2.250 dwellings to be completed by 2011 to meet the Structure Plan requirement, including provision at Waterlooville. The allocated development areas at Whiteley, Denmead and Knowle are now largely complete and additional places have been provided at Wickham Primary School to cater for development at Knowle.

4.4.3 The education requirements for the Local Reserve Sites totalling 400 dwellings allocated at Winchester, Alresford and Denmead and the Strategic Reserve Sites at West of Waterlooville (1,000 dwellings) and Winchester City North (2,000 dwellings) will be assessed if these sites are brought forward.

4.4.4 Table 4.6 shows the current capacity of school places. This suggests that there is considerable overcapacity in the Bishop's Waltham area, particularly for primary school children. The location of development is likely to redistribute the demand for school places, not least because allocated areas including Whiteley, Denmead and Knowle are largely complete and provision made within or close to these settlements. A particular concern is Whiteley where additional housing would create additional demand for school places for which additional provision needs to be made. Similarly, should large sites come forward in Winchester town, then new school capacity will be necessary, even taking into account the short term over-capacity.

[28] Hampshire County Council Children's Services Department (2008) *School Places Plan 2008 Consultation Draft.*

Table 4.5 School Places 2008 and 2013

	Net Capacity	Number on Roll	% Surplus Places	Net Capacity	Number on Roll	% Surplus Places
	Jan 2008	Jan 2008	Jan 2008	Jan 2013	Jan 2013	Jan 2013
Primary Schools						
Winchester area	4,284	4,119	4%	4,284	4,458	-4%
Alresford area	1,158	1,114	4%	1,158	1,164	-1%
Bishop's Waltham	1,986	1,700	17%	1,986	1,639	21%
Secondary Schools						
Winchester/Alresford area	4,881	4,727	3%	4,881	4,595	6%
Bishop's Waltham area	1,350	1,312	3%	1,350	1,285	5%

Source: Hampshire County Council

4.5 Retail and Town Centre Uses Study

4.5.1 The retail study[29] sets out the relative merits of settlements in terms of their current retail offer and town centre uses (such as leisure, entertainment, offices, arts, culture and tourism) and identifies the potential for change.

4.5.2 **Winchester** town centre (344 retail/service units) is defined as the main commercial and shopping centre in the District and primarily competes with large centres out side the district, notably Southampton and Basingstoke. Whiteley is also designated as a town centre serving a wide catchment area due to its outlet village role.

4.5.3 Interview survey data indicates that 88.0% of respondents travel by car for their main food shopping with only 3.8% by bus and 5.4% walking. For non-food shopping, 76.8% travalled by car with 8.8% walking and 7.6% using bus. Issues mentioned when questioned regarding possible improvements included more and cheaper car parking for Winchester and more car parking for other centres; around 2% of respondents mentioned better bus services in relation to Whiteley and Wickham.

4.5.4 The report states that 'Good accessibility to convenient car parks is important to the vitality and viability of [Winchester] town centre' (paragraph 5.15) and notes that there are 4,008 public off-street spaces of which 51 are season ticket only and 53 are for disabled users.

4.5.5 Other centres were considered:

- **Bishops Waltham** with 54 retail units is considered to have a reasonable range of shops and services and has 162 off-street parking spaces although the bus services are described as reasonably good;
- **Denmead** with 17 retail units includes a considerable amount of parking for a centre of its size but although the scope for additional demand from the West of Waterlooville major development area is noted, the larger retail facilities in Waterlooville and Havant will limit Denmead's potential;

[29] Nathaniel Lichfield and Partners (November 2007) *Winchester City Council retail and town centre uses study.*

- **New Alresford** has 60 retail units and 125 public off-street parking spaces but pedestrian movements are impeded by traffic, street furniture and lack of formal crossing points;
- **Whiteley** has 53 retail and service units including a large superstore and 1,347 parking spaces (including Tesco) of which 49 are for disabled users; and
- **Wickham** is a relatively small centre with 31 retail units and 175 parking spaces of which 5 are for disabled users. Some traffic congestion was noted and a lack of facilities for pedestrians was evident.

4.5.6 Growth to meet predicted future demands can be accommodated by planned developments including Silver Hill in Winchester in the short term with potential additional sites at Cossack lane car park and Middle Brook Centre. Other smaller possibilities have been identified for the medium term beyond the defined city centre e.g. rail station and Worthy Lane car park. Elsewhere in the District, the largest opportunity is at Whiteley with smaller opportunities in New Alresford, Bishops Waltham, Wickham and Denmead.

4.5.7 For employment, the District employs 54,867 people (ONS 2001) and Winchester has 32,200 in-commuters compared with 21,600 out-commuters; the job density is 1.16 compared with 0.84 for Hampshire reflecting the level of in-commuting.

4.6 Facilities Survey

4.6.1 The City Council's audit of rural facilities[30] includes a matrix of the facilities currently available. This sets the range of facilities available at each of the rural locations identified. These can be grouped by location and types of facility as shown in Table 4.6.

4.6.2 The facilities survey data suggests that while many of the smaller settlements have very few facilities, clusters of settlements offer a wider range, particularly where a town is available within easy reach. Taking advantage of the facilities provided by larger centres, the rural areas around Winchester, New Alresford, Bishops Waltham and Wickham can support local facilities although these may need to be accessed by car where no regular public or community transport services are in place and where walking or cycling are impractical. Not surprisingly, the Winchester area has far more facilities than the other areas. However, Wickham, New Alresford, Meon Valley and Bishops Waltham offer a reasonable range of facilities when the various rural areas with a focus on a small town are considered. Colden Common, Micheldever, Denmead, Whiteley and Botley are comparatively poor although places in the southern part of the District are within reach of much larger settlements. These include Waterlooville, Portsmouth, Fareham, Hedge End, Eastleigh and Southampton which will draw activity away from rural communities, especially if linked with other activities such as employment.

[30] Winchester City Council (October 2007) *Rural facilities audit technical paper LDF.*

Table 4.6 Rural Facilities Audit

Location		Population	Post office	General Store and PO	Petrol Station with/without shop	General Store	Other retail	Primary School	Secondary School	Further Education	Doctors	Dentist	Chemist	Church	Community Hall	Pub	Banks/cashpoints	Mobile Library	Restaurant/café	Recycling facilities	Other Facilities	Employment	Childrens Play areas	Outdoor sports Facilities	Bus - Availability and Access Score	Rail Access
Winchester area	1	15,677	5	4	2	1	18	7	0	0	4	1	0	19	17	15	4	13	2	8	8	1	24	19	18	4
Wickham area	2	6,153	1	1	0	3	3	2	1	1	0	0	0	6	5	8	1	8	0	5	6	0	11	7	5	0
New Alresford area	3	4,376	0	1	1	0	5	2	0	0	0	0	0	12	9	9	0	9	0	5	2	0	10	5	4	0
Meon Valley area	4	3,390	0	3	2	0	3	3	0	0	2	0	0	7	6	9	1	7	1	4	1	0	7	4	1	0
Bishops Waltham area	5	6,580	2	1	1	1	2	4	0	0	0	0	0	6	3	7	0	5	1	4	1	0	7	5	4	0
Colden Common		3,480	0	1	0	2	3	1	0	0	1	1	0	1	2	3	1	0	1	1	0	0	5	2	2	0
Micheldever area	6	1,218	0	1	0	0	1	1	0	0	1	0	0	3	3	3	0	3	0	2	0	0	3	2	0	2
Denmead/Hambledon		6,797	0	1	0	1	0	1	0	0	1	0	0	1	1	1	1	1	1	1	0	0	2	2	2	0
Whiteley		2,195	0	1	1	1	1	1	0	0	0	0	1	0	1	1	0	1	0	1	2	0	3	1	1	0
Botley area	7	876	0	0	0	0	0	1	0	0	0	0	0	2	1	3	0	1	0	1	0	0	1	2	1	1
Total		50,742	8	14	7	9	36	23	1	1	9	2	1	57	48	59	8	48	6	32	20	1	73	49	38	7

1 Abbots Worthy, Avington, Chilcomb, Compton, Crawley, Easton, Headbourne Worthy, Hunton, Hursley, Itchen Abbas, Kings Worthy, Littleton, Martyr Worthy, Otterbourne, Shawford, South Wonston, Sparsholt, Stoke Charity, Sutton Scotney, Twyford, Wonston

2 Hundred Acres, Knowle Village, Newtown (Soberton Heath), North Boarhunt, Shedfield, Shirrell Heath, Southwick, Swanmore

3 Beauworth, Bighton, Bishops Sutton, Bramdean, Cheriton, Gundleton, Hinton Marsh, Itchen Stoke, Kilmeston, New Cheriton, Northington, Old Alresford, Ovington, Owlesbury, Southdown, Swarraton, Tichborne

4 Corhampton, Droxford, Exton, Meonstoke, Soberton, Soberton Heath, Warnford, West Meon

5 Beeches Hill, Dean, Dundridge, Durley, Durley Street, Lower Upham, Preshaw, Upham, Waltham Chase

6 East Stratton, Micheldever, Micheldever Station, Northbrook, West Stratton, Weston Colley, Woodmancott

7 Curbridge, Curdridge

Source: Winchester City Council

4.7 Public Transport Capacities

Rail

4.7.1 Table 2.6 shows the levels of use of rail stations in the District. Shawford has a limited service and the very similar number of entries and exists suggests that most are regular users making return journeys. Botley serves a wider catchment with trains to Fareham, Eastleigh and beyond. Micheldever attracts users from the rural catchment for its hourly service. Winchester is well used by an increasing number of people reflecting the high number of trains both towards Southampton/Bournemouth/Weymouth and Portsmouth and to Basingstoke, Woking and London Waterloo.

Table 4.7 Station Entries and Exits

	Entries	Exits	Total	Change
Winchester				
2002/03	1,470,853	1,471,791	**2,942,644**	100.0
2004/05	1,582,069	1,578,437	**3,160,506**	106.9
2005/06	1,647,843	1,640,194	**3,288,036**	110.5
Botley				
2002/03	33,805	35,858	**69,663**	100.0
2004/05	39,396	41,530	**80,925**	113.9
2005/06	42,863	45,123	**87,987**	120.8
Micheldever				
2002/03	22,008	23,363	**45,371**	100.0
2004/05	28,298	30,437	**58,735**	122.8
2005/06	37,207	39,090	**76,296**	140.5
Shawford				
2002/03	24,594	24,547	**49,141**	100.0
2004/05	24,234	24,457	**48,691**	99.1
2005/06	27,195	27,850	**55,045**	110.7

Source: Office of the Rail Regulator

4.7.2 The capacity of the railway can be measured in terms of route and track capacity and by train capacity. The main London to Southampton line is heavily used and there are capacity difficulties in a number of places including the approaches to London Waterloo and Clapham Junction, conflicting movements at Woking, Basingstoke and Eastleigh and constraints in the area around St Denys and Southampton Tunnel. Demand for train paths is high and there is a mix of local and longer distance passenger trains and freight, much of which is associated with expanding activity at the Port of Southampton. It would be difficult to accommodate any additional trains on the route without major re-signalling works as there is high demand for trains to both London and Reading.

4.7.3 In addition, morning peak trains towards London are heavily loaded as are evening journeys in the return direction. Cross Country services to Reading and the Midlands are also regularly overcrowded. It will not be possible to operate longer trains until platforms have been lengthened which poses a number of practical difficulties, not least at London Waterloo. Car parking at stations is also under pressure at Winchester and elsewhere, notably Southampton Airport Parkway. Limited car parking is available at Botley, Micheldever and Shawford stations.

Bus

4.7.4 Obtaining reliable figures for bus use is difficult due to commercial sensitivities and aggregation of data and hence identifying profitable services individually is problematical. However, the LTP target is to increase bus use by 10% from 2000 to 2010 and figures

suggest that the decline in levels of use has halted[31] and that 'significant' increases have been reported in line with the target set. For the county as whole, around 30 operators provide 320 services operate a total of 34 million kilometres per year carrying 27 million passengers.

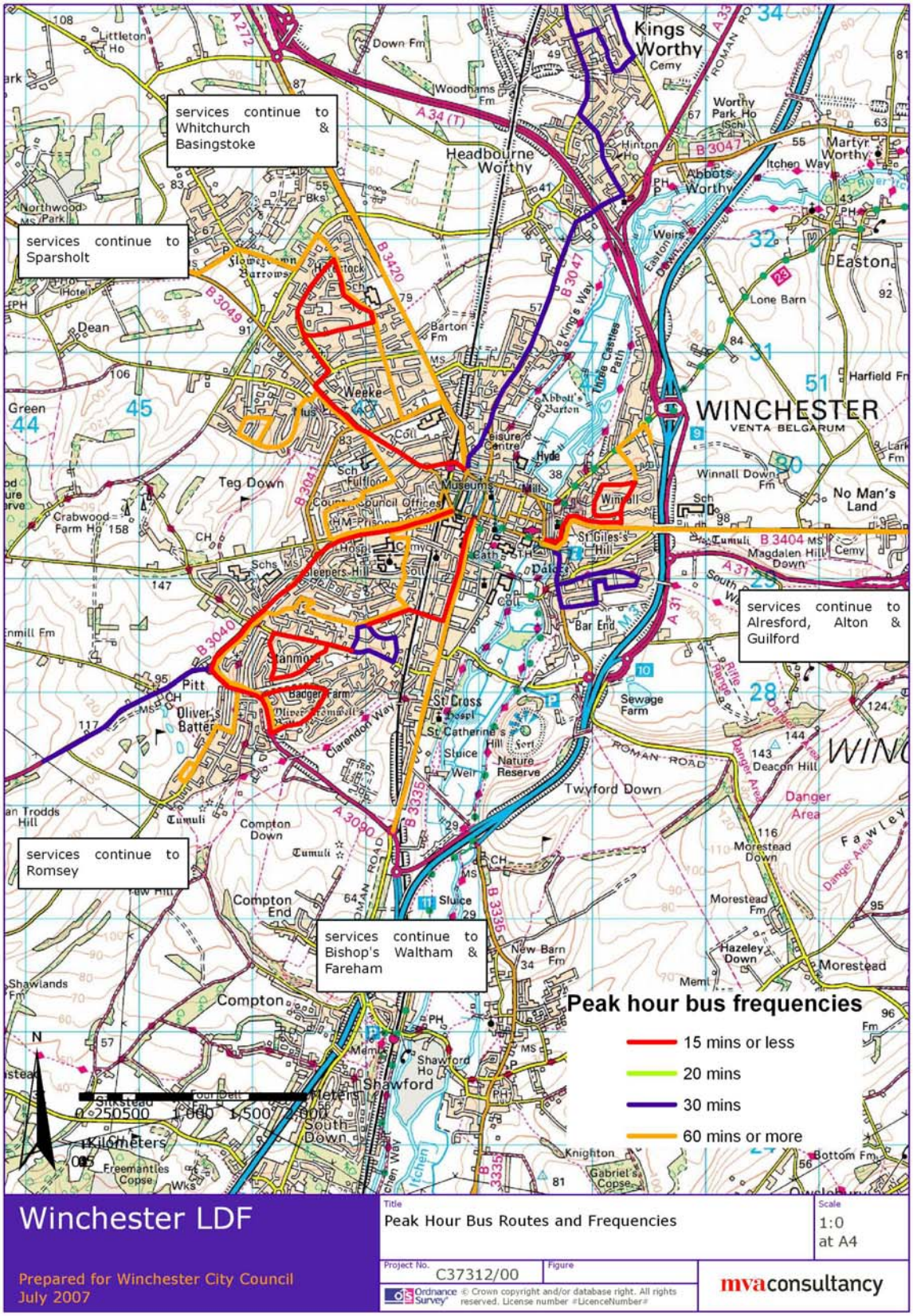
4.7.5 The LTP has delivered a number of Quality Bus Partnerships and infrastructure works which have supported this growth. The one example in the District that is quoted is service 5 in Winchester city (Winnall, city centre, Badger Farm) which has experienced 20% growth but does not benefit from extensive priority measures. This has been in response to a number of factors and demonstrates that growth is achievable in urban areas but is much harder to achieve in smaller and rural communities. Figure 4.5 illustrates the weekday peak period frequency of services in the city.

4.7.6 In the District, 15.7% of households do not have access to a car and hence alternative transport is essential to maintain social inclusion and access to basic facilities. This needs to be achieved commercially i.e. with profits for operators wherever possible to avoid ongoing subsidy by local authorities. Therefore the financial viability can be dictated by the number of users compared with the operating costs and failure to secure an adequate number of users will result in withdrawal.

4.7.7 Capacity exists on many bus services, particularly during off-peak periods and greater use could be made of existing services. In addition, rapid links could be provided to some locations, notably Whiteley, to provide an acceptable alternative to car use.

[31] Hampshire County Council (2007) *Hampshire Local Transport Plan 2001 to 2006 Delivery Report.*

Figure 4.5 Peak Bus Service Frequencies in Winchester City



4.8 Accessibility Data

4.8.1 We have considered accessibility for the District using Accession analysis. Accession was developed by MVA Consultancy to the Department for Transport's specification and has been used throughout the country by local authorities in compiling Accessibility Strategies as part of their LTP submissions. We have used input data obtained from Hampshire County Council and mapped this to show the relative accessibility of specified locations by walking, cycling and public transport. The initial analysis provides the basis for comparative assessment of different locations in the District. Figures 4.6 to 4.11 illustrate the levels of accessibility for the District (it should be noted that white areas on the plans denote no data due to the definition of Accessibility inputs).

4.8.2 Access to schools is generally good (see Figure 4.6) although some children living in the southern parishes have better access to schools in Fareham compared with Winchester. The University of Winchester (Figure 4.7) can be accessed by public transport across the District although there are other opportunities available at Portsmouth, Southampton and Solent Universities. Similarly, colleges (Figure 4.8) are mainly located in Winchester city and hence public transport access is available in the immediate surrounds; other opportunities exist in Portsmouth, Fareham, Eastleigh, Havant and Southampton.

4.8.3 Hospitals (Figure 4.9) have large catchment areas and the Royal Hampshire County Hospital in Winchester is well located in terms of local bus services and bus access from the wider area with links to the rail station. Two major hospitals are also used by District residents – Southampton General/Royal South Hampshire and Queen Alexandra in Cosham. The centralization of health facilities means that many staff, patients and visitors travel further to hospitals than previously. In the north of the District, facilities at Andover and North Hampshire Hospital (Basingstoke) are also available.

4.8.4 Employment opportunities are available throughout the District (Figure 4.10) although agglomerations of activity take place in Winchester city, Whiteley/Segensworth and the smaller settlements and include higher order jobs for which there tend to be larger catchments. Clearly Portsmouth, Southampton and other major centres provide other opportunities and the emergence of SHSEZ will have implications of the labour market and commuting patterns.

4.8.5 In terms of car access to Winchester city, journey times are good with the furthest parts of the District being within 40 minute journey isochrones. However, this may mask peak period congestion problems, especially those connected with the M27 and M3 corridors and accessing car parking in the central area of the city.

Figure 4.6 Public Transport Accessibility to Schools

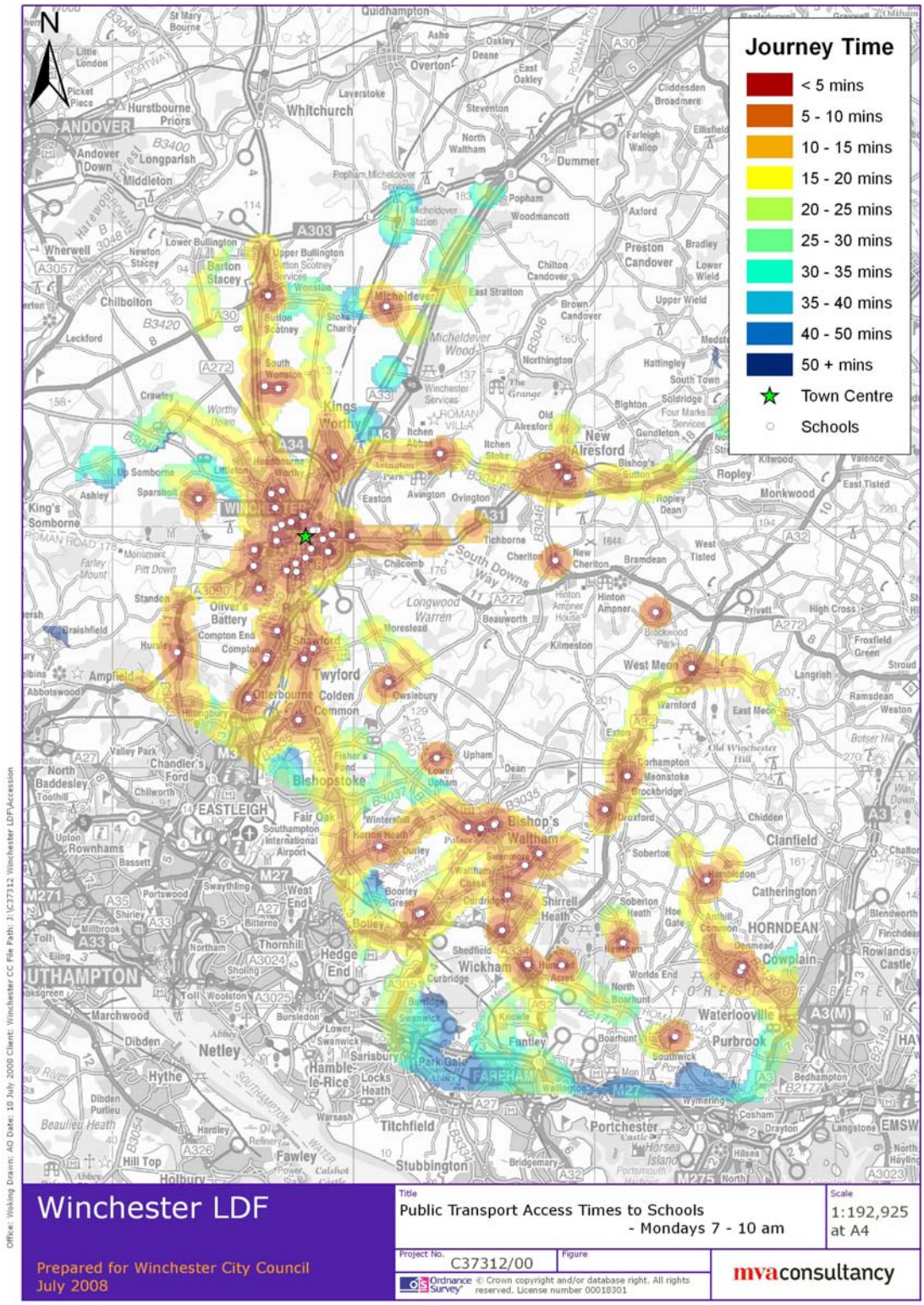


Figure 4.7 Public Transport Accessibility to University

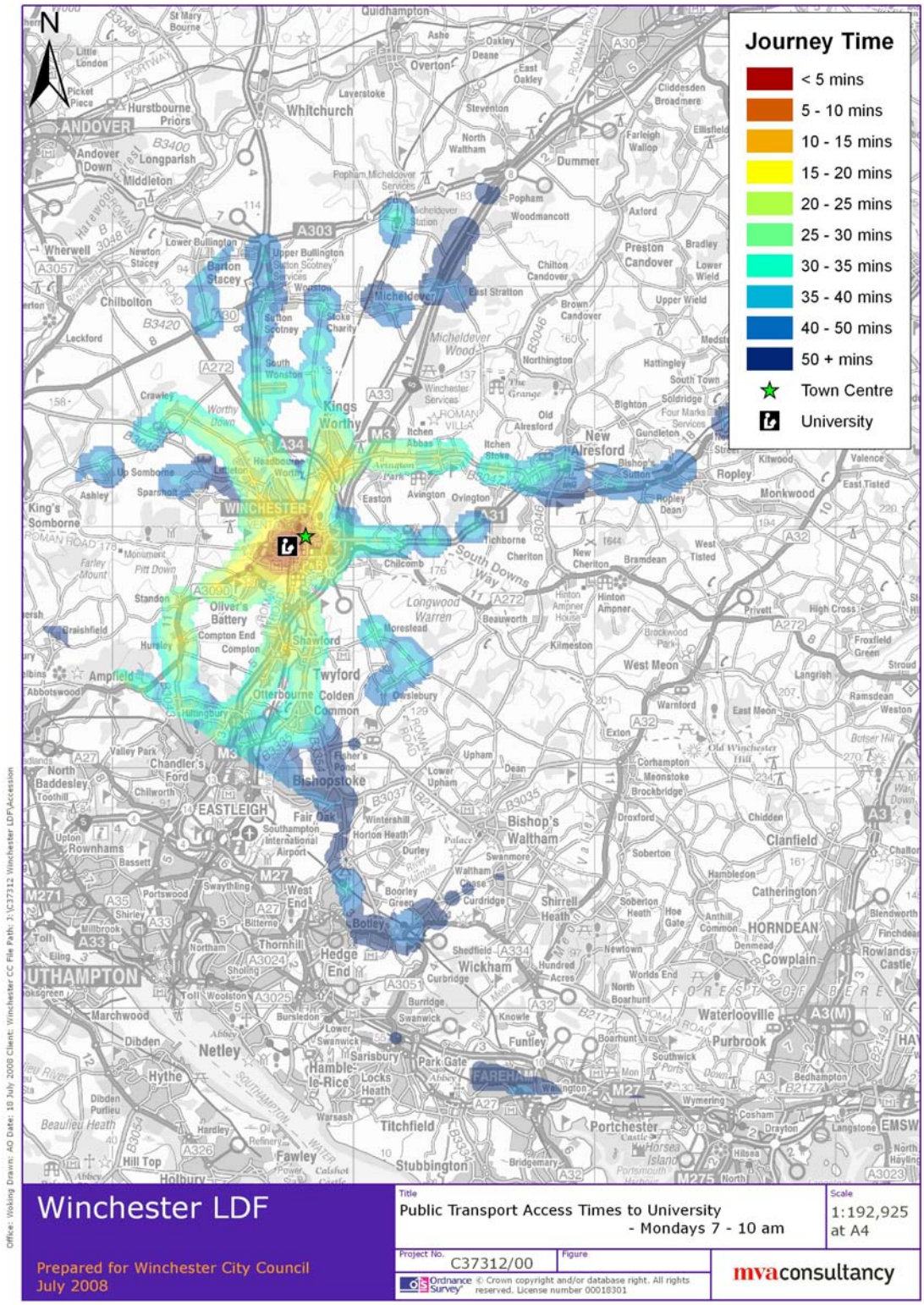


Figure 4.8 Public Transport Accessibility to Colleges

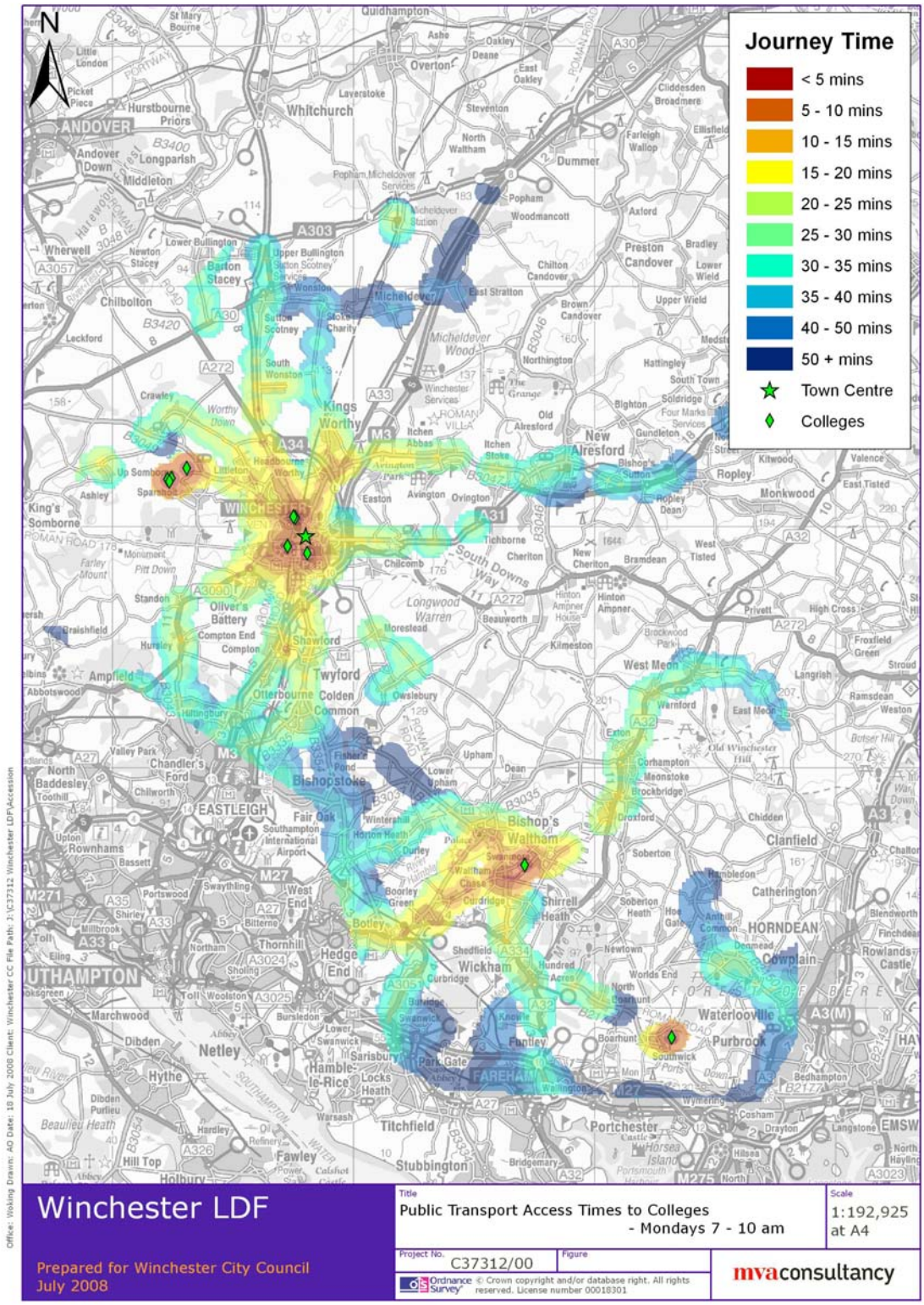


Figure 4.9 Public Transport Accessibility to Hospitals

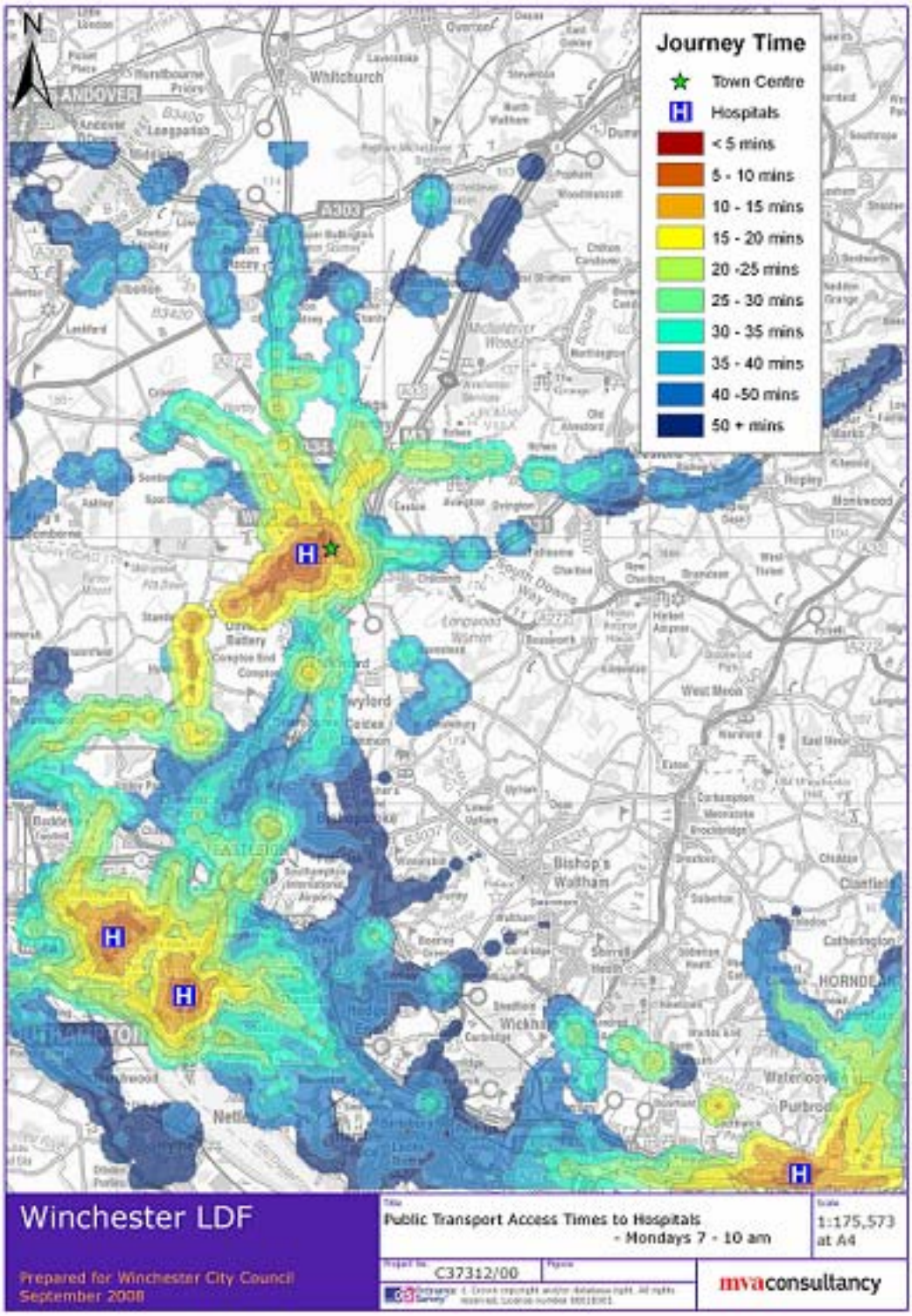


Figure 4.10 Public Transport Accessibility to Employment

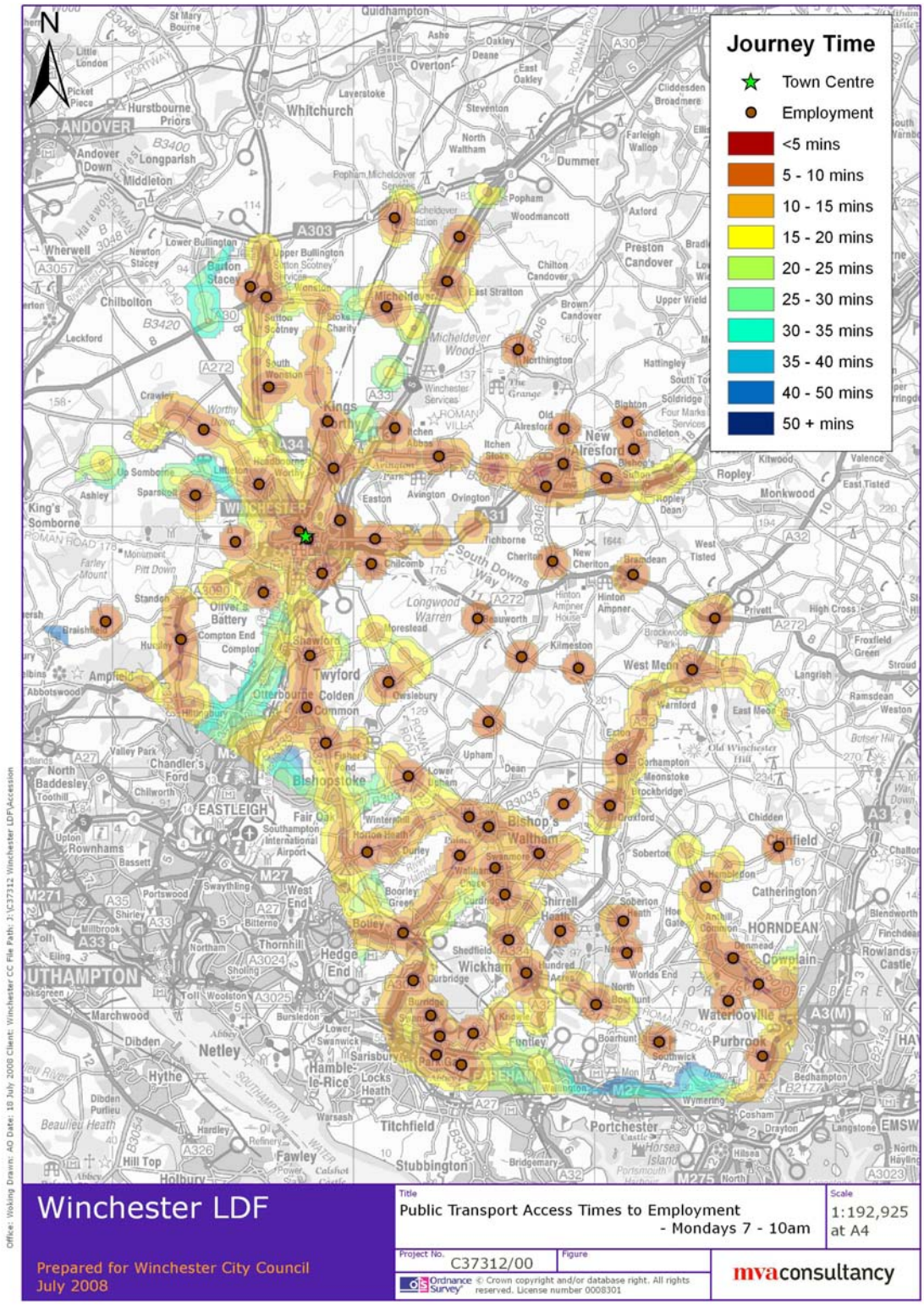
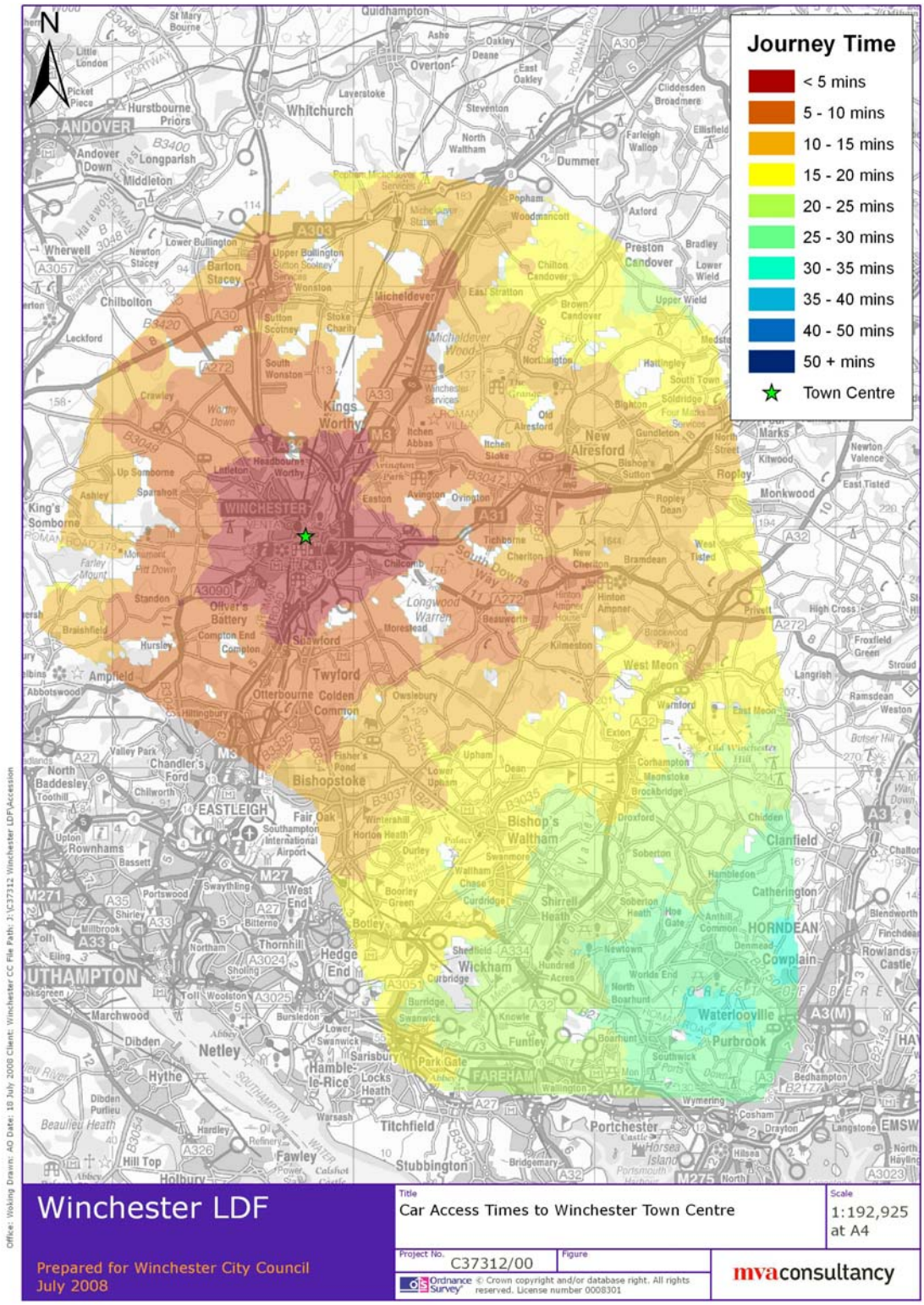


Figure 4.11 Car Access Times to Winchester City Centre



5 Highway Data

5.1 Highway Capacities

5.1.1 Traffic count data has been obtained from Hampshire County Council for the radial routes into Winchester city and for other key routes in the District. Data for motorway and trunk roads has been obtained from the Highways Agency.

5.1.2 The figures show changes over time and indicate the current utility of the routes in terms of the relationship between their capacity and the levels of traffic using them. This is largely confined to link flows and capacities although junction capacities will define the efficiency of the route as a whole. This is a particular issue for the M3 around Winchester and the M27, both of which have numerous junctions and tend to provide for local journeys as well as longer distance strategic journeys.

Routes in Wider District

5.1.3 Data suggests that all the main routes across the District operate well within capacity (see Table 3.1). While these link flows indicate spare capacity, junctions at key locations are critical, notably the A34 intersection with the M3 at Junction 9 at Winnall and the network in the M27/A27 corridor.

Table 5.1 Estimated Capacity of Main Routes in District

Location	Direction	AM Peak Hour Flow	Estimated Capacity	Volume / Capacity
A3 Purbrook	northbound	545	1,296	42%
A3 Purbrook	southbound	651	1,296	50%
A31 Alresford Bypass	eastbound	464	1,296	36%
A31 Alresford Bypass	westbound	593	1,296	46%
A33 East Stratton	northbound	380	1,296	29%
A33 East Stratton	southbound	301	1,296	23%
A34 South of Bullington	northbound	1,978	3,784	52%
A34 South of Bullington	southbound	2,089	3,784	55%
A272 Hinton Ampner	eastbound	351	1,296	27%
A272 Hinton Ampner	westbound	235	1,296	18%
A334 Broad Oak	eastbound	748	1,296	58%
A334 Broad Oak	westbound	758	1,296	58%
A3051 Botley Rd Burridge	northbound	479	1,296	37%
A3051 Botley Rd Burridge	southbound	458	1,296	35%
B3057 Bishopstoke Road	eastbound	459	1,296	35%
B3057 Bishopstoke Road	westbound	588	1,296	45%
B3354 South of Fishers Pond	northbound	712	1,296	55%
B3354 South of Fishers Pond	southbound	243	1,296	19%
Morestead Road	northbound	525	1,296	41%
Morestead Road	southbound	123	1,296	9%

Source: WSP.

5.1.4 Additional data for 2006 and 2007 has been obtained for routes in the District as shown in Table 3.2. With the exception of the A34(T), all operate well within capacity. While the A34(T) is a dual carriageway, the main constraint is the merge from the A33and the junction with the M3 at Winnall where delays occur.

Table 5.2 Daily Traffic Flows at Selected Locations

Location	Year	Powered Two Wheelers	Car	Bus	Light Goods Vehicles	Heavy Goods Vehicles	All Motor Vehicles
A31 Alresford Road near Ovington	2006	381	29,840	231	4,048	1,843	36,343
A32 Warnford Road, Meonstoke	2006	122	2,966	15	608	113	3,824
A32 south of Wickham	2006	316	18,452	129	2,508	824	22,228
A34 Headbourne Worthy	2007	466	60,889	188	8,255	8,481	78,279
A272 near Lane End Down	2006	134	6,798	19	1,018	421	8,391
A272 Winchester Road, west of Petersfield	2006	336	19,520	72	3,663	1,488	25,078

Source: DfT.

5.1.5 The trunk road network offers many opportunities for local journeys, a particular feature of the M3 between Southampton, Eastleigh and Winchester and the M27 between Southampton and Fareham. Congestion is evident at peak times, for example the M3 Twyford Cutting at Winchester and link capacities of 90% (Junctions 11 to 10 and 10 to 9) suggest that future problems could be expected (see Table 3.3). Similarly, the M27 is heavily used – up to 96% capacity in the AM Peak – which suggests that any additional vehicles will cause congestion.

5.1.6 Reliable congestion data is difficult to obtain but sample CJAMS (Congestion and Journey Time Acquisition and Monitoring) data has been made available by Hampshire County Council. CJAMS processes data (supplied by DfT) to reconstruct vehicle movements from GPS data to calculate journey times and speeds. These speeds are then attributed to roads to build a database of traffic conditions across the network at sub-50 metre resolution. Data has been collated for term times, Mondays to Fridays, January to December 2007. Table 5.3 includes some data for Winchester city and for the route between Bishop's Waltham and Shedfield. The figures indicate that delays are negligible with the exception of Easton Lane approaching M3 Junction 9 in the PM Peak.

5.1.7 Mapping provided from CJAMS for the area surrounding Winchester city for the AM Peak 0800 to 0900 show that the greatest delays occur on the M3, Worthy Road to Alresford, Stockbridge Road, Badger Farm Road, Romsey Road and St Cross Road inbound. The grading of the CJAMS data does not indicate the relative severity beyond 31 seconds but observation suggests that these routes can have substantial queues in the Am Peak. The main causes are the convergence of Stockbridge Road, Andover Road and Worthy Road/Worthy Lane at the City Road junction and the Southgate Street approach to the city centre from St Cross Road. The constraints of the city centre are unlikely to be overcome easily but transferring some journeys from car to other modes would ease the congestion experienced. For Romsey Road, much of the queue dissipates beyond Chilbolton Avenue in the inbound direction.

Table 5.3 Sample Congestion Data

Location		AM Peak		PM Peak	
		0700 to 0800	0800 to 0900	1600 to 1700	1700 to 1800
Winchester city					
Easton Lane outbound	north of Winnall Manor Road*	**50.24**	**136.69**	**33.67**	**273.58**
	(* sample less than 5 vehicles)				
	Mean (minutes)	**0.84**	**2.28**	**0.56**	**4.56**
St Cross Road northbound	Hockley Link	2.30	8.25	3.59	2.00
	St Cross Rbt to Stanmore Ln jcn	44.03	84.78	26.80	17.74
	Stanmore Ln jcn to High Street	48.47	86.87	58.59	57.71
	Mean (seconds)	**31.60**	**59.97**	**29.66**	**25.82**
	Mean (minutes)	**0.53**	**1.00**	**0.49**	**0.43**
St Cross Road southbound	High Street to Stanmore Ln jcn	47.64	36.56	63.08	68.09
	Stanmore Ln jcn to St Cross Rbt	20.40	26.78	36.43	41.95
	Hockley Link	9.12	13.03	6.22	6.31
	Mean (seconds)	**25.72**	**25.46**	**35.24**	**38.78**
	Mean (minutes)	**0.43**	**0.42**	**0.59**	**0.65**
Bishop's Waltham					
B2177 Winchester Road southbound					
	Mean (seconds)	**7.33**	**7.16**	**5.65**	**6.09**
	Mean (minutes)	**0.12**	**0.12**	**0.09**	**0.10**
B2177 Winchester Road northbound					
	Mean (seconds)	**5.27**	**5.25**	**2.18**	**1.43**
	Mean (minutes)	**0.09**	**0.09**	**0.04**	**0.02**

Table 5.4 M3 and M27 Link Flows and Capacities

Junctions	Direction	AM Peak Hour Flow	Estimated Capacity	Volume/ Capacity
M3				
7 to 8	southbound	3,075	5,888	52%
8 to 9	southbound	1,846	3,925	47%
9 to 10	southbound	4,339	5,888	74%
10 to 11	southbound	4,339	5,888	74%
11 to 12	southbound	4,656	5,888	79%
12 to 13	southbound	4,891	5,888	83%
8 to 7	northbound	4,301	5,888	73%
9 to 8	northbound	2,350	3,935	60%
10 to 9	northbound	5,312	5,888	90%
11 to 10	northbound	5,312	5,888	90%
12 to 11	northbound	4,623	5,888	79%
13 to 12	northbound	4,467	5,888	76%
M27				
5 to 7	eastbound	4,866	5,888	83%
7 to 8	eastbound	4,629	5,888	79%
8 to 9	eastbound	4,544	5,888	77%
9 to 10	eastbound	3,933	5,888	67%
10 to 11	eastbound	4,653	5,888	79%
11 to 12	eastbound	5,515	5,888	94%
7 to 5	westbound	5,665	5,888	96%
8 to 7	westbound	4,831	5,888	82%
9 to 8	westbound	3,635	5,888	62%
10 to 9	westbound	4,052	5,888	69%
11 to 10	westbound	4,291	5,888	73%
12 to 11	westbound	4,963	5,888	84%

Source: WSP.

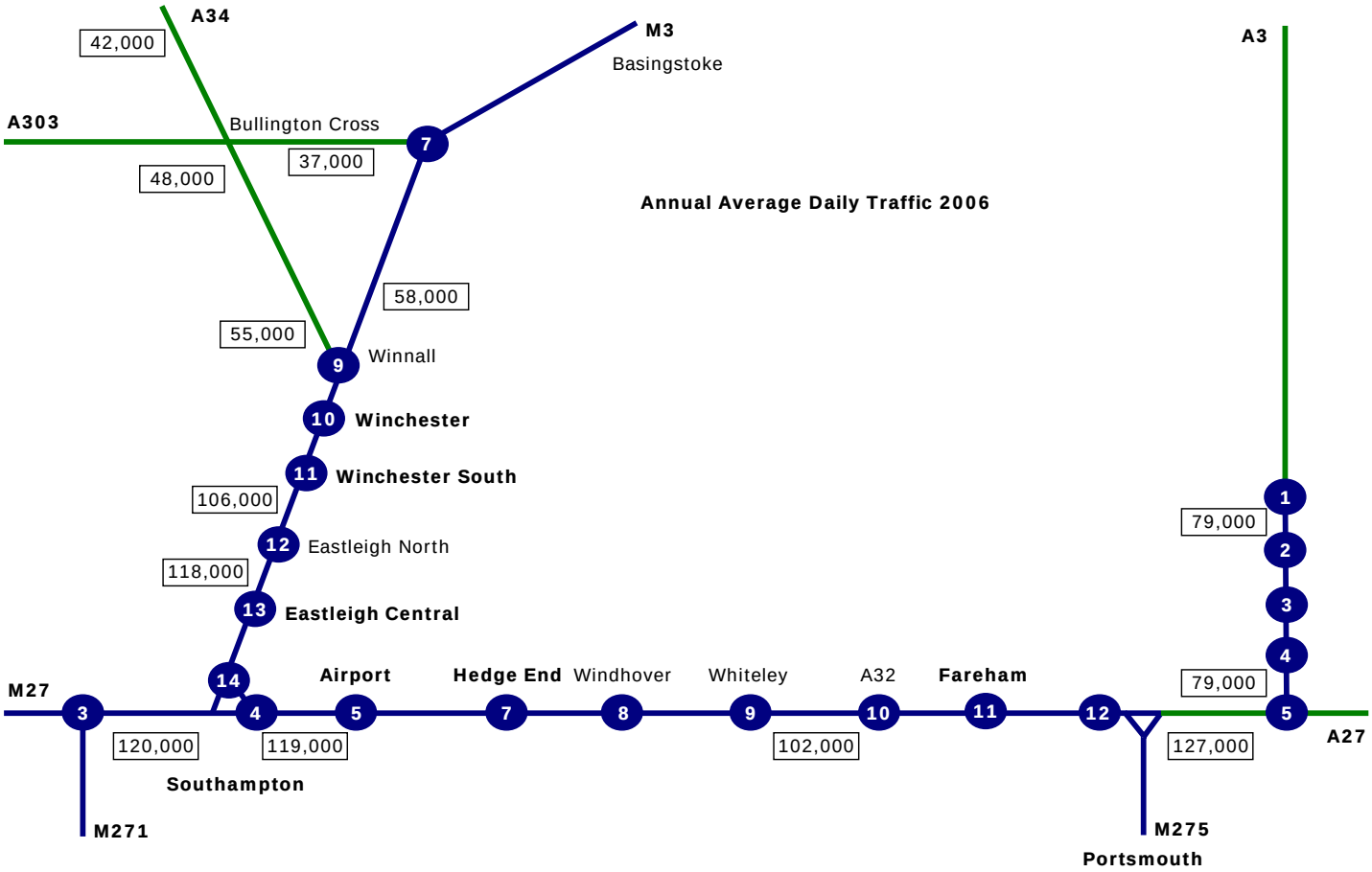
Table 5.5 AM Peak, PM Peak and Daily (AADT) Trunk Road Link Flows 2008

M27	AM Peak Hour			PM Peak Hour			Weekday Total		
	e'bound	w'bound	two-way	e'bound	w'bound	two-way	e'bound	w'bound	two-way
J5-7	4,766	5,423	10,189	6,314	5,270	11,584	68,690	67,949	136,639
J7-8	4,354	4,562	8,916	5,365	5,395	10,760	63,241	65,941	129,182
J8-9	4,651	3,729	8,380	5,003	4,780	9,783	59,652	56,467	116,119
J9-10	3,601	3,869	7,470	4,423	4,324	8,747	51,960	51,815	103,775
J10-11	4,707	5,170	9,877	5,612	4,295	9,907	65,778	65,256	131,034
M3	AM Peak Hour			PM Peak Hour			Weekday Total		
	e'bound	w'bound	two-way	e'bound	w'bound	two-way	e'bound	w'bound	two-way
J10-11	4,707	5,170	9,877	5,612	4,295	9,907	65,778	65,256	131,034
J11-12	4,746	4,707	9,453	5,791	4,352	10,143	67,351	64,199	131,550
J12-13	5,018	4,399	9,417	5,748	4,523	10,271	66,782	62,718	129,500
J13-14	2,713	5,354	8,067	3,202	5,182	8,384	33,760	72,830	106,590
A34(T)	AM Peak Hour			PM Peak Hour			Weekday Total		
	s'bound	n'bound	two-way	s'bound	n'bound	two-way	s'bound	n'bound	two-way
	2,121	2,054	4,175	1,976	2,374	4,350	27,802	27,950	55,752

Source: Highways Agency.

5.1.8 Figure 5.1 shows the daily two way vehicle flows for selected links on the trunk road network in 2006. In comparison with the figures in Table 5.4 for 2008, considerable increases are apparent for some links, particularly the M3 south of Winchester. The high figures for the M27 in the Southampton area and the M3 in the Eastleigh and Winchester corridor are to be noted.

Figure 5.1 Daily Trunk Road Link Flows 2006



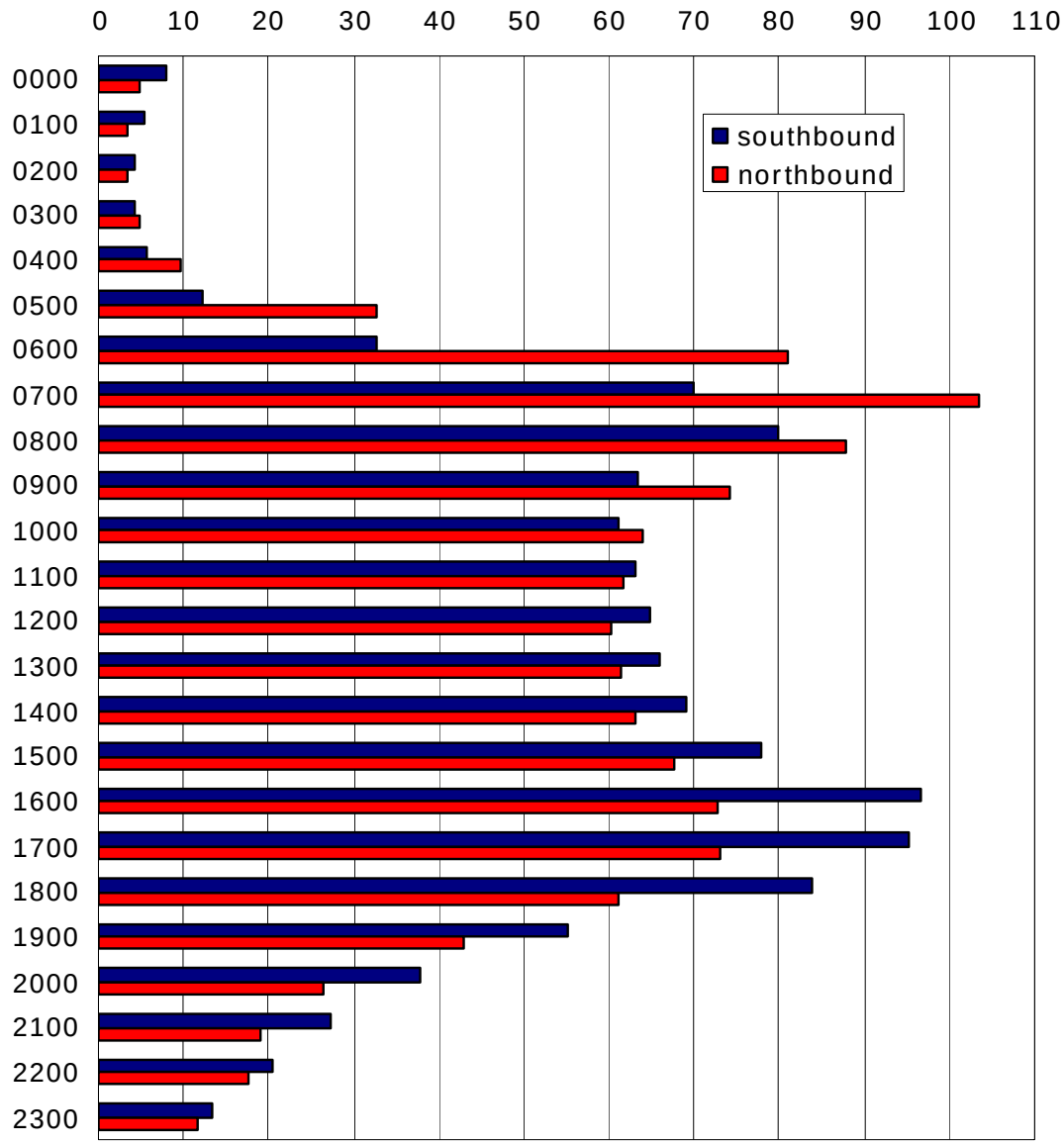
Source: Highways Agency

M3 Motorway

5.1.9 Taking more detailed figures with hourly flows by link, congestion is evident for the M3 at Winchester as shown in Figure 5.2. Between 0700 and 0800, northbound traffic exceeds capacity with southbound flows in the evening peak also being considerable. The strong demand for northbound travel in the AM Peak the reverse in the PM Peak is replicated further to the south as shown in Figures 5.3 and 5.4.

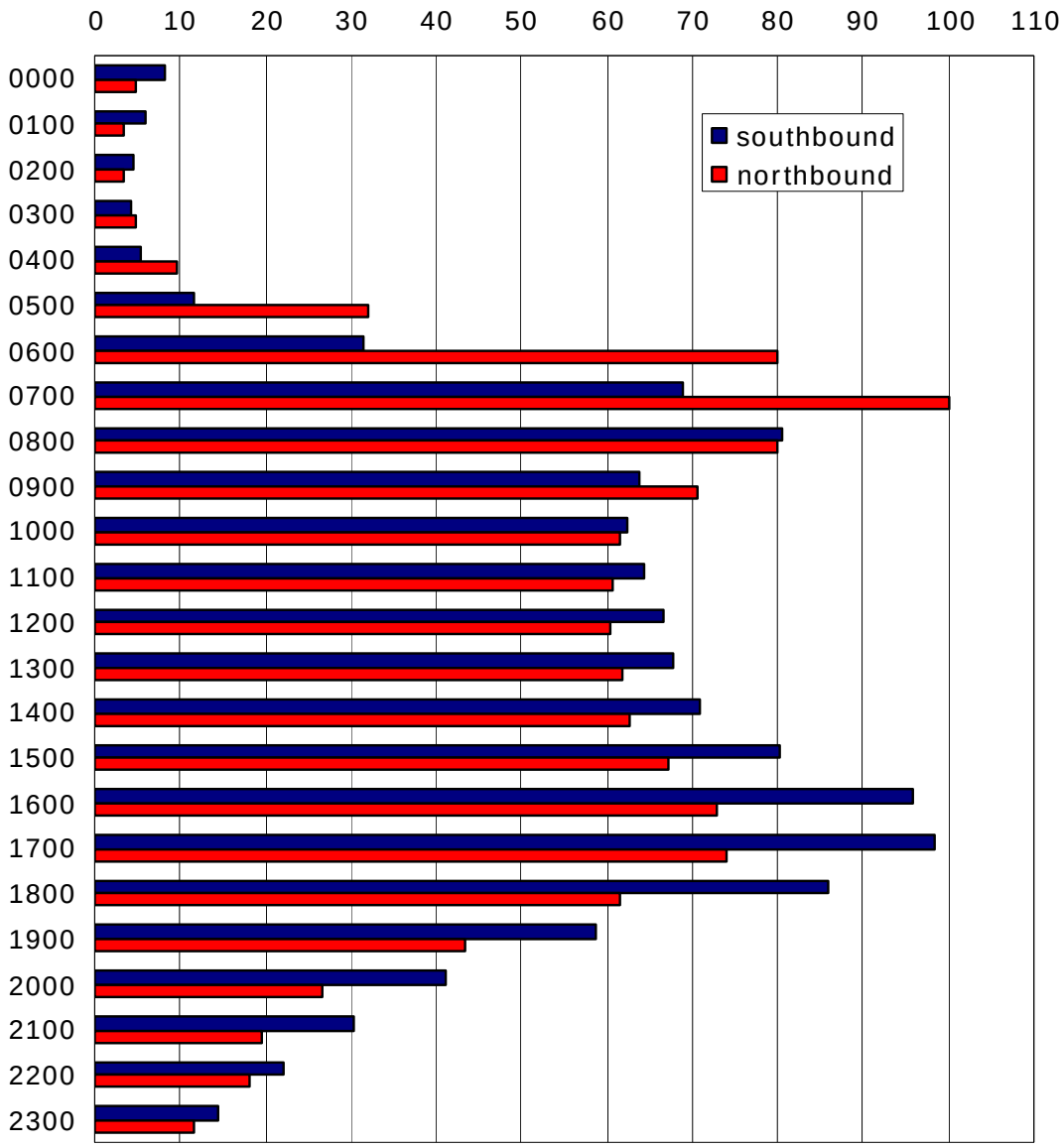
5.1.10 Both the M3 and the M27 have high flows for much of the day with the disparity between peak and inter-peak periods becoming reduced over time. This emphasizes the key role of the major motorways and the possibilities of the levels of congestion that are experienced currently at peak times being extended to other times.

Figure 5.2 Per Cent Capacity M3 Junctions 10 (Bar End) to 11 (Winchester South) (5 Day Mean, June 2008)



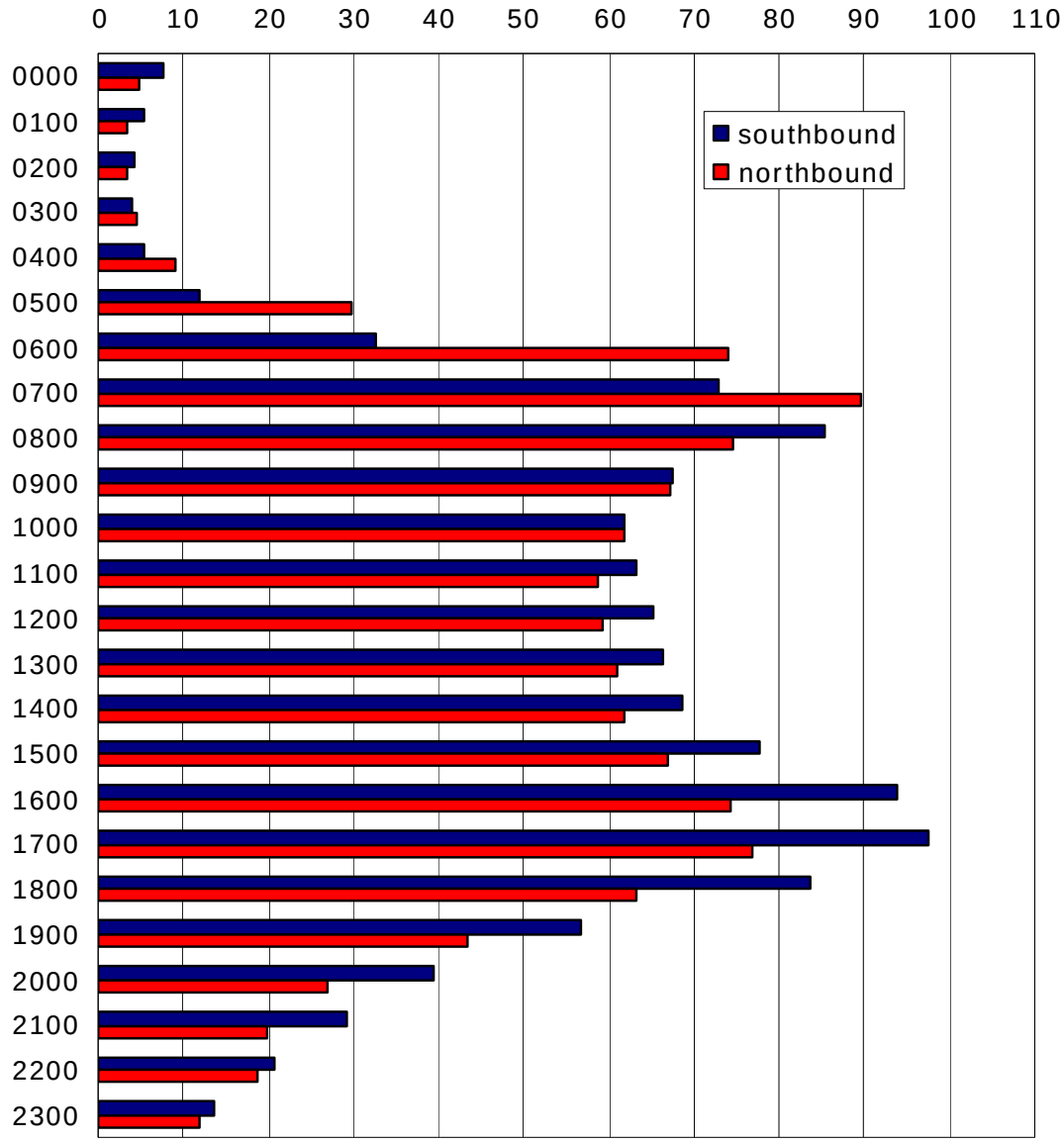
Source: Highways Agency trads2 database (http://trads.hatris.co.uk/tradsii/index.php)

Figure 5.3 Per Cent Capacity M3 Junctions 11 (Winchester South) to 12 (Eastleigh North) (5 Day Mean, June 2008)



Source: Highways Agency.

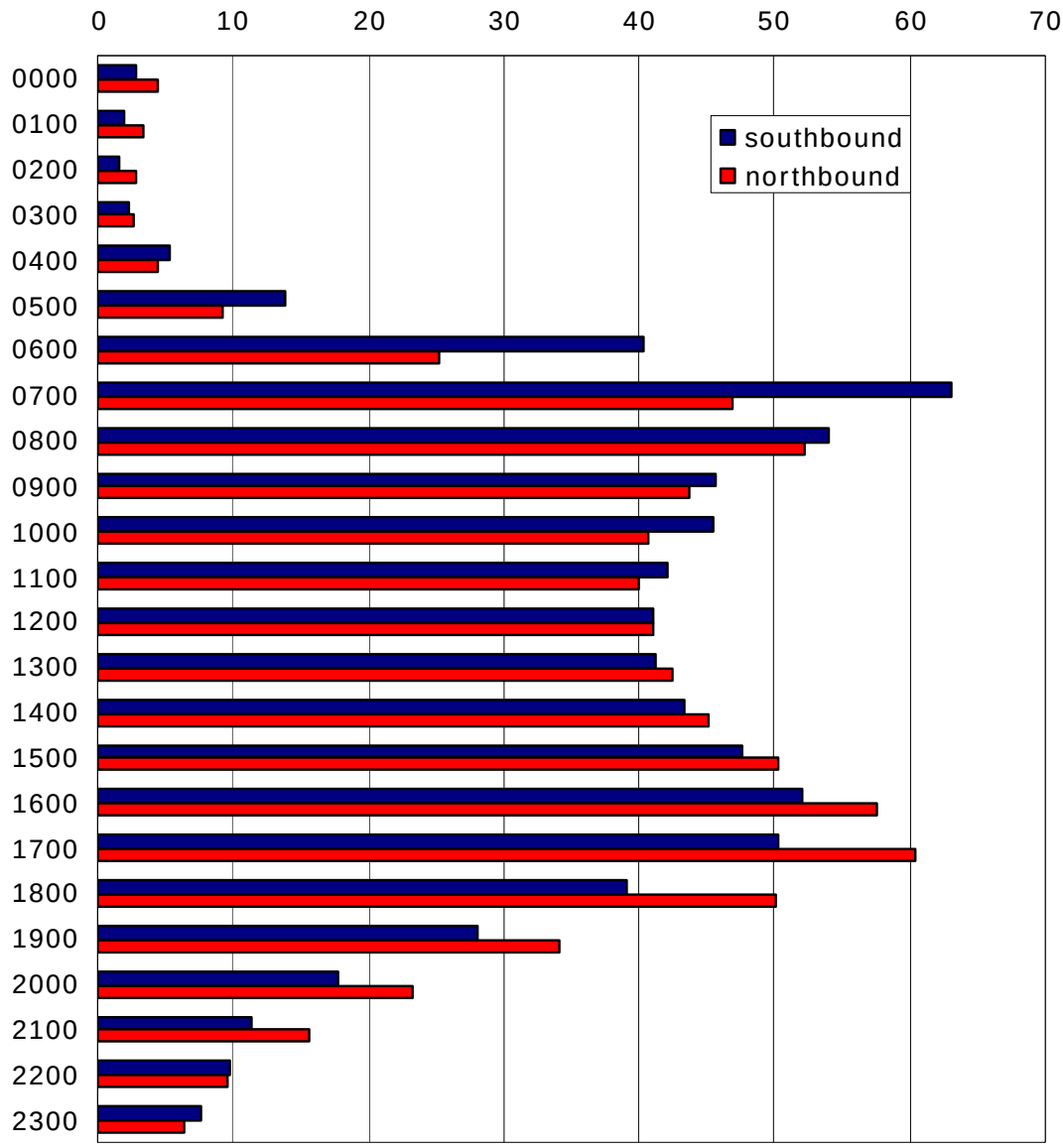
Figure 5.4 Per Cent Capacity M3 Junctions 12 (Eastleigh North) to 13 (Eastleigh Central) (5 Day Mean, June 2008)



Source: Highways Agency.

5.1.11 The A34(T) operates well within capacity as shown in Figure 5.5. However, M3 Junction 9, the intersection with the A34, presents considerable problems as there are conflicting at-grade movements and delays are common for southbound traffic from the A34 to the M3.

Figure 5.5 Per Cent Capacity A34(T) South of Bullington (5 Day Mean, June 2008)

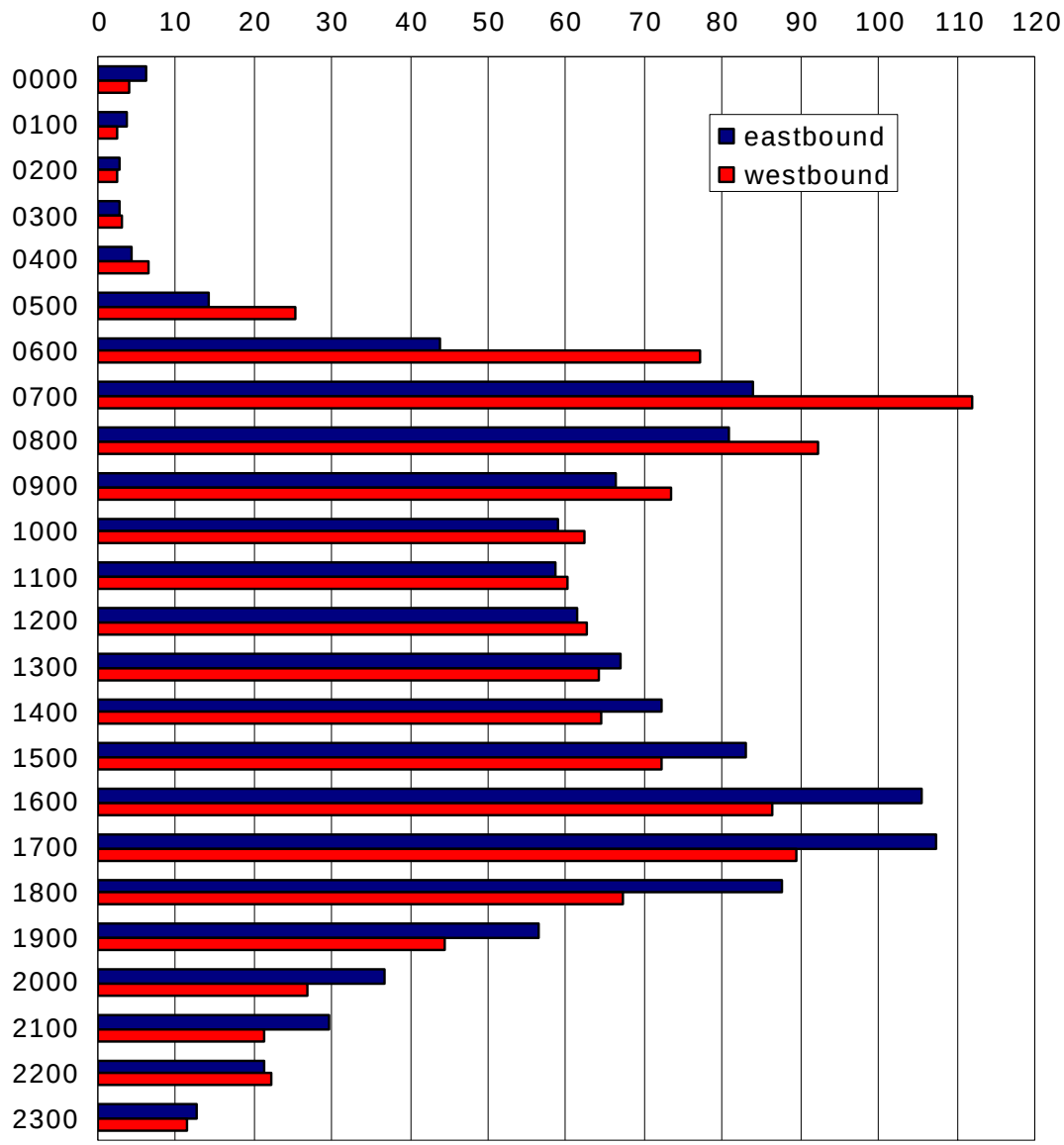


Source: Highways Agency.

M27 Motorway

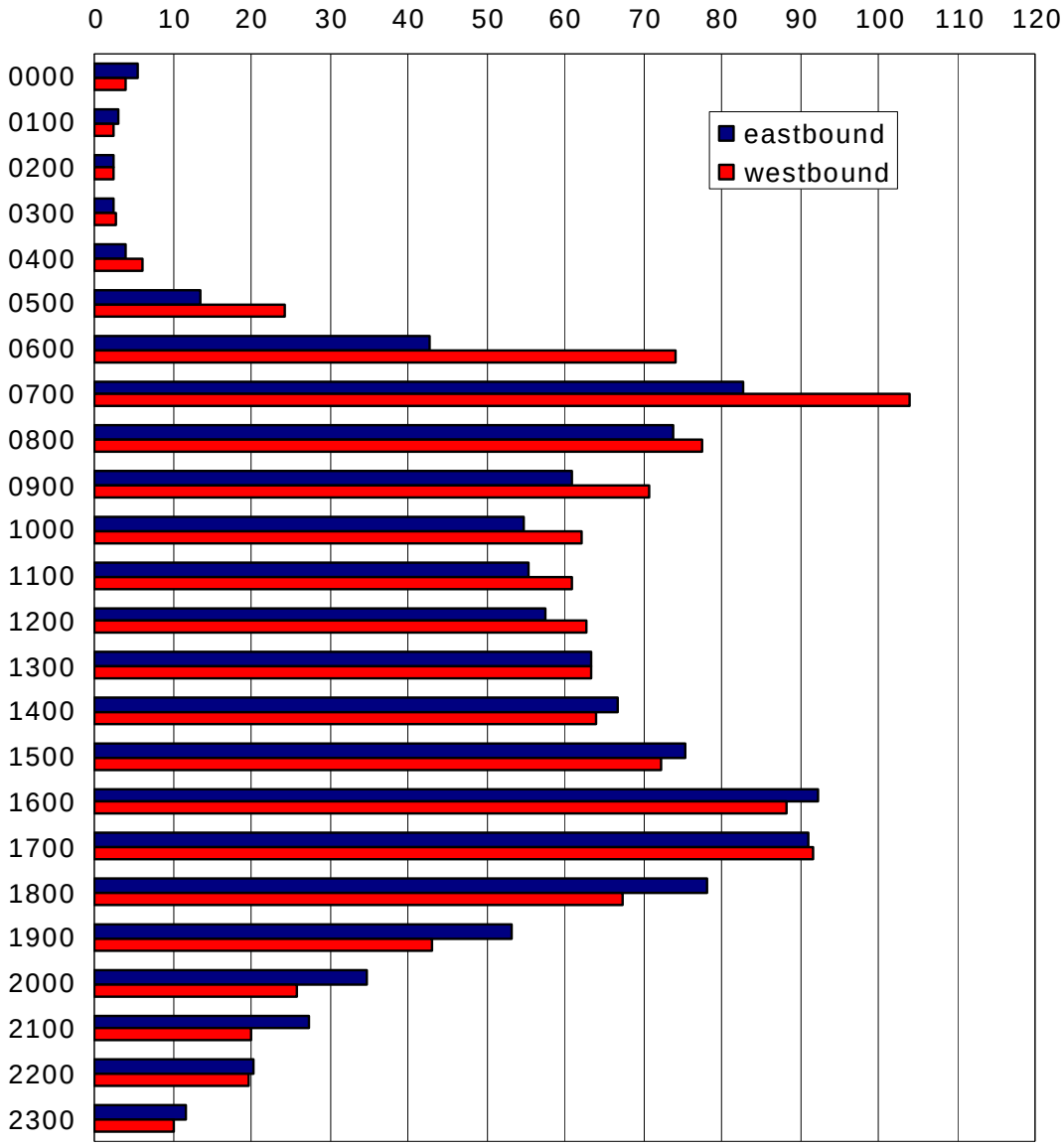
5.1.12 The M27 has a number of junctions which allow relatively short journeys to be made. Capacity is a problem and one scheme has been completed recently (in the Fareham area) to enhance capacity with a further scheme (Rownhams to M3) underway. Figures 5.6 to 5.10 show the links flows relative to capacity. As with the M3, peak period flows exceed capacity particularly westbound in the AM Peak and eastbound in the PM Peak to the west of Hedge End. Around Junction 9 at Whiteley, demand from both directions is evident, prompted by the large employment areas in Whiteley and Segensworth. Further to the east, the predominant demand is for the Portsmouth area in the AM Peak. As with the M3, inter-peak levels of use are high.

Figure 5.6 Per Cent Capacity M27 Junctions 5 (Airport) to 7 (Hedge End) (5 Day Mean, June 2008)



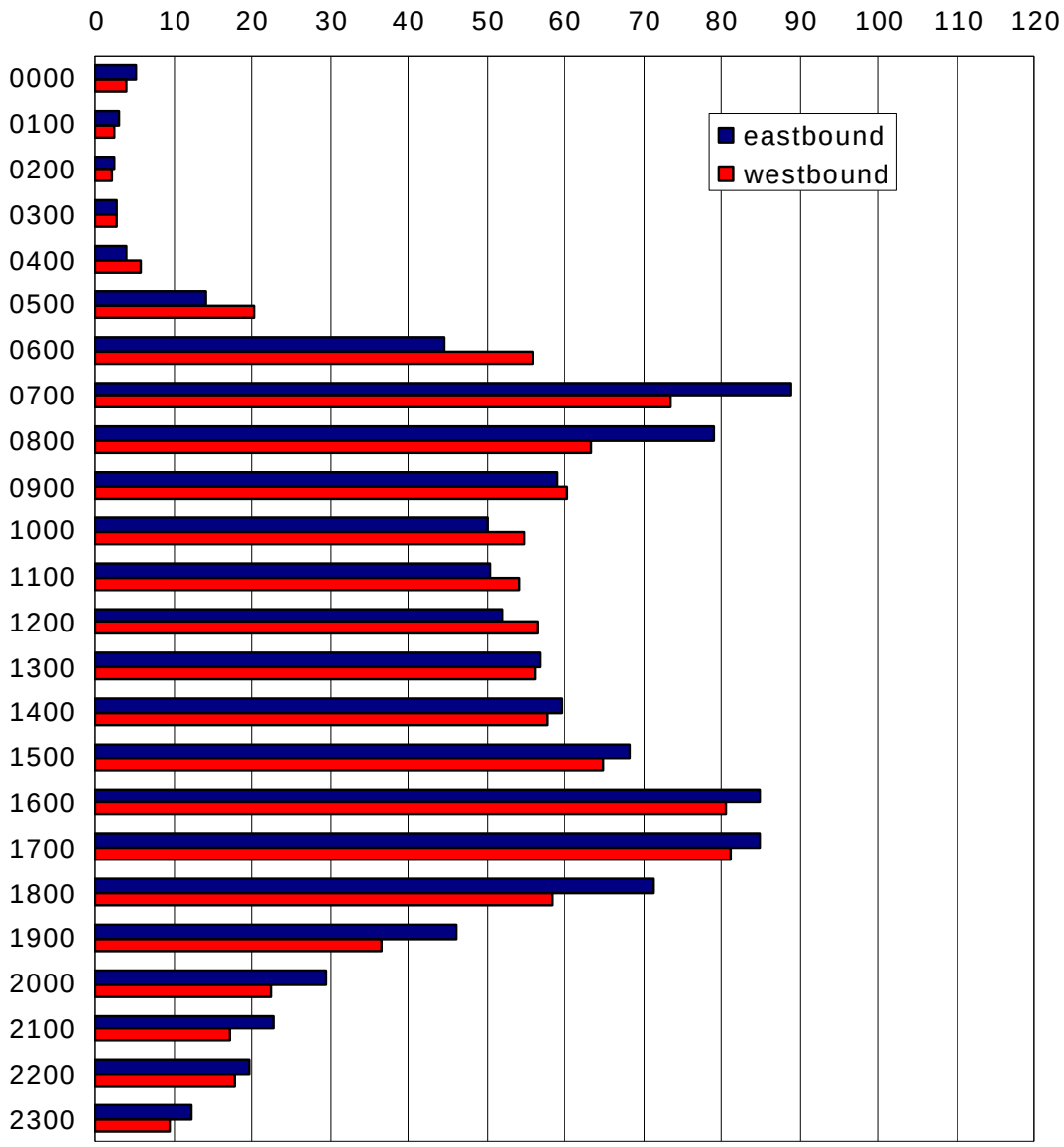
Source: Highways Agency.

Figure 5.7 Per Cent Capacity M27 Junctions 7 (Hedge End) to 8 (Windhover) (5 Day Mean, June 2008)



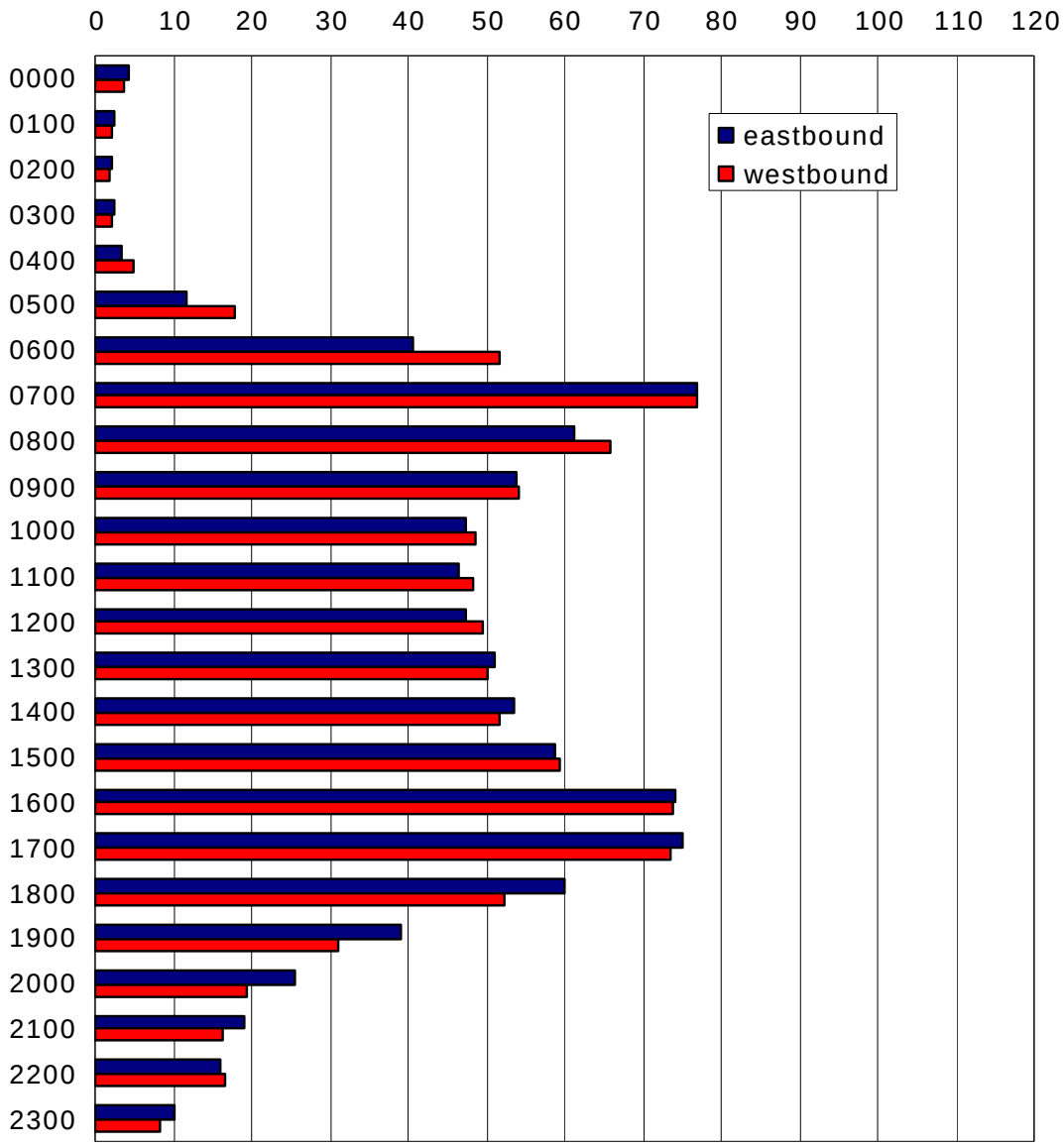
Source: Highways Agency.

Figure 5.8 Per Cent Capacity M27 Junctions 8 (Windhover) to 9 (Whiteley) (5 Day Mean, June 2008)



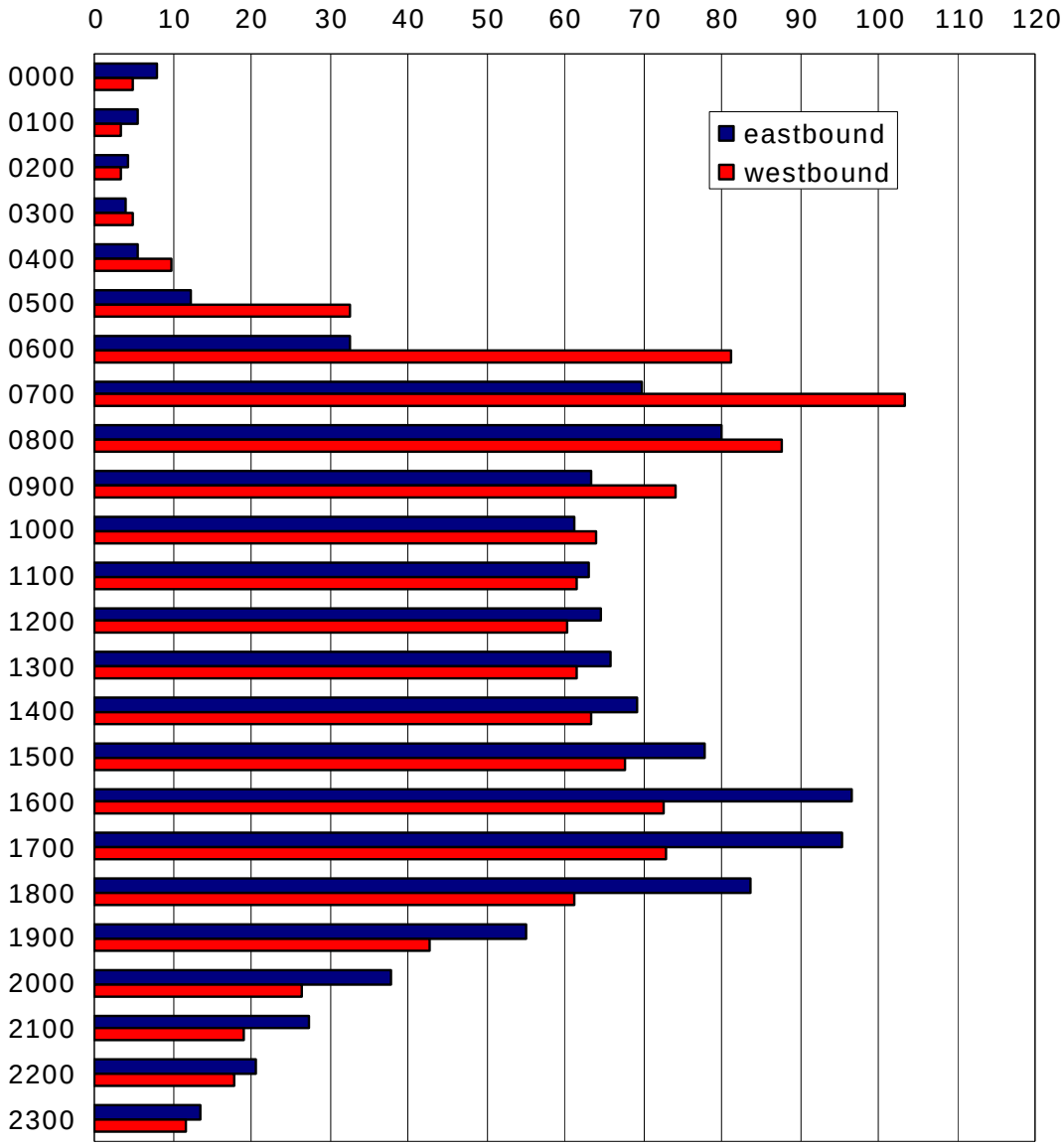
Source: Highways Agency.

Figure 5.9 Per Cent Capacity M27 Junctions 9 (Whiteley) to 10 (A32) (5 Day Mean, June 2008)



Source: Highways Agency.

Figure 5.10 Per Cent Capacity M27 Junctions 10 (A32) to 11 (Fareham) (5 Day Mean, June 2008)



Source: Highways Agency. [Junction 10 has east-facing slips only.]

5.2 Winchester City

5.2.1 Table 5.5 shows the levels of use of the city's radial routes based on Congestion Reference Flow (CRF) calculations to determine the Ratio of Flow to Capacity (RFC). This suggests that while capacity is constrained, particularly where there are narrow carriageways such as Stockbridge Road, the levels of daily traffic can be accommodated easily. Even a conservative estimate suggests that all routes are well within a threshold at which congestion would be encountered over the course of the day. However, demand for peak period movement creates queuing in contrast to the free-flow conditions off peak.

Table 5.6 Capacity of Radial Routes

Daily Total	AADT 08	CRF	RFC
B3049 Stockbridge Road	6,043	16,771	0.36
B3420 Andover Road	10,265	17,156	0.60
C465 Worthy Road	7,288	16,991	0.43
C3404 Alresford Road	5,801	17,540	0.33
C465 Easton Lane	9,905	16,576	0.60
B3330 Chesil Street	9,018	16,349	0.55
B3335 St Cross Road	10,499	16,974	0.62
B3040 Romsey Road	9,708	17,536	0.55

Source: Hampshire County Council data.

5.2.2 Some perceptions of traffic in the city – that traffic congestion has got progressively worse over several years – are not supported by the data. Table 5.6 sets out observed flows on the main radial routes. The figures show that for the main routes overall, traffic levels have not increased between 2007 (full year) and 2008 (1 January to 31 July) and actually fell by 11% between 2006 and 2007. However, daily traffic levels have increased on the B3420 Andover Road offsetting decreases elsewhere. The longer term trend suggests that traffic has not grown for a number of years (and actually declined in terms of daily volumes) although some radial routes have experienced increases while others have seen decreased traffic levels[32].

5.2.3 However, changes have been observed between 2006 and 2008 for AM and PM Peak hour flows. The figures suggest that Andover Road has experienced increases but some other routes, notably Romsey Road, have experienced decreases, not all of which are attributable to re-assignment to other routes. AM Peak inbound congestion occurs on Andover Road and Romsey Road also experiences some congestion although other routes tend to operate reasonably well. This supports the capacity in that there is considerable free capacity, despite some peak period difficulties.

[32] Winchester Movement and Access Plan monitoring between 1993 and 2002 suggested that overall traffic levels had remained broadly constant in terms of peak flows but daily flows had declined (see Hampshire CC WMAP Joint Members Panel 23 October 2002 Outcome of 2002 Monitoring and Transpol Surveys report).

Table 5.7 Observed Traffic Flows for Winchester City Radial Routes

	2006	2007	2008	Change 06 to 07		Change 07 to 08	
AM Peak Hour							
B3049 Stockbridge Road	602	607	589	5	0.8%	-18	-3.0%
B3420 Andover Road	n/a	871	1,038	n/a		167	19.2%
C465 Worthy Road	n/a	866	860	n/a		-6	-0.7%
C3404 Alresford Road	708	695	709	-13	-1.8%	14	2.0%
B3335 St Cross Road	1,100	1,159	1,112	59	5.4%	-47	-4.1%
B3040 Romsey Road	993	1,052	960	59	5.9%	-92	-8.7%
	3,403	**5,250**	**5,268**	**110**	**2.6%**	**18**	**0.8%**
PM Peak Hour							
B3049 Stockbridge Road	656	664	634	8	1.2%	-30	-4.5%
B3420 Andover Road	n/a	932	1,067	n/a		135	14.5%
C465 Worthy Road	n/a	819	822	n/a		3	0.4%
C3404 Alresford Road	644	647	631	3	0.5%	-16	-2.5%
B3335 St Cross Road	980	1,028	1,052	48	4.9%	24	2.3%
B3040 Romsey Road	865	872	803	7	0.8%	-69	-7.9%
	3,145	**4,962**	**5,009**	**66**	**1.8%**	**47**	**0.4%**
Daily Total							
B3049 Stockbridge Road	7,146	6,169	6,043	-977	-13.7%	-126	-2.0%
B3420 Andover Road	n/a	9,010	10,265	n/a		1,255	13.9%
C465 Worthy Road	n/a	7,359	7,288	n/a		-71	-1.0%
C3404 Alresford Road	6,697	5,935	5,801	-762	-11.4%	-134	-2.3%
B3335 St Cross Road	11,272	10,496	10,499	-776	-6.9%	3	0.0%
B3040 Romsey Road	12,149	10,615	9,708	-1,534	-12.6%	-907	-8.5%
	37,264	**49,584**	**49,604**	**-4,049**	**-11.1%**	**20**	**0.0%**

Source: Hampshire County Council.

Casualty Data

5.2.4 Casualty data has been provided by Hampshire County Council for the three year period to July 2008. This covers the District and indicates where casualties have been reported by severity. Clusters are evident at:

- Winchester city's one-way system (North Walls, St George's Street) and the radial approaches has clusters of slight casualties reflecting the high activity levels and constrained network;
- M3 Junction 9 and its A34 approach have clusters of slight casualty incidents (with one fatal on the latter);
- M3 Junctions 9 to 10 has 15 slight and seven serious casualties;
- M3 Junctions 10 to 11 has 29 slight, one serious and one fatal casualties with a further cluster of slight and serious incidents at Junction 11;
- M27 east of Junction 9 at Whiteley has a cluster of slight and serious casualties; and
- Most of the rural area has relatively few casualties although there are accidents, sometimes fatal, on stretches of road that are high speed such as the A31 near Ovington, the A33 at Kings Worthy and the A334 at Wickham/Botley.

5.2.5 The motorways and approaches have greater casualty numbers due to the higher traffic levels. For other reasons, there does not appear to be particular casualty locations that would be exacerbated by further development.

6 Review of Development Options

6.1 Public Transport as an Acceptable Alternative to Car Use

6.1.1 The Issues and Options report rightly identifies the key challenge of making public transport a feasible alternative to car use. This needs to take place in a commercial environment and requires co-operation between local authorities, developers and operators to ensure that bus services can be operated viably and to a suitably high standard into the longer term. In doing so, there are a number of considerations covering infrastructure, services and supporting information. To achieve the type of service that would be appropriate to the development sites proposed (and integrating these with established services) will require the following as a minimum:

- More bus lanes to create faster journey times and improved reliability;
- Other priority measures – e.g. at junctions to improve bus movements and reliability;
- Improved bus stops – including a range of facilities such as e-mail access, comprehensive information and located close to good walking and cycling routes and active locations;
- Higher frequency services – at least four buses an hour are likely to be required before habitual car users contemplate transferring and five buses per hour would be desirable;
- Improved evening and weekend services – to support retail, leisure and community activities as well as journeys to work and school;
- Complementary parking policies – reducing long stay availability and/or increasing the cost of long stay parking in employment areas to support the use of alternatives;
- Further park and ride for Winchester – coupled with reductions in central area and Romsey Road long stay provision;
- Reduced parking standards for new developments – to reflect the level of accessibility by non-car modes; and
- Travel plans – to co-ordinate measures that support alternatives to car use across residential areas, employers schools and other establishments or groupings.

6.2 Self-Containment

6.2.1 A further issue is that of self-containment within development sites or settlements. In principle, if a community can include residential and employment land uses, then some local people will have the opportunity to avoid commuting and hence reduce impacts on the wider transport networks. Table 6.1 shows the extent of self-containment for selected settlements in the District.

Table 6.1 Self-Containment of Larger Market Towns

Location	% of working residents who work within the settlement	% of workers who also live in the settlement
Alresford	38.8%	52.6%
Bishop's Waltham	31.3%	44.2%
Denmead	20.8%	42.5%
Whiteley	20.4%	5.7%
Wickham	27.3%	31.2%

Source: Census 2001 quoted in Issues and Options report.

6.2.2 These figures suggest that self-containment is achievable to some extent. However, the most recent development, Whiteley, has the lowest levels indicating that its locations and design are not conducive to self-containment. This in turn suggests that similar developments would not generate the levels of self-containment that might be expected. Our previous consideration of the SDAs concluded that self-containment was unlikely to be realized in an area with multiple destinations and complex travel patterns and was particularly unachievable with high car ownership and no demand management measures in place.

Neighbouring Authorities

6.2.3 In the PUSH area of the District, co-ordination with neighbouring authorities is vital. These include Havant Borough Council in relation to Waterlooville, Fareham Borough Council in relation to the North Fareham SDA and Whiteley and Eastleigh Borough Council in relation to the North/North East Hedge End SDA and the South Hampshire Strategic Employment Zone.

6.3 Supporting Sustainable Travel

6.3.1 It is possible and desirable to implement measures which reduce travel demand by design. The accessibility planning undertaken has demonstrated how locating development where people can access work and other basic functions is essential if longer distance journeys and car dependence are to be avoided. Hence relating housing and employment by meaningful public transport links and by creating opportunities to walk and cycle are particularly important.

6.3.2 Urban design and streetscape can influence people's walking habits and quality of life criteria. The safety of pedestrians and cyclists is paramount but complete unobstructed routes, good road crossings and secure cycle parking should feature. However, a sustainable view of streetscape does not overcome location problems, as the development at Knowle testifies. Urban design can also take account of the needs of bus services with priority routes that do not incur delays due to parking problems and complex routes due to poor layout.

6.4 Measures to Reduce Travel Demand

6.4.1 In new developments, people's travel habits will not be entrenched from the outset and it may be possible to influence mode choice at an early stage so that walking, cycling, bus and car sharing become the modes of choice. The car would obviously still play a sizable role but this could be reduced.

6.4.2 Here we review the potential for a number of measures to support sustainable travel, reduce excessive car use and the need to travel generally. A number of measures, which are already being implemented throughout the UK, have been identified as offering the potential to bring about these changes and they are:

- behavioural change brought about by travel planning;
- more home working;
- car clubs – The Winchester Car Club has now been launched and is running initially with four cars based in city centre car parks. The scheme allows for individual and corporate membership and cars are rented by the hour. Around 30 members have been recruited and the City Council has now become a corporate member. If successful, the scheme will be extended to other areas and additional cars located in areas of high demand. It is hoped to incorporate the scheme into new developments such as Silver Hill in the future;
- car sharing;
- containment within the site with the availability of employment within walk/cycle distance; and
- site design to support sustainable modes.

6.4.3 'Smarter choices' have, over the last five years, become more widespread, due to a number of studies showing the potential of changing mode choice. For example, research carried as part of the DfT 'Sustainable Towns' initiatives in Darlington, Peterborough and Worcester, found out that:

- 39-52% of car trips were used for subjective reasons only (i.e. a bus was available, or the trip was short enough to walk or cycle);
- 35-48% of trips a car was used because no alternative was available; and
- 13-15% of trips required a car because of practical constraints.

6.4.4 'Smarter choices' are therefore primarily aimed at the 39-52% of car-based journeys that could be undertaken by public transport, walking, cycling or not at all (i.e. home working). A comprehensive piece of research, reviewing the potential impact of 'smarter choices' on travel habits and traffic levels, was published by the Department for Transport in 2005[33].

6.4.5 While travel plans can help reduce car trips, it is clear that the effectiveness of travel plans varies greatly between different organisations, individuals and places. From the **workplace travel plan** case studies reviewed, the most significant factor that brought about reductions in car trips was when an organisation addressed staff parking, either by restricting the availability of spaces or introducing parking charges.

[33] Department for Transport (July 2004) *Smarter choices – changing the way we travel*.

6.4.6 **Personalised travel planning** focuses on a variety of trips made by individuals that include work, shopping and leisure journeys. A number of studies have been carried out in Australia (Perth) and the UK (Frome and Gloucester). In Perth, a before and after study showed that vehicle kilometres were reduced by 17%. Follow-up monitoring a year later showed that this has been sustained. In Frome and Gloucester, car driver trips reduced by 6% and 9% respectively.

6.4.7 **Residential travel plans** are concerned with reducing the number and length of car trips generated by a residential development, as well as supporting more sustainable modes of travel and reducing the overall need to travel. Compared to other travel plans they are slightly different in that they are concerned with journeys to multiple and changing destinations. Residential travel plans are relatively new; guidance for them was published in 2005[34], so there is currently no evidence available to demonstrate their effectiveness. From case studies it was evident that developers are prepared to engage in the travel planning process and fund measures which promote sustainable travel. However, generous parking standards at some of the sites have led to high car ownership levels. Again, parking provision is seen as a key determinant of mode choice and travel patterns.

6.4.8 Employees are increasingly being given greater opportunities to **work from home** and undertake more flexible working patterns. This has been helped by the advancement of technology which allows people to access information from home and at other locations, rather than the normal workplace. In 2005, around 3.1 million people worked mainly in their home or different places using home as a base (an increase from 2.3 million in 1997). Of these, 2.4 million used a telephone or computer to carry out their work (teleworker). Almost two thirds of teleworkers are self-employed, whilst only one in three are employees.

6.4.9 Data shows that teleworkers participate in managerial and professional occupations. The scope for growth in teleworking is therefore likely to be confined to these groups and therefore is not applicable to around 50% of the UK workforce (typically administrators, personal services, customer services, process, plant and machinery workers).

6.4.10 In over a decade, the growth in **car club** membership has increased significantly in the UK from 500 in 2002 to 23,000 members currently belonging to a total of 42 car clubs across the UK[35]. A number of studies in European cities including towns in Switzerland and Holland have assessed the effects of car clubs on car use. These demonstrated that members who give up their car when joining a car club reduce their car mileage by 60-70%. Members who do not give up their car appear not to alter their travel patterns. In terms of its impact on traffic levels, DfT suggests that car clubs could cut car mileage in urban areas by 0.03%-0.06% and potentially up to 3% in the long term (no long term date is specified).

6.4.11 There are a number of **car sharing** schemes throughout the UK and these have tended to focus on journeys associated with the workplace. A study for the DfT looking at the wider impact of workplace travel plans[36] concluded that 'The data available show that, of 14 companies with schemes that enable them to identify formally registered, active sharers, on average, 14% of staff have become active car sharers'.

[34] Making residential travel plans work: guidance for new developments, DfT, October 2005

[35] www.carplus.org.uk.

[36] Cairns et al, 2002.

6.4.12 The Smarter Choices report shows the potential contribution of each travel plan measure, under high and low intensity scenarios, in reducing overall traffic levels. A high intensity scenario represents local and national policies supporting widespread implementation of soft measures, whereas a low intensity scenario would be less widespread. The biggest contribution come from measures targeted at the journey to work as shown in Table 6.2.

Table 6.2 Contribution of Travel Planning Measures, National Averages

Initiative	High Intensity Scenario	Low Intensity Scenario
Work place travel plan	5.4%	1.4%
Car sharing	2.0%	0.1%
Teleworking	2.2%	0.6%
Personalized travel planning	1.9%	0.4%
School travel plans	0.02%	0.01%

Source: Smarter Choice study report, 2005.

6.4.13 The Hampshire LTP quotes DfT estimates of the potential benefits of smarter choices measures as shown in Table 6.3. It is pointed out that these represent the most optimistic scenarios where conditions are particularly favourable and that the realities will produce much lower (but worthwhile) figures.

Table 6.3 Potential Benefit of Smarter Choices Measures

Initiative	Impact
Workplace travel planning	Reduce car use by up to 25%
School travel planning	Reduce school run traffic by up to 15%
Personalised travel planning	Reduce car use by up to 15% in urban areas
Awareness campaigns	Up to 40% of residents influenced
Car clubs	Reduction in car mileage of up to 3,600 km per annum per participant
Car sharing	Reduction in car mileage of up to 4,500 km per annum per participant
Teleworking	Reduction in business mileage of up to 10%
Home shopping	70-80% reduction in mileage for grocery shopping by those participating

Source: Hampshire LTP

Demonstration Towns

6.4.14 In 2004, Worcester, Darlington and Peterborough were selected by the Department for Transport to take part in the 'Sustainable Travel Demonstration Town Project'. The aim of the project was to demonstrate the effect of 'smarter choices' interventions and

improvements in a relatively small area over a sustained period. Starting in April 2004 the project is set to run until March 2009. A total of £10 million was awarded between the three towns.

6.4.15 Each town has set out a strategy to introduce a variety of 'hard' measures (aimed at worsening the cost or convenience of car use) and 'soft' measures (aimed at improving alternative modes) to promote walking, cycling and bus use. Improved public transport and personalised travel planning have also been key components to the projects. Headline results of the study findings so far indicate that in **Darlington -** where the focus has been on high quality travel information, education and training and a marketing strategy - even the non-targeted population, but who have been exposed to general marketing, are changing their travel habits. Car trips have decreased by 6.6% and walking and cycling have increased by 8.3% and 54% respectively.

6.4.16 Personalised marketing has also been central to **Peterborough**'s project, with 12,000 households having received personalised travel information packs. The packs have been provided along with incentives to help residents try out walking, cycling, bus and car sharing. Results show growth in all sustainable travel modes which have been attributed to the individualised marketing programme.

6.4.17 The **Worcester** project also used individualised marketing and the most significant change has been an increase in the number of bus users. Individualised marketing was not the only reason for growth in bus use however. The promotion of a new bus service which linked to an existing park and ride site, the city centre and target area, made significant contribution (and perhaps bigger contribution given that growth in bus use was much higher compared to increases in walking and cycling).

6.4.18 Site self-containment will be in influence on travel, particularly at peak times when most journeys to work take place. Indications are that while this is a helpful aspiration, there is little evidence to support long term containment.

Land Use and Car Dependency

6.4.19 In a report published by the Commission for Integrated Transport (CfIT) in 2003[37] reference is made to a research carried out amongst residents within new housing developments in Oxfordshire. The study looked at the impact of planning policies centred on Bicester, which had been allowed to expand in a way which it was hoped would 'utilised the town's existing services and to promote employment with a view to the town growing as a 'balanced' community'. The research found that almost half of new residents came from outside the county altogether and had very different commuting patterns from people who came from the town or who lived within the vicinity. In all almost a third of workers were making less sustainable journeys after their move.

6.4.20 There is little evidence available to show that urban containment policies such as PPG13 have a significant impact on encouraging people to undertake activities, such as working and shopping, close to places where they live and therefore reducing the amount and distance of travelling.

[37] Commission for Integrated Transport (2003) *Ten Year Plan – second assessment report*.

Promotion of Public transport

6.4.21 A number of studies[38] have assessed the impact of quality bus partnerships and their associated measures to improve bus patronage, summarised in a further study[39]. This also reviewed good practice examples in European cities where bus service improvements and fare changes have led to dramatic increases in bus patronage. 11 quality bus partnerships were investigated and found that in nine cases, bus patronage rose between seven and 30 per cent. A variety of measures were implemented as part of the quality partnership including bus priority measures, increased frequency of services, low floor buses, real time information, marketing and higher parking charges.

6.4.22 The contribution of other factors outside the quality partnership, such as the level of parking charges and availability of parking, levels of congestion and competition with other modes, are also noted for consequences on passenger growth.

Potential Reductions in Demand for Car Travel

6.4.23 The DfT's Smarter Choices study has indicated the extent to which measures could be successful as indicated in Table 6.4.

Table 6.4 Potential Reductions in Car Travel Demand (%)

Initiative	'Enlightened Business as Usual'	'Ambitious Change'
Better bus services	-0.5	-0.9
Light rail systems	-0.03	-0.03
Community rail partnerships	-0.1	-0.3
Workplace travel plans	-1.0	-2.1
Teleworking	-1.6	-2.8
School travel plans	-0.4	-1.3
Individual marketing	-0.8	-1.6
Car clubs	-0.02	-0.04
More cycling	-0.3	-1.2
More walking	-0.1	-0.2
Total	**-4.9**	**-10.5**

6.4.24 With an 'ambitious change' scenario, smarter choices could reduce car use by around 10% in large development areas. However, the effectiveness of each is very circumstantial. Peterborough, as highlighted above, has seen a shift in public transport use, walking and

[38] LEK (2002), TAS (1999, 2000), Confederation of Passenger Transport (2002).

[39] Lynn Sloman, Transport for Quality of Life with Transport 2000 and University of Westminster (2003) *Less Traffic Where People Live: how local transport schemes can help cut traffic*.

cycling through the application of personalised travel planning; however it is a relatively isolated city with higher order facilities and employment which accommodates the needs of people living in the city and the rural hinterland with a limited range of other attractive destinations.

6.4.25 This contrasts with the multi-centric character of south Hampshire with two major cities and several smaller centres. Dispersed land uses have undermined the making of clear links between employment and housing. To make smarter choices work effectively, significant effort is required to overcome the apparent convenience of car journeys compared with other modes and to improve the appeal of public transport services and to create the right environment for walking and cycling on a much larger scale for regular journeys.

6.5 Multiple Developments

6.5.1 Some potential locations can be considered in combination with others. This prompts a different view in terms of impacts at key road junctions and the viability of bus services. There may also be a stronger interaction between journey purpose and location, for example when considering employment sites in relation to housing sites across a wider area. In the southern part of the District, the impacts of multiple developments is particularly important, especially when development outside the District boundary is considered.

6.5.2 As a result, further development at Whiteley should be considered in the context of the North/North East Hedge End SDA and SHSEZ for employment patterns. Similarly sites in the Wickham area need to be considered alongside Knowle and North Fareham SDA. A collective approach may be productive in terms of allocating development and making it possible to provide travel choice which may not be possible for individual sites.

6.6 Issues to be Addressed

6.6.1 For each of the locations identified, there is a minimum requirement for transport choice to make any scale of development tenable, without which sites cannot be considered to be sustainable as car use will dominate.

- In Winchester Town, walking and cycling infrastructure must be improved and bus services will need to be enhanced. In addition parking in the central area must be reduced in number as further park and ride spaces become available;
- In Whiteley, a new bus service must be introduced to overcome barriers to movements, additional traffic congestion on the M27 and local road network and to provide travel choice. The completion of Whiteley Way is also required to allow northbound traffic access by avoiding use of the M27;
- Denmead and West of Waterlooville will similarly require strong bus services to Waterlooville town centre and to the A3 Cosham/Portsmouth corridor for the development sites to succeed; and
- The Bishops Waltham/Wickham/Waltham Chase/Swanmore area could benefit from a joint approach to bus provision to ensure that this can be achieved viably. Linking development with the North Fareham SDA and Knowle adds to the potential for a high quality alternative to car use, without which there are no attractive options.

6.6.2 Some proposed locations are not conducive to sustainable travel other than for internal journeys:

- New Alresford is relatively isolated and is unlikely to support an improved bus service to Winchester and/or Alton; and
- Colden Common is remote from Eastleigh and Winchester centres and current bus links are not sufficient to be an attractive alternative to car use.

7 Determining Trip Generation

7.1 Highways Agency Reduced Transport Evaluation

7.1.1 The Highways Agency has indicated that two levels of assessment should be followed depending on the level of analysis required and the type and extent of available data:

- Full Transport Evaluation (FTE); and
- Reduced Transport Evaluation (RTE).

For Stage One of this study, we are adopting an RTE approach.

7.1.2 Key issues that the Highways Agency wished to see addressed include locating development to avoid commuting on the trunk road network and hence adding to the congestion already experienced. Other issues include:

- Determining both AM and PM Peak analysis with separate arrivals and departures data;
- Defining the TRICS trip generation data applied;
- Using a base year and forecasting for 2026 using TEMPRO and/or NRTF growth rates; and
- Detailing the methodology for determining the capacity of the Strategic Road Network.

7.1.3 In the RTE, there is a requirement for a strong evidence base including the following:

- Accident rates;
- **Trip generation** estimates based on the 85th percentile TRICS trip rates or a reasonable alternative;
- **Trip distribution** based on:
  - Census journey to work data supplemented by local knowledge;
  - Operational capacities and deficiencies (links, pinchpoints and junctions) within and beyond the District;
  - Network stress mapping produced by the Agency;
- **Modal split** based on comparable local developments and considering measures to influence travel behaviour;
- **Trip assignment** based on:
  - Census journey to work data;
  - Disagreggated specific sites and the cumulative impacts of several sites;
  - TEMPRO to determine background growth;
  - Possible high and low growth scenarios; and
- **Mitigation measures** with the aim of describing how impacts on the network can be reduced or avoided.

7.2 Trip Generation

Residential Trips

7.2.1 The number of generated trips has been determined from the TRICS database with reference to comparative sources. TRICS is generally regarded as the most appropriate source in that it uses observed data from development sites and has over 2,800 datasets.

7.2.2 Car driver and all-mode trip rates have been determined from TRICS as shown in Table 7.1. These are based on large housing developments in Southern England, supplemented by data from other parts of the country to provide a suitable sample.

Table 7.1 All Modes Trip Rates per Dwelling

RESIDENTIAL CAR TRIPS	AM Peak 0800-0900			PM Peak 1700-1800			Daily		
	depart	arrive	total	depart	arrive	total	depart	arrive	total
all houses	0.41	0.13	0.54	0.20	0.35	0.55	3.10	3.08	6.18
all flats	0.21	0.08	0.29	0.07	0.14	0.21	1.12	0.96	2.08
Mean	**0.31**	**0.11**	**0.42**	**0.14**	**0.25**	**0.38**	**2.11**	**2.02**	**4.13**

RESIDENTIAL ALL MODES	AM Peak 0800-0900			PM Peak 1700-1800			Daily		
	depart	arrive	total	depart	arrive	total	depart	arrive	total
all houses	0.94	0.19	1.13	0.35	0.58	0.93	4.32	3.91	8.23
all flats	0.52	0.13	0.65	0.16	0.33	0.49	2.53	2.09	4.62
Mean	**0.73**	**0.16**	**0.89**	**0.26**	**0.46**	**0.71**	**3.43**	**3.00**	**6.43**

Source: TRICS

7.2.3 The figures have been compared with those produced for the Strategic Development Areas planned for South Hampshire at North/North East Hedge End and North Fareham, extracted from initial transport assessments of the sites. These indicate that car driver AM Peak trip rates are similar (0.40 departures compared with 0.42 here).

7.2.4 The trip rates have then been applied to proposed sites based on the number of each type of dwelling for each site. This produces the total number of generated trips for each individual site and in combination.

Non-Residential Trips

7.2.5 Some sites contain an element of employment land which can contribute towards providing local jobs for local residents and to address commuting imbalances. TRICS has been used for determining trip rates as shown in Table 7.2

Table 7.2 All Modes Non-Residential Trip Rates per 100sqm GFA

TOTAL TRIPS NON-RESIDENTIAL	AM			PM			DAY		
	depart	arrive	total	depart	arrive	total	depart	arrive	total
B1 Business Services	0.12	1.74	1.86	1.46	0.10	1.56	6.46	6.77	13.23
B2 Manufacturing	0.23	0.51	0.74	0.44	0.15	0.59	4.00	4.07	8.07
B8 Warehousing	0.24	0.74	0.98	0.66	0.19	0.85	4.59	4.95	9.54
	0.20	**1.00**	**1.19**	**0.85**	**0.15**	**1.00**	**5.02**	**5.26**	**10.28**

Source: TRICS

7.3 Mode Share

7.3.1 Mode share has been determined from 2001 Census Journey to Work data for the District. For comparison, figures for the region and England are included suggesting that the District overall has poor use of buses and cycling but relatively high walking and working at home. Winchester city has a high proportion of rail users and an encouraging number of bus users with a correspondingly low proportion of car drivers; walking compares favourably. Figures for Whiteley residents demonstrate high levels of car dependency and very few bus users; Whiteley daytime population data shows that 89% of journeys to work are made by car.

Table 7.3 Residential Mode Share

	England	South East Region	Winchester District	Whiteley (Resident)	Whiteley (Daytime)	Winchester City
Work at home	9.20%	9.98%	12.07%	10.52%	2.99%	10.05%
Train	7.43%	5.89%	4.22%	3.21%	1.47%	5.93%
Bus/minibus	7.55%	4.38%	3.25%	0.49%	1.90%	5.46%
Taxi/minicab	0.52%	0.41%	0.21%	0.00%	0.26%	0.31%
Car driver	56.29%	60.61%	60.19%	75.68%	82.81%	50.16%
Car passgr	6.14%	5.68%	4.95%	3.28%	6.80%	5.56%
Cycle	2.84%	3.08%	1.91%	1.60%	1.80%	2.37%
Walk	10.04%	9.96%	13.20%	5.23%	1.96%	20.17%

Source: Census 2001 adjusted for 'not currently working' and 'other' categories.

7.3.2 In this analysis, Winchester city proportions have been used for sites in and around the city, Whiteley resident data for North Whiteley and District figures for other locations. Similar figures have been used for non-residential trips having been re-based to exclude working at home.

7.4 Trip Distribution

7.4.1 Distribution has been based on Census Journey to Work data as shown in Tables 7.17, 7.18 and 7.19.

Table 7.4 Destination of Journeys to Work From District

Destination	Per Cent of Total
Winchester District and City	59.8
Southampton UA	5.2
Eastleigh	5.1
Portsmouth UA	4.0
Basingstoke and Deane	3.4
Fareham	2.8
Test Valley	2.6
East Hampshire	2.1
Havant	2.1
Westminster	1.1
New Forest	0.8
City of London	0.8
Hart	0.7
Gosport	0.6
West Berkshire UA	0.5
Rushmoor	0.5
Other	8.0

Source: Census 2001

Table 7.5 Destination of Journeys to Work From Winchester City

Destination	Per Cent of Total
Winchester District and City	69.8
Southampton UA	4.5
Basingstoke and Deane	4.0
Eastleigh	3.5
Test Valley	3.3
Westminster	1.3
East Hampshire	1.1
City of London	0.9
West Berkshire UA	0.8
New Forest	0.8
Hart	0.8
Portsmouth UA	0.7
Fareham	0.6
Other	8.0

Source: Census 2001

Table 7.6 Destination of Journeys to Work From Whiteley

Destination	Per Cent of Total
Winchester District and City	31.2
Fareham	16.1
Southampton UA	11.6
Portsmouth UA	11.5
Eastleigh	9.1
Basingstoke and Deane	2.8
Gosport	2.4
Havant	2.4
Test Valley	1.3
East Hampshire	0.9
Hillingdon	0.9
Rushmoor	0.9
Salisbury	0.9
Hart	0.7
New Forest	0.7
Other	6.0

Source: Census 2001

7.4.2 The number of trips has been determined by mode according to the destinations indicated above to reflect current travel patterns. While data on other trip purposes is lacking, the journey to work distribution gives a reasonable picture of AM Peak movements; education trips are also expected to take place in the AM Peak but many are contained within larger development sites or can be undertaken by means other than car. And hence are not included. Shopping trips can also take place locally but for higher order facilities, destinations include Southampton, Portsmouth, Basingstoke and other centres as well as Winchester, Eastleigh, Hedge End etc and generally take place at off peak periods.

7.5 Assignment by Mode

7.5.1 Based on the distribution, trips have been assigned to walk, cycle, bus and rail where available based on the options available for each location. For each of the destinations indicated by the distribution figures, trips have been assigned to rail, bus, taxi, car driver, and car passenger based on the options available for each location. This allows for local travel opportunities and circumstances rather than applying a uniform approach so, for example, where no direct rail service exists then the most appropriate route is selected. For journeys beyond the immediate area in question, cycle and walk trips are excluded and the remaining trips are redistributed by proportion to the other modes. Work at home trips are transferred to the internal trips matrix.

7.6 Highway Assignment

Growth Factors

7.6.1 Growth factors have been applied to the total trip number to provide an indication of possible low and high growth scenarios. These factors are based on National Road Traffic Forecasts (NRTF) 1997 for total traffic. Unlike TEMPRO (DfT's national trip end model), NRTF does not include allocated development trips and hence double counting is avoided. Table 7.7 shows the factors applied.

Table 7.7 Traffic Growth Factors

	Cars			Total Traffic		
	Low	Central	High	Low	Central	High
2008	1.122	1.212	1.302	1.131	1.222	1.313
2016	1.219	1.355	1.491	1.238	1.376	1.514
change	**1.086**	**1.118**	**1.145**	**1.095**	**1.126**	**1.153**
2008	1.122	1.212	1.302	1.131	1.222	1.313
2026	1.278	1.475	1.671	1.324	1.528	1.732
change	**1.139**	**1.217**	**1.283**	**1.171**	**1.250**	**1.319**

Source: NRTF 1997

Stress Factors

7.6.2 The Highways Agency has published stress factors as shown in Table 7.7 indicating where there are problems on the trunk road network.

Table 7.8 Highways Agency Stress Factors 2006

Location		Daily Stress
M3 north of Winchester	Both directions	0-90%
A34(T) north of Winchester	Both directions	0-90%
M3 southbound	South of Winchester	110-130%
M3 southbound	Eastleigh area	100-110%
M3 northbound	M27 Junction 14 to Winchester	110-130%
M27 Junctions 4 to 8	Both directions	110-130%
M27 Junctions 8 to 9	Both directions	100-110%
M27 Junctions 9 to 10	Both directions	90-100%
M27 Junctions 10 to 11	Both directions	100-110%
M27 Junctions 11 to 12	Eastbound	110-130%
M27 Junctions 11 to 12	Westbound	90-100%
A3(M)	Both directions	0-90%

Source: Highways Agency

7.6.3 A similar approach has been taken to assess the impact on the local road network in Winchester city based on CRF values but again applying local knowledge to assess whether generated traffic can be accommodated satisfactorily.

7.6.4 Table 7.9 shows the capacity used of the main radial routes in the city with background traffic growth included.

Table 7.9 Capacity of City Radial Routes in 2026

Location	Capacity	2008	2026 low	2026 high	2026 high Capacity
B3049 Stockbridge Road	16,771	6,043	7,076	7,971	47.5%
B3420 Andover Road	17,156	10,265	12,020	13,540	78.9%
C465 Worthy Road	16,991	7,288	8,534	9,613	56.6%
C3404 Alresford Road	17,540	5,801	6,793	7,652	43.6%
C465 Easton Lane	16,576	9,905	11,599	13,065	78.8%
B3330 Chesil Street	16,349	9,018	10,560	11,895	72.8%
B3335 St Cross Road	16,974	10,499	12,294	13,848	81.6%
B3040 Romsey Road	17,536	9,708	11,368	12,805	73.0%

7.6.5 The base year is 2008 on the basis that traffic data for the city and motorway network has been obtained for the first half of the year and other count data can be adjusted as required. Future year is 2026 and growth until then is based on NRTF factors. High and low growth scenarios are considered.

7.6.6 For rail, the implications of generated trips are considered against existing capacity at stations and on trains. For bus, the scope for additional services is considered against local knowledge of capacity and service frequencies.

8 Assessment of Settlements

8.1 Overall Approach

8.1.1 A settlement hierarchy has been set out. Winchester Town offers the highest order range of facilities and is the main urban area within the District. A number of market towns exist which have been identified as 'key hubs' including Bishops Waltham, Whiteley and Wickham (all in the PUSH area) and New Alresford. A number of smaller centres, 'local hubs', include Denmead, Colden Common, Kings Worthy, Waltham Chase and Swanmore.

8.1.2 The SWOT analysis (strengths, weaknesses, opportunities, threats) aims to provide a comparison of the settlements identified in the Issues and Options report on an equitable basis. Each settlement is discussed below in conjunction with a SWOT assessment.

8.1.3 Each location has been considered in terms of the trips generated, the expected mode split and hence how these additional trips would be assigned to the transport networks based on their assumed destinations. These figures represent the base case i.e. with no mitigation measures in place and reflect the higher quantum of possible development at each location to present a worst case scenario.

8.1.4 The number of vehicle trips has been applied to trunk road capacities (based on standard values for link capacity but noting local congestion locations) to assess the impacts and hence to identify situations in which additional traffic generated by development sites could be accommodated on the existing network and stress factors published by the Highways Agency have been taken into account; accident data obtained from Hampshire County Council has been used to consider the possible impacts of additional demand.

8.1.5 The locations considered in more detail include the following:

- Winchester Town Planned Boundaries Option:
  - Barton Farm;
  - Pitt Manor;
  - Worthy Road/Francis Gardens;
- Winchester Town Step Change Option:
  - Area 1 North;
  - Area 2 West;
  - Area 3 South West;
  - Area 4 South;
- New Alresford strategic options Areas 1 and 2;
- Bishops Waltham strategic options Areas 1, 2 and 3;
- Wickham strategic options Areas 1 and 2;
- Whiteley strategic options:
  - Areas 1 and 2 (north) ;
  - Area 3 (east);

- Denmead;
- West of Waterloville MDA strategic option Area 1 and reserve housing allocation; and
- Knowle.

8.1.6 We have also taken an outline view of Colden Common/Twyford/Shawford, Kings Worthy, Waltham Chase and Swanmore.

8.2 Winchester Town: Planned Boundaries Option

8.2.1 The South East Plan Panel Report noted the potential important role for the city to meeting development needs with good rail links and connectivity with South Hampshire. Currently the population is around 42,000 with 16,000 dwellings. It has been noted that there is a need for Winchester's economy to play a stronger role in the sub-regional and regional economies. This means that the current policies of restraint would be replaced by growth in higher education, creative and media industries, financial and professional services and other activities.

8.2.2 However, there is a sizable mismatch between jobs and housing with around 18,000 in-commuters daily and around 8,600 out-commuters. This is in part attributable to the rail and motorway links to London, Basingstoke and Southampton and in part due to the limited number and types of jobs within the city. Table 8.1 shows the attributes of the city.

8.2.3 Given that development will take place in and around the city, the transport issues need to be consolidated. Large scale infrastructure is unlikely to be achievable due to environmental constraints and the costs involved. For the highway network, the Highways Agency has indicated that additional pressures on the A34(T) and M3 would be undesirable and the local road network is constrained on the approaches to the city centre. A number of principles can be established:

- The **main line railway** is critical in providing links to Basingstoke, London and Southampton and offers a range of other destinations to the north and south including Reading, Portsmouth and Bournemouth. Additional parking for station users could be achieved but would need to make provision for off-peak rail users. While additional spaces would attract new users, this is unlikely to have an adverse effect on the congestion as many users will be arriving before the local commuter peak period. However, any new users will need to be accommodated on trains, many of which operate at or near capacity at peak times;
- The **local bus network** links housing areas with the centre and rail station and offers considerable potential for additional users;
- **Park and ride** and the consequential relationship with parking supply in the central area will play an increasingly important role in maintaining the economic activity of the city centre in a sustainable way. The planned new site to the south of the city could meet the needs of employers in the Romsey Road area (Winchester Community Prison, Royal Hampshire County Hospital, University of Winchester, etc) which could then manage their parking stock more efficiently or reduce parking provision. It is important that this second park and ride site reaches a different market from the well-established and well-used Bar End facility and hence the bus route should not seek to replicate the Bar End route;

- An increased level of **cycling** would be supported by improved infrastructure but offers potential for development sites at the current edge of the built-up area; and
- **Walking** is achievable across much of the city and with improved routes offers considerable potential as an alternative to car journeys.

Table 8.1 SWOT Analysis for Winchester Town

Strengths	Attractive city centre with range of facilities.
	Good range of rail services, capable of accommodating additional users, particularly southbound journeys and off peak use.
	Regular scheduled coach services to Southampton/Bournemouth, Heathrow Airport and London Victoria.
	Good core local bus network.
	High number of walking journeys.
	Acts as focus for an extensive rural catchment and surrounding smaller settlements.
Weaknesses	Historic core constrained.
	Limited cycling at present, in part attributable to limited facilities.
	Central area car parking maintained despite promotion of park and ride.
	AQMA throughout city centre declared.
Opportunities	Growth could be allied to extended and additional bus services, building on the success of core routes – services 1, 5 and The Spring.
	Major opportunities for walk and cycle journeys but needs to be supported by infrastructure improvements and the designation of unimpeded networks.
	Second park and ride site planned to south of city.
	Extensive development at Barton Farm could support walking and cycling to the city centre and rail station and support an additional bus service.
	Other sites could take advantage of established bus links, walking and cycling.
Threats	Balance of jobs to workers needs to change to maintain economic vitality.
	Historic fabric of city needs to be maintained.
	Central area constraints require consideration of car parking arrangements, air quality and accommodating a higher number of bus services.

Barton Farm

8.2.4 The largest Planned Boundaries site, Barton Farm to the north of the built-up area plugs a clear gap and is well located in relation to the city centre and rail station with potential for walk, cycle and bus journeys to be made in preference to car use. Concerns include the traffic impact on Andover Road and the City Road junction although this is currently uncongested outside peak periods. Suitable bus links would need to be devised and integrated into the current network of services.

8.2.5 Table 8.2 shows the trip assignment based on current assumptions with no mitigation measures with 2,000 dwellings.

Table 8.2 Barton Farm Base Assignment

Base Assignment		AM			PM			DAY	
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	164	35	198	59	102	160	761	676	1,437
Train									
north: Basingstoke	17	4	21	6	11	17	80	71	151
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	89	19	108	32	55	87	414	368	782
west	0	0	0	0	0	0	0	0	0
	106	**22**	**129**	**38**	**66**	**104**	**494**	**439**	**933**
Bus/minibus									
city: local network	55	12	67	20	34	54	256	228	484
north: 86 Whitchurch/B'stoke	13	3	15	5	8	12	59	52	111
east: X64 Alresford/Alton	6	1	7	2	3	5	26	23	49
south: BS1 Eastleigh	20	4	24	7	13	20	94	84	178
west: X66 Romsey	4	1	5	2	3	4	20	18	38
	98	**21**	**119**	**35**	**61**	**96**	**455**	**405**	**860**
Taxi/minicab									
local	6	1	7	2	3	5	26	23	49
Car driver									
city: City Road	278	59	337	100	173	273	1,294	1,150	2,444
north: Andover Rd/A34	162	34	196	58	100	159	753	669	1,422
east: City Road/M3J9	136	29	165	49	85	134	634	564	1,197
south: Romsey Rd/M3	243	51	294	87	151	238	1,129	1,004	2,132
west: Stockbridge Rd	80	17	97	29	50	78	371	330	702
	899	**190**	**1,090**	**324**	**558**	**882**	**4,180**	**3,717**	**7,898**
Car passgr									
city: City Road	31	7	37	11	19	30	143	127	271
north: Andover Rd/A34	18	4	22	6	11	18	83	74	158
east: City Road/M3J9	15	3	18	5	9	15	70	62	133
south: Romsey Rd/M3	27	6	33	10	17	26	125	111	236
west: Stockbridge Rd	9	2	11	3	5	9	41	37	78
	100	**21**	**121**	**36**	**62**	**98**	**463**	**412**	**875**
Cycle	27	6	33	10	17	26	125	111	236
Walk	229	48	278	83	142	225	1,065	947	2,013
Total	**1,629**	**344**	**1,973**	**586**	**1,010**	**1,597**	**7,569**	**6,731**	**14,300**

8.2.6 For Winchester town, SEERA and the Highways Agency support the development locations planned provided that there is no adverse effect on the trunk road network and that the imbalance of commuting movements can be addressed.

8.2.7 Barton Farm, has some impact on the trunk road network with additional traffic using the A34(T) and some expected southbound movements which are likely to use the M3. However, the main impacts will be on Andover Road even if this is confined largely to peak periods, particularly movements towards the city centre in the AM Peak. Measures to mitigate against traffic impact can be associated with the site, notably strong new and

enhanced walking and cycling routes and the provision of regular bus services to the city centre – examples are in place with the main established housing areas in the city being linked with frequent bus services.

Pitt Manor

8.2.8 Pitt Manor, offers potential to access employment in the Romsey Road corridor and would benefit from the frequent bus services already in place. This could enhance the inbound bus lane (possibly diverting it through the site) and focus on bus access as a priority. The site could also be served by new park and ride services from the planned site to the south of the city close to M3 Junction 11 and in addition, some parking capacity has been proposed within the Pitt Manor site (taken into account in the Revised Assignment in Chapter 9). It is also within walking and cycling distance of the city centre and rail station. Table 8.3 shows the trip assignment for an assumed 200 dwellings.

Table 8.3 Pitt Manor Base Assignment

Base Assignment	AM			PM			DAY		
EXTERNAL + INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	16	3	20	6	10	16	76	68	144
Train									
north: Basingstoke	2	0	2	1	1	2	8	7	15
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	9	2	11	3	6	9	41	37	78
west	0	0	0	0	0	0	0	0	0
	11	**2**	**13**	**4**	**7**	**10**	**49**	**44**	**93**
Bus / minibus									
city: local network	6	1	7	2	3	5	26	23	48
north: 86 from city	1	0	2	0	1	1	6	5	11
east: 64 from city	1	0	1	0	0	1	3	2	5
south: E3 Eastleigh	2	0	2	1	1	2	9	8	18
west: X66 Romsey	0	0	1	0	0	0	2	2	4
	10	**2**	**12**	**4**	**6**	**10**	**45**	**40**	**86**
Taxi / minicab									
local	1	0	1	0	0	1	3	2	5
Car driver									
city: Romsey Road	28	6	34	10	17	27	129	115	244
north: Andover Rd/A34	16	3	20	6	10	16	75	67	142
east: Badger Fm Rd	14	3	17	5	8	13	63	56	120
south: Badger Fm Rd/M3	24	5	29	9	15	24	113	100	213
west: Stockbridge Rd	8	2	10	3	5	8	37	33	70
	90	**19**	**109**	**32**	**56**	**88**	**418**	**372**	**790**
Car passgr									
city: Romsey Road	3	1	4	1	2	3	14	13	27
north: Andover Rd/A34	2	0	2	1	1	2	8	7	16
east: Badger Fm Rd	2	0	2	1	1	1	7	6	13
south: Badger Fm Rd/M3	3	1	3	1	2	3	13	11	24
west: Stockbridge Rd	1	0	1	0	1	1	4	4	8
	10	**2**	**12**	**4**	**6**	**10**	**46**	**41**	**87**
Cycle	3	1	3	1	2	3	13	11	24
Walk	23	5	28	8	14	22	107	95	201
Total	**163**	**34**	**197**	**59**	**101**	**160**	**757**	**673**	**1,430**

Worthy Road / Francis Gardens

8.2.9 Worthy Road/Francis Gardens at the edge of the built-up area adjacent to Itchen Abbas again offers relatively good access to the centre and features regular bus services and walk and cycle routes could be extended to incorporate the site. Table 8.4 shows the trip assignment for an assumed 80 dwellings.

Table 8.4 Worthy Road/Francis Gardens Base Assignment

Base Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	7	1	8	2	4	6	30	27	57
Train									
north: Basingstoke	1	0	1	0	0	1	3	3	6
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	4	1	4	1	2	3	17	15	31
west	0	0	0	0	0	0	0	0	0
	4	**1**	**5**	**2**	**3**	**4**	**20**	**18**	**37**
Bus/minibus									
city: local network	2	0	3	1	1	2	10	9	19
north: 86 Whitchurch/B'stoke	1	0	1	0	0	0	2	2	4
east: X64 Alresford/Alton	0	0	0	0	0	0	1	1	2
south: BS1 Eastleigh	1	0	1	0	1	1	4	3	7
west: X66 Romsey	0	0	0	0	0	0	1	1	2
	4	**1**	**5**	**1**	**2**	**4**	**18**	**16**	**34**
Taxi/minicab									
local	0	0	0	0	0	0	1	1	2
Car driver									
city: City Road	11	2	13	4	7	11	52	46	98
north: Andover Rd/A34	6	1	8	2	4	6	30	27	57
east: City Road/M3J9	5	1	7	2	3	5	25	23	48
south: Romsey Rd/M3	10	2	12	3	6	10	45	40	85
west: Stockbridge Rd	3	1	4	1	2	3	15	13	28
	36	**8**	**44**	**13**	**22**	**35**	**167**	**149**	**316**
Car passgr									
city: City Road	1	0	1	0	1	1	6	5	11
north: Andover Rd/A34	1	0	1	0	0	1	3	3	6
east: City Road/M3J9	1	0	1	0	0	1	3	2	5
south: Romsey Rd/M3	1	0	1	0	1	1	5	4	9
west: Stockbridge Rd	0	0	0	0	0	0	2	1	3
	4	**1**	**5**	**1**	**2**	**4**	**19**	**16**	**35**
Cycle	1	0	1	0	1	1	5	4	9
Walk	9	2	11	3	6	9	43	38	81
Total	**65**	**14**	**79**	**23**	**40**	**64**	**303**	**269**	**572**

Combined Local Highway Impacts

8.2.10 Current evidence shows that the established residential areas do not present major traffic congestion problems. For example, Badger Farm to the south, although generating trips and having good access to the M3, does not experience delays in peak periods. However, the main corridors of Romsey Road (inbound) and Badger Farm Road (outbound) experience delays due to in-commuting from outside the city which is exacerbated by local journeys. Similarly, peak period queuing on Andover Road is a result of a combination of local traffic and in-commuting from the north.

8.2.11 Taking the figures for capacity on selected routes and applying the development trips, we have determined the impact on each of these routes as shown in Table 8.5. This indicates that there will be large increases in daily traffic on Andover Road, Romsey Road and Easton lane in particular. While these can theoretically be accommodated within capacity, it is probable that severe problems would be caused at peak times.

Table 8.5 Local Highway Network Impacts

Location	Capacity	2026 High Flow	Devt Trips	2026 Total Flow	% Increase	2026 high Capacity
B3049 Stockbridge Road	16,771	7,971	814	8,785	10.2%	52.4%
B3420 Andover Road	17,156	13,540	1,621	15,161	12.0%	88.4%
C465 Worthy Road	16,991	9,613	146	9,759	1.5%	57.4%
C465 Easton Lane	16,576	13,065	1,245	14,310	9.5%	86.3%
B3040 Romsey Road	17,536	12,805	2,461	15,266	19.2%	87.1%

8.2.12 While the location of housing areas can be addressed, the location of employment and other land uses creates difficulties. The central area has limited capacity for additional jobs and other sites may need to be found. This would require new bus links which may not pass through the central area but would be constrained by the absence of suitable roads and a dispersed pattern of employment would be more likely to encourage car journeys. A further difficulty is that demand for parking at the rail station may increase and additional capacity will be sought, although this may add to traffic congestion in the central area at peak times.

8.2.13 There is considerable scope for measures to improve bus reliability. While essentially a radial highway pattern, recent experience has indicated that the removal of access to traffic does not create gridlock. Temporary closures of Romsey Road, Southgate Street and Stockbridge Road have reduced traffic levels with only limited redistribution. It could be argued that limited access in the form of a bus gate, for example at Southgate Street, is achievable. Such measures will be necessary as demands increase and especially if other measures such as park and ride are to be effective. Within a wider strategy, restricting parking in the central area and other key corridors such as Romsey Road will complement bus improvement measures.

8.2.14 To achieve the planned boundaries option, Winchester offers considerable potential for growth. The relative compactness of the city, its high proportion of walking trips, the natural and historic constraints on the road capacity available and the proximity of proposed sites to core facilities all contribute to a scenario in which sustainable modes can be supported. The greatest impact on the road network is expected to be locally, notably Andover Road inbound, but measures to reduce the proportion of car trips could be applied including travel planning, further parking constraints in the central area and the strong promotion of walking and cycling together with the introduction of a new bus service.

8.2.15 Additional demand for bus could be accommodated on existing services ('The Spring' to the city centre) although effective integration would be required and possibly additional peak time and evening services.

Combined Traffic Impacts on Major Routes

8.2.16 The traffic impacts for the Planned Boundaries options have been assessed in terms of the additional traffic on the A34(T) and M3 south of the city. Figures 8.1 and 8.2 show the additional demand for the A34(T) and Figure 8.3 shows additional traffic joining and leaving the M3 at Junction 11.

Figure 8.1 Impact of AM Peak Generated Trips at Three Maids Hill (A34(T))

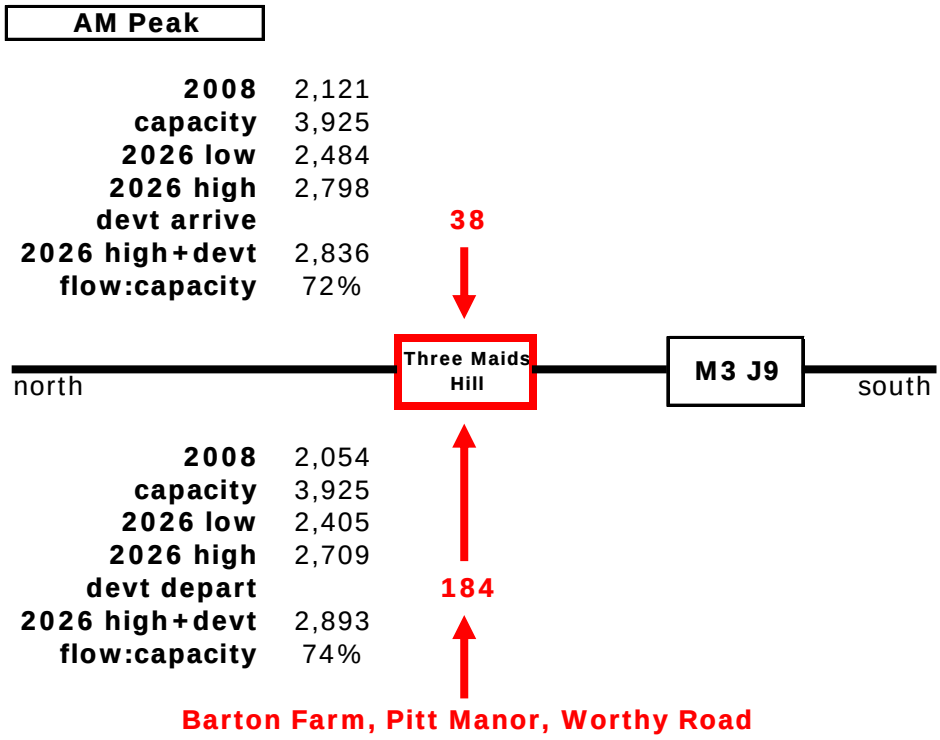
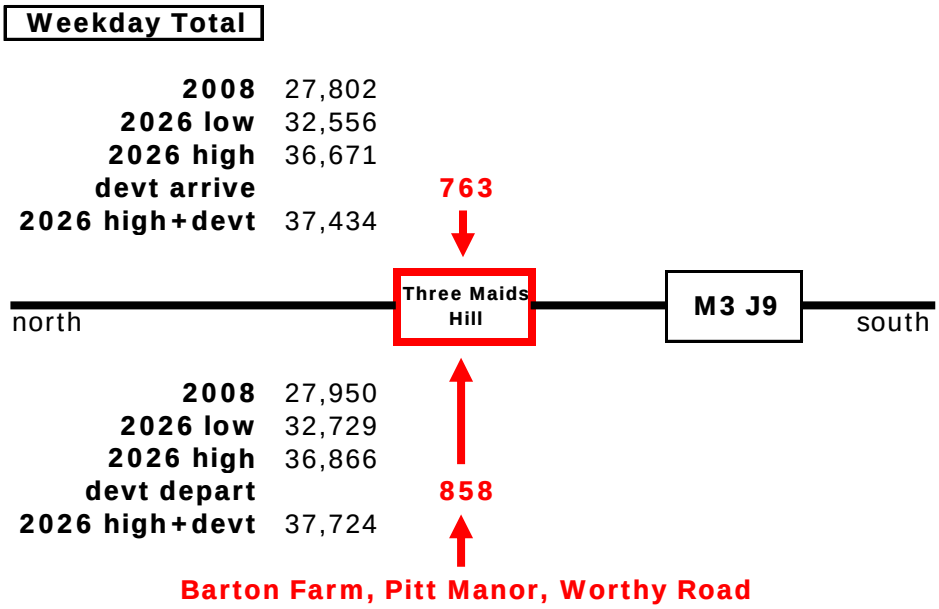


Figure 8.2 Impact of Daily Generated Trips at Three Maids Hill (A34(T))



8.2.17 The figures show that with increased demand, there is still capacity available on the A34(T). However some modifications to the Three Maids Hill junction may be appropriate given the current constrained layout for southbound exit and northbound entry.

8.2.18 Figures 8.3 and 8.4 indicates the additional demand for the M3 to the south of the city. In the absence of reliable data for the section between Junction 9 and Junction 10, we have included trips assigned to Easton lane/Junction 9 with Junction 11 as these would be included further south.

Figure 8.3 Impact of AM Peak Generated Trips at M3 Junction 11

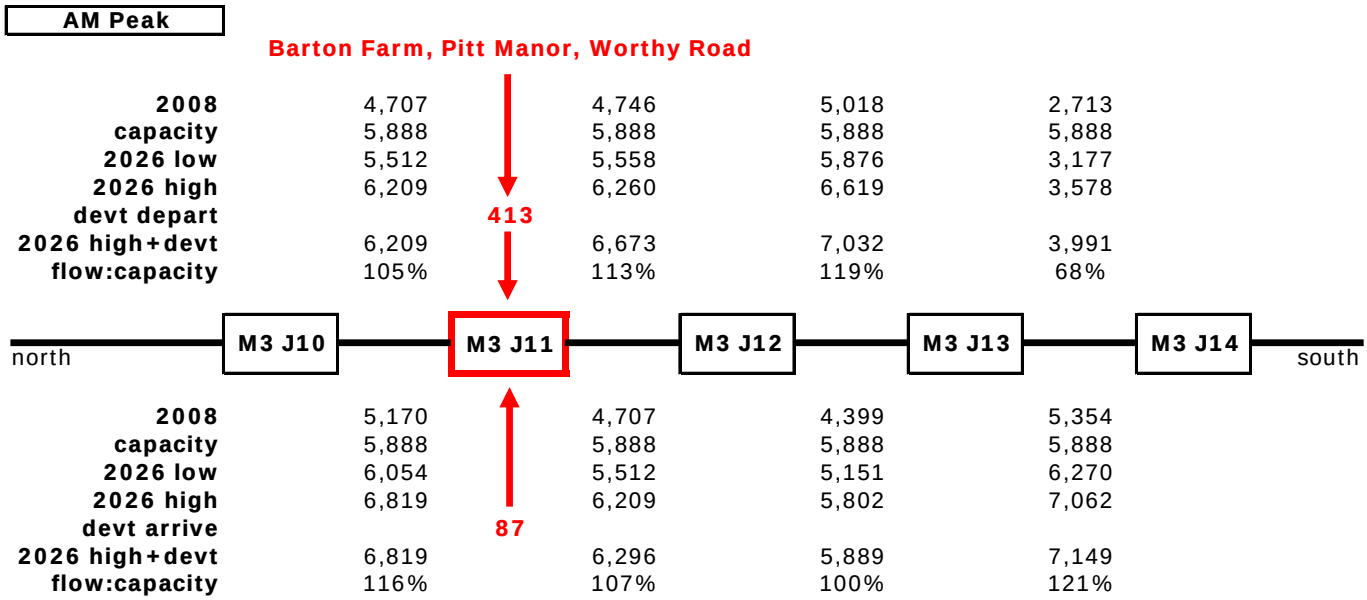
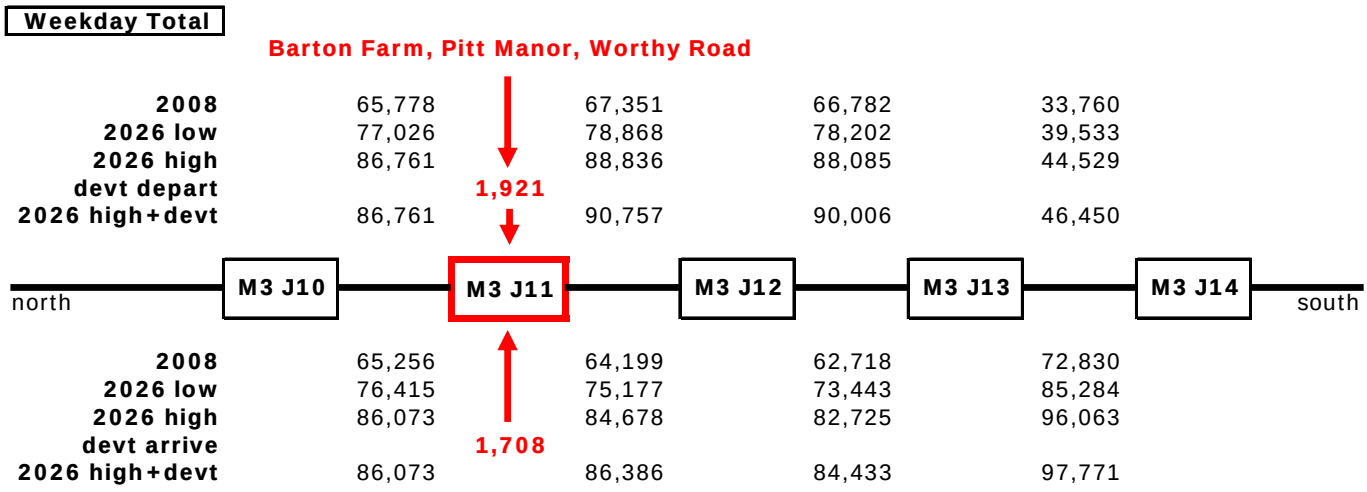


Figure 8.4 Impact of Daily Generated Trips at M3 Junction 11



8.2.19 For the M3, expected growth in traffic will exceed capacity such that congestion will become more regular and prolonged. The additional traffic generated by the development sites will exacerbate problems to the south of Junction 11 but also on links beyond. However, the quantity of traffic generated is low compared with expected growth levels so much of the congestion is unrelated to the development sites.

8.2.20 The Barton Farm site would add vehicle trips to the north - many of which would use the A34(T) - and towards the city centre and southbound routes. This would add pressure to Andover Road with a capacity being used of 87% to the north of the site and 100% to the south. This would imply congestion taking place regularly, particularly at peak times on the approach to the city centre although this assumes high growth – with a low growth scenario, 91% of capacity is used.

8.2.21 Other main routes in the city accommodate growth and additional trips in future years. However, to avoid unnecessary problems, there is a need to promote alternatives to car use, particularly for the Barton Farm site for which there are considerable opportunities to develop attractive walk and cycle routes and to support bus use.

8.3 Winchester Town: Step Change Option

8.3.1 Four indicative locations have been considered to the north, west, south west and south of the city. Tables 8.6 to 8.9 show the trip assignments for these respectively, assuming 4,000 new dwellings in each of Areas 2, 3 and 4. This represents a worst case scenario with capacity for between 3,000 and 4,000 dwellings in each – only one site would be selected or the allocation could be spread across two or more areas.

8.3.2 For larger sites at the periphery, similar issues apply with a need for strong radial bus routes to provide the necessary links between residential areas and employment locations. However, access to the A34(T) and M3 from the northern sites and to the M3 for southern sites would suggest that car-orientated development is more likely as the distance from the city centre increases and other journey to work opportunities emerge. New bus services would be required and the viability of these will need to be assessed. Walking opportunities would be reduced with distance and cycling may be less attractive than more central locations.

8.3.3 The calculations assume that each site has 20ha of employment land designated as ‘knowledge park’ with trip rates similar to a business park. The size of the Step Change options requires some employment to be included within the sites. Overall, the Step Change options could contribute significantly to the balance between jobs and residents in the city.

8.3.4 The step change option would require growth on a substantial scale and the limitations of the city’s transport networks would become apparent. While the traffic impact of the planned boundaries option on the trunk road network is manageable, any further growth would cause difficulties on the M3 in particular. However, it is acknowledged that greater expansion would create more opportunities to re-balance employment and reduce the current levels of in-commuting. This could present opportunities to create a wider bus network but is unlikely to meet a high proportion of travel demands due to the increased diversity of origins and destinations. Area 1 North also assumes park and ride could be included within the site and the extent to which this would reduce car trips is considered in Chapter 9.

Table 8.6 Winchester Town Step Change: Area 1 North Base Assignment

Base Assignment	AM			PM			DAY		
EXTERNAL + INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	327	69	397	118	203	321	1,521	1,353	2,874
Train									
north: Basingstoke	37	48	85	47	24	70	312	302	614
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	193	249	442	242	123	364	1,613	1,559	3,173
west	0	0	0	0	0	0	0	0	0
	230	**297**	**527**	**288**	**146**	**435**	**1,925**	**1,861**	**3,787**
Bus / minibus									
city: local network	119	154	274	150	76	226	999	965	1,964
north: 86 Whitchurch/B'stoke	27	35	63	34	17	52	229	222	451
east: X64 Alresford/Alton	12	15	27	15	8	23	100	97	197
south: BS1 Eastleigh	44	57	100	55	28	83	366	354	721
west: X66 Romsey	9	12	22	12	6	18	79	76	155
	212	**274**	**486**	**266**	**135**	**401**	**1,774**	**1,714**	**3,488**
Taxi / minicab									
local	12	16	28	15	8	23	101	98	199
Car driver									
city: City Road	602	779	1,382	756	383	1,139	5,044	4,875	9,919
north: Andover Rd/A34	351	453	804	440	223	663	2,935	2,837	5,771
east: City Road/M3J9	295	382	677	370	188	558	2,471	2,388	4,858
south: Romsey Rd/M3	525	680	1,205	659	334	994	4,400	4,253	8,653
west: Stockbridge Rd	173	224	397	217	110	327	1,448	1,400	2,848
	1,946	**2,518**	**4,464**	**2,441**	**1,239**	**3,680**	**16,297**	**15,752**	**32,049**
Car passgr									
city: City Road	67	86	153	84	42	126	559	540	1,099
north: Andover Rd/A34	39	50	89	49	25	73	325	314	639
east: City Road/M3J9	33	42	75	41	21	62	274	265	538
south: Romsey Rd/M3	58	75	134	73	37	110	487	471	959
west: Stockbridge Rd	19	25	44	24	12	36	160	155	316
	216	**279**	**495**	**270**	**137**	**408**	**1,805**	**1,745**	**3,551**
Cycle	58	75	134	73	37	110	487	471	959
Walk	496	642	1,138	622	316	938	4,153	4,014	8,168
Total	**3,498**	**4,170**	**7,668**	**4,094**	**2,221**	**6,315**	**28,065**	**27,009**	**55,074**

Table 8.7 Winchester Town Step Change: Area 2 West Base Assignment

Base Assignment	AM			PM			DAY		
EXTERNAL + INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	327	69	397	118	203	321	1,521	1,353	2,874
Train									
north	37	48	85	47	24	70	312	302	614
east	0	0	0	0	0	0	0	0	0
south	193	249	442	242	123	364	1,613	1,559	3,173
west	0	0	0	0	0	0	0	0	0
	230	**297**	**527**	**288**	**146**	**435**	**1,925**	**1,861**	**3,787**
Bus / minibus									
city: local network	58	75	132	72	37	109	484	468	951
north: And'r Rd, city	7	9	15	8	4	13	56	54	110
east: Romsey Rd, city	101	131	231	127	64	191	845	816	1,661
south: E'leigh/S'ton/P'mth	37	48	85	46	24	70	310	300	610
west' S'bridge Rd	9	12	22	12	6	18	79	76	155
	212	**274**	**486**	**266**	**135**	**401**	**1,774**	**1,714**	**3,488**
Taxi / minicab									
local	12	16	28	15	8	23	101	98	199
Car driver									
city: local network	592	766	1,359	743	377	1,120	4,961	4,795	9,755
north: And'r Rd, city	185	239	424	232	118	350	1,549	1,497	3,046
east: Romsey Rd, city	471	609	1,079	590	299	890	3,939	3,808	7,747
south: E'leigh/S'ton/P'mth	525	680	1,205	659	334	994	4,400	4,253	8,653
west' S'bridge Rd	173	224	397	217	110	327	1,448	1,400	2,848
	1,946	**2,518**	**4,464**	**2,441**	**1,239**	**3,680**	**16,297**	**15,752**	**32,049**
Car passgr									
city: local network	66	85	151	82	42	124	550	531	1,081
north: And'r Rd, city	20	27	47	26	13	39	172	166	337
east: Romsey Rd, city	52	67	120	65	33	99	436	422	858
south: E'leigh/S'ton/P'mth	58	75	134	73	37	110	487	471	959
west' S'bridge Rd	19	25	44	24	12	36	160	155	316
	216	**279**	**495**	**270**	**137**	**408**	**1,805**	**1,745**	**3,551**
Cycle	58	75	134	73	37	110	487	471	959
Walk	496	642	1,138	622	316	938	4,153	4,014	8,168
Total	**3,498**	**4,170**	**7,668**	**4,094**	**2,221**	**6,315**	**28,065**	**27,009**	**55,074**

Table 8.8 Winchester Town Step Change: Area 3 South West Base Assignment

Revised Assignment	AM			PM			DAY		
EXTERNAL + INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	327	69	397	118	203	321	1,521	1,353	2,874
Train									
north: Basingstoke	37	48	85	47	24	70	312	302	614
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	193	249	442	242	123	364	1,613	1,559	3,173
west	0	0	0	0	0	0	0	0	0
	230	**297**	**527**	**288**	**146**	**435**	**1,925**	**1,861**	**3,787**
Bus / minibus									
city: local network	220	284	504	275	140	415	1,839	1,777	3,616
north: 86 from city	27	35	63	34	17	52	229	222	451
east: 64 from city	12	15	27	15	8	23	100	97	197
south: E3 Eastleigh	44	57	100	55	28	83	366	354	721
west: X66 Romsey	9	12	22	12	6	18	79	76	155
	312	**404**	**716**	**392**	**199**	**590**	**2,614**	**2,527**	**5,141**
Taxi / minicab									
local	12	16	28	15	8	23	101	98	199
Car driver									
city: Romsey Road	422	545	967	529	268	797	3,531	3,413	6,943
north: Andover Rd/A34	351	453	804	440	223	663	2,935	2,837	5,771
east: Badger Fm Rd	295	382	677	370	188	558	2,471	2,388	4,858
south: Badger Fm Rd/M3	525	680	1,205	659	334	994	4,400	4,253	8,653
west: Stockbridge Rd	173	224	397	217	110	327	1,448	1,400	2,848
	1,766	**2,284**	**4,050**	**2,215**	**1,124**	**3,338**	**14,784**	**14,289**	**29,073**
Car passgr									
city: Romsey Road	47	60	107	59	30	88	391	378	769
north: Andover Rd/A34	39	50	89	49	25	73	325	314	639
east: Badger Fm Rd	33	42	75	41	21	62	274	265	538
south: Badger Fm Rd/M3	58	75	134	73	37	110	487	471	959
west: Stockbridge Rd	19	25	44	24	12	36	160	155	316
	196	**253**	**449**	**245**	**125**	**370**	**1,638**	**1,583**	**3,221**
Cycle	92	119	210	115	58	173	768	742	1,509
Walk	563	728	1,291	706	358	1,064	4,713	4,556	9,269
Total	**3,498**	**4,170**	**7,668**	**4,094**	**2,221**	**6,315**	**28,065**	**27,009**	**55,074**

Table 8.9 Winchester Town Step Change: Area 4 South Base Assignment

Base Assignment	AM			PM			DAY		
EXTERNAL + INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	327	69	397	118	203	321	1,521	1,353	2,874
Train									
north: B'stoke, M3	37	48	85	47	24	70	312	302	614
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	193	249	442	242	123	364	1,613	1,559	3,173
west	0	0	0	0	0	0	0	0	0
	230	**297**	**527**	**288**	**146**	**435**	**1,925**	**1,861**	**3,787**
Bus / minibus									
city: local network	119	154	274	150	76	226	999	965	1,964
north: 86 from city	27	35	63	34	17	52	229	222	451
east: 64 from city	12	15	27	15	8	23	100	97	197
south: E3 Eastleigh	44	57	100	55	28	83	366	354	721
west: X66 Romsey	9	12	22	12	6	18	79	76	155
	212	**274**	**486**	**266**	**135**	**401**	**1,774**	**1,714**	**3,488**
Taxi / minicab									
local	12	16	28	15	8	23	101	98	199
Car driver									
city: Romsey Road	602	779	1,382	756	383	1,139	5,044	4,875	9,919
north: Andover Rd/A34	169	219	388	212	108	320	1,416	1,368	2,784
east: Badger Fm Rd	476	616	1,093	598	303	901	3,990	3,856	7,846
south: Badger Fm Rd/M3	525	680	1,205	659	334	994	4,400	4,253	8,653
west: Stockbridge Rd	173	224	397	217	110	327	1,448	1,400	2,848
	1,946	**2,518**	**4,464**	**2,441**	**1,239**	**3,680**	**16,297**	**15,752**	**32,049**
Car passgr									
city: Romsey Road	67	86	153	84	42	126	559	540	1,099
north: Andover Rd/A34	19	24	43	23	12	35	157	152	308
east: Badger Fm Rd	53	68	121	66	34	100	442	427	869
south: Badger Fm Rd/M3	58	75	134	73	37	110	487	471	959
west: Stockbridge Rd	19	25	44	24	12	36	160	155	316
	216	**279**	**495**	**270**	**137**	**408**	**1,805**	**1,745**	**3,551**
Cycle	58	75	134	73	37	110	487	471	959
Walk	496	642	1,138	622	316	938	4,153	4,014	8,168
Total	**3,498**	**4,170**	**7,668**	**4,094**	**2,221**	**6,315**	**28,065**	**27,009**	**55,074**

8.3.5 The development of Bushfield Camp to the south of the city as a business park has been mooted. However, this type of land use generally attracts higher order employment from a wide catchment area and is typically car-orientated. The proximity of the M3 would support this scenario. However, the availability of park and ride services towards Romsey Road and the city centre from the planned site could provide regular bus links. The main issue is to justify business park uses in Winchester, particularly as there is no activity of this type at present and its relationship with potentially larger sites, for example at SHSEZ.

8.4 New Alresford

8.4.1 Alresford has good road access to Winchester and Alton via the A31 which is mainly dual carriageway with relatively low traffic flows. While the east-west link is a focus for travel, the location of the town provides opportunities to travel by car to a wide range of destinations for a variety of purposes including work and education. While a bus service operates, this does not appeal to many of the relatively affluent population and car ownership is high. Walking and cycling opportunities are contained within the town. Any growth would require considerably improved bus services and the viability of this would need to be investigated in more detail. However, given the town's relative isolation, strong demand on the key Winchester to Alton corridor would be needed in the absence of any other significant demand on the route. On this basis, it is unlikely that a bus service of attractive frequency could be secured. A preserved railway, the Watercress Line, operates between Alton and Alresford but previous efforts to develop a commuter service on the line have not been successful for a variety of reasons and these circumstances are unlikely to change.

8.4.2 Both the potential sites identified are within easy walking distance of the town centre although Area 2 is adjacent to the A31 and hence offers easier road connections. Current bus services pass through the town centre and access to both sites would be using appropriate new walk links. Table 8.10 indicates the merits of this location.

Table 8.10 SWOT Analysis for Alresford

Strengths	Established and attractive town centre with local facilities.
	Bus links to Winchester and Alton.
	Road access via A31 uncongested.
	Local facilities available and town serves villages and rural communities across a wide rural area.
Weaknesses	Relatively isolated with Winchester and Alton as larger centres so car use will continue to dominate.
	Improvements to bus services unlikely given the relative isolation and lack of demand.
	Development sites not ideally located in relation to core road and town centre.
	Nearest rail stations at Winchester and Alton.
Opportunities	Some development is possible but unlikely to generate sufficient demand for bus service improvements.
Threats	Undermining the traditional character of the town.
	Additional demand for parking in the town centre.

8.4.3 Table 8.11 shows the trip assignment for an indicative allocation of 500 dwellings at Area 1 (west of the town centre) and Area 2 (east of the town) to represent the higher end of the

range for the strategic options (the low projection being 300 dwellings at the two sites). Given the freestanding nature of the town, a different allocation would be expected to result in generated trips pro rata to those indicated here.

Table 8.11 New Alresford Base Assignment

Base Assignment		AM			PM			DAY		
EXTERNAL+INTERNAL		depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home		41	9	50	15	25	40	190	169	359
Train										
	north	0	0	1	0	0	0	2	2	4
	east: Alton	2	0	2	1	1	1	7	6	13
	south	0	0	1	0	0	0	2	2	4
	west: Winchester	21	4	25	7	13	20	96	85	181
		23	**5**	**28**	**8**	**14**	**23**	**107**	**95**	**202**
Bus/minibus										
	north	4	1	4	1	2	4	17	15	32
	east: Alton	2	0	3	1	1	2	10	9	20
	south	7	1	8	2	4	6	30	27	57
	west: Winchester	7	2	9	3	5	7	35	31	66
	0	0	0	0	0	0	0	0	0	0
		20	**4**	**24**	**7**	**12**	**19**	**92**	**82**	**174**
Taxi/minicab										
	local	1	0	1	0	1	1	5	5	10
Car driver										
	north	42	9	51	15	26	42	197	175	372
	east: Alton	26	6	32	9	16	26	122	109	231
	south	80	17	97	29	50	79	374	333	707
	west: Winchester	95	20	115	34	59	93	440	391	830
	0	0	0	0	0	0	0	0	0	0
		244	**52**	**295**	**88**	**151**	**239**	**1,133**	**1,007**	**2,140**
Car passgr										
	north	4	1	5	2	3	4	19	17	37
	east: Alton	3	1	3	1	2	2	12	10	22
	south	8	2	9	3	5	8	36	32	69
	west: Winchester	9	2	11	3	6	9	42	37	79
	0	0	0	0	0	0	0	0	0	0
		24	**5**	**29**	**8**	**15**	**23**	**109**	**97**	**207**
Cycle		6	1	7	2	4	6	27	24	51
Walk		49	10	59	18	30	48	228	203	431
Total		**407**	**86**	**493**	**147**	**253**	**399**	**1,892**	**1,682**	**3,574**

8.4.4 Buses serving Alresford and surrounds are unlikely to be enhanced viably in the absence of large scale development given the absence of intermediate areas of demand and the limited range of journey opportunities.

8.4.5 In Alresford, the Town Council indicated that growth beyond the existing built-up area would not be supported. While considerable road capacity is available, the town is relatively isolated and public transport is not to a standard that provides an alternative to car use for many journeys. There are also constraints on the number of public parking spaces that can be provided in the centre.

8.4.6 While there may be options for Alresford to accommodate a higher level of development, it is unlikely that this could be supported by sustainable transport measures at any level as most trips would be by car, particularly given the capacity available on the A31 towards Winchester.

8.5 Bishops Waltham

8.5.1 Bishops Waltham is located within easy reach of the PUSH urban areas but retains its market town appeal. A range of local facilities is available but outward journeys to work and schools are evident. Local bus services provide links to larger settlements but journey times do not compare favourably with car use. No rail links exist but car/train journeys are possible via Botley or other stations. Dispersed travel patterns make the provision of improved public transport difficult.

8.5.2 The sites identified are to the west and south of the built-up area close to the B2177 Winchester Road. While buses use this route, service frequency is less attractive than car options. For Area 1 to the west, walking and cycling journeys are likely to be less attractive than short car journeys to the main retail part of the town. Table 8.12 indicates the SWOT analysis.

Bishops Waltham – historic centre but car movements dominate

Table 8.12 SWOT Analysis for Bishops Waltham

Strengths	Established and attractive town centre with local facilities.
	Bus links to Winchester and Fareham.
	Serves numerous small settlements and rural catchment.
Weaknesses	South Hampshire centres attract workers and offer higher order facilities.
	No rail access with nearest station at Botley.
Opportunities	Bus services would need to be improved to serve additional development but viability would need to be proven.
	Could be considered alongside nearby centres such as Swanmore and Wickham.
Threats	Larger areas of activity to the south could further isolate the town and undermine local facilities.

8.5.3 Table 8.13 shows the base assignment with an indicative allocation of 300 dwellings in Area 1 (west of the town centre), 500 dwellings in Area 2 (south west) and 300 dwellings in Area 3 (south east), a total of 1,100 dwellings as a worst case scenario (compared with the lower projected allocations of 200, 300 and 200 respectively).

Table 8.13 Bishops Waltham Base Assignment

Base Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	90	19	109	32	56	88	418	372	790
Train									
north: Winchester	23	5	27	8	14	22	105	93	199
east	3	1	4	1	2	3	14	13	27
south: Fareham	13	3	16	5	8	13	62	55	117
west: Eastleigh	11	2	14	4	7	11	53	47	100
	51	**11**	**61**	**18**	**31**	**50**	**235**	**209**	**444**
Bus/minibus									
north: Winchester	26	6	32	9	16	26	121	108	230
east	3	1	4	1	2	3	14	12	26
south: Fareham	7	2	9	3	5	7	34	30	64
west: Eastleigh	7	2	9	3	5	7	34	30	64
0	0	0	0	0	0	0	0	0	0
	44	**9**	**53**	**16**	**27**	**43**	**203**	**181**	**384**
Taxi/minicab									
local	3	1	3	1	2	3	12	11	23
Car driver									
north: Winchester	212	45	257	76	132	208	986	877	1,863
east	71	15	86	26	44	70	330	294	624
south: Fareham	96	20	117	35	60	94	448	398	846
west: E'leigh/H End	157	33	190	56	97	154	729	648	1,377
0	0	0	0	0	0	0	0	0	0
	536	**113**	**650**	**193**	**333**	**526**	**2,492**	**2,216**	**4,709**
Car passgr									
north: Winchester	22	5	27	8	14	22	102	91	194
east	7	1	8	2	4	6	31	27	58
south: Fareham	9	2	11	3	5	9	40	36	76
west: E'leigh/H End	14	3	17	5	9	14	67	60	127
0	0	0	0	0	0	0	0	0	0
	52	**11**	**63**	**19**	**32**	**51**	**241**	**214**	**455**
Cycle	13	3	15	5	8	12	59	52	111
Walk	108	23	131	39	67	106	502	446	948
Total	**896**	**189**	**1,085**	**322**	**556**	**878**	**4,162**	**3,701**	**7,863**

8.6 Wickham

8.6.1 Wickham similarly has local facilities but is also dependent on links with larger settlements and employments locations such as Whiteley/Segensworth and Fareham as well as the two cities. Local bus services are available but not sufficient in number to attract car users in an area where car ownership is widespread. Although within cycling distance of Whiteley and Fareham, no clear routes are available and there is competition for road space with vehicles. Cycling links could be developed in conjunction with development at North Whiteley and the North Fareham SDA and it should be possible for bus services could be extended and improved to incorporate Wickham under this scenario (see Table 8.14).

8.6.2 The identified sites to the south west and north are within walking distance of the village centre (The Square) but car journeys to a wider range of destinations is facilitated by the road connections to larger settlements. Environmental improvements to The Square could be undertaken if parking could be relocated to a suitable site.

8.6.3 The relationship between Wickham and Knowle could be strengthened. Knowle is an isolated settlement currently but could benefit from expanded development at Wickham and/or North Fareham SDA, particularly in terms of improved bus links (currently hourly on weekdays and broadly hourly on Saturdays but without a Sunday service).

The Square, Wickham – parking dominates retail and related activities

Table 8.14 SWOT Analysis for Wickham

Strengths	Established and attractive town centre with local facilities. Bus links to Winchester and Fareham. Provides a focus for rural communities and smaller settlements.
Weaknesses	South Hampshire urban centres attract workers and offer higher order facilities. No rail access with nearest station at Fareham.
Opportunities	Bus services would need to be improved to serve additional development but viability would need to be proven. Could be considered alongside nearby centres such as Swanmore and Bishops Waltham. Could benefit from North Fareham SDA and additional development at Knowle e.g. through employment markets and improved bus and cycle links.
Threats	Larger areas of activity to the south could further isolate the town and undermine local facilities.

8.6.4 Table 8.15 shows the base assignment for an assumed 400 additional dwellings in Area 1 (west of the village centre) and a further 300 Area 2 (north) for the strategic options; low assumptions are for 300 and 200 dwellings.

Table 8.15 Wickham Base Assignment

Base Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	57	12	69	21	36	56	266	237	503
Train									
north: Winchester	14	3	17	5	9	14	67	59	126
east	2	0	2	1	1	2	9	8	17
south: Fareham	11	2	13	4	7	11	52	46	98
west: Eastleigh	5	1	6	2	3	5	22	19	41
	32	**7**	**39**	**12**	**20**	**32**	**149**	**133**	**282**
Bus/minibus									
north: Winchester	17	4	20	6	10	16	77	69	146
east	2	0	2	1	1	2	9	8	17
south: Fareham	6	1	7	2	4	6	28	25	53
west: Eastleigh	3	1	4	1	2	3	15	13	28
0	0	0	0	0	0	0	0	0	0
	28	**6**	**34**	**10**	**17**	**27**	**129**	**115**	**244**
Taxi/minicab									
local	2	0	2	1	1	2	8	7	14
Car driver									
north: Winchester	135	29	164	49	84	132	627	558	1,185
east	45	10	55	16	28	44	210	187	397
south: Fareham	96	20	116	35	60	94	446	397	842
west: E'leigh/H End	65	14	79	23	40	64	303	269	572
0	0	0	0	0	0	0	0	0	0
	341	**72**	**413**	**123**	**212**	**335**	**1,586**	**1,410**	**2,996**
Car passgr									
north: Winchester	14	3	17	5	9	14	65	58	123
east	4	1	5	2	3	4	20	17	37
south: Fareham	9	2	11	3	6	9	41	37	78
west: E'leigh/H End	6	1	7	2	4	6	27	24	51
0	0	0	0	0	0	0	0	0	0
	33	**7**	**40**	**12**	**20**	**32**	**153**	**136**	**289**
Cycle	8	2	10	3	5	8	37	33	71
Walk	69	15	83	25	43	67	319	284	603
Total	**570**	**120**	**690**	**205**	**354**	**559**	**2,649**	**2,355**	**5,004**

8.6.5 In the southern part of the District, local communities have presented some resistance to growth, notably Wickham and Bishop's Waltham, largely because of assumed traffic problems. While road capacity is available in the area, problems in the larger urban areas to which people may travel are more likely, particularly with the expected North Fareham SDA traffic (and the Hedge End SDA) in addition. However, restraining development in the smaller settlements does not support the provision of improved bus services.

8.7 Whiteley

8.7.1 Whiteley is a recently developed area with its only road access (apart from a minor road) via M27 Junction 9 and the A27 at Segensworth. This means that the area is associated with severe traffic congestion at peak times for both residents travelling out and in-commuters to the various extensive employment sites. The failure to complete Whiteley Way to provide access to the north has been a severe constraint on the site while the high rates of car ownership have inevitably led to near-total car dependency. Bus services have been difficult to secure given the limited access but recently, the implementation of the Yew Tree Drive

bus link has provided an alternative route out of Whiteley to the A3051 Botley Road at Swanwick and hence to gain access to Swanwick station. Within the site, some provision has been made for walking and cycling but priority has been given to vehicle movements. Parking difficulties are evident with roads in the area of the employment premises being congested with parked vehicles in addition to those using designated car parks. Table 8.16 indicates the potential for Whiteley.

Table 8.16 SWOT Analysis for Whiteley

Strengths	Relatively recent development includes extensive employment opportunities and comparison retail as well as a large supermarket.
Weaknesses	Road access limited to M27 Junction 9/Segensworth with severe congestion at peak times. Largely car-orientated due to poor bus services and lack of viable walk and cycle routes.
Opportunities	Yew Tree Drive bus link provides opportunity to access Swanwick station by bus. Retail and employment facilities provide a focus for more housing development. Scope to reconsider the role of the Whiteley Way extension.
Threats	Further development would add to M27 congestion and pressure on the local road network. Continuation of Whiteley Way to the north is essential to avoid further substantial pressures on the M27 at Junction 9. Current lack of sustainable modes needs to be overcome and integrated with additional development sites.

Highway Impacts

8.7.2 There is considerable space available for expansion of the built-up area and Whiteley could accommodate a sizable proportion of the housing allocation. However, further development will add considerably to the congestion already experienced. Even with Whiteley Way in place, the Highways Agency's concerns about overloading the M27 at Junction 9 will need to be addressed. Considerable effort is required to secure measures to address transport problems to the extent required.

8.7.3 In this respect, any further development at Whiteley needs to be considered in the context of the North/North East Hedge End SDA and the links between the SDA and major centres, particularly high quality bus services that could be provided. For the SDA, links towards both Southampton (via Hedge End and M27 Junction 7) and towards Fareham and Portsmouth are envisaged, the latter taking in Whiteley with the availability of an extended Whiteley Way. This raises the possibility of constructing the Whiteley Way extension for buses only, creating a core bus priority route and supporting sustainable journeys. This could provide links to

Botley rail station to the north and use priority measures on the M27 (or Segensworth and A27) to the south and hence create a bus service with considerable advantages over car use. Designating Whiteley Way as a bus-only road would require no additional construction costs and creates new journey opportunities.

8.7.4 It has been assumed that the extension of Whiteley Way to the north to connect with the A3051 at Curbridge near Botley would be essential for any further development to function and for the existing area to escape the constraint of M27 Junction 9. It has also been assumed that a Botley Bypass could be constructed to, in effect, extend Whiteley Way and provide a new route from the North/North East Hedge End SDA with M27 Junction 9. However, this may not be desirable in traffic terms as it would provide an attractive alternative to the trunk road network and facilitate car journeys from Whiteley to the north with adverse effects on communities such as Fair Oak, Colden Common and Twyford.

Public Transport Opportunities

8.7.5 There may be opportunities for an additional rail station at Segensworth (provided that some services from the Southampton to Fareham line can be diverted to the Botley line to access Southampton Airport Parkway with the construction of Eastleigh Chord). New bus services could be provided linking the area with Swanwick station and Southampton and also with Fareham and Portsmouth. This may require priority measures on the M27 motorway. For viable, high quality bus services to be provided, the relationship between Whiteley and other possible development sites needs to be considered, for example the opportunities provided for through services to the North/North East Hedge End SDA. Current bus services are very limited in number (First service 28 operates 9 journeys to Fareham per day and First 76A operates a few journeys in peak periods only). This deficiency must be overcome and improved by a very significant margin if Whiteley is to function sustainably.

Bus gate with rising bollards at Yew Tree Drive, Swanwick

8.7.6 Areas 1 and 2 to the north of Whiteley have considerable potential but only if strong public transport connections can be promoted to avoid further traffic congestion problems in the M27 Junction 9/Segensworth areas. These areas could be linked to Botley station to the north and potentially with the North/North East Hedge End SDA. Within these extensive sites, bus links with appropriate walking and cycling routes also, could link the housing areas with the existing retail area of Whiteley. To achieve worthwhile bus provision, these sites must be designed with bus access as a priority to ensure that the bus option is preferable to car access but this may be undermined by the completion of Whiteley Way which would provide direct car access to Botley and the north. Given the extent to which Whiteley is car orientated currently, a range of measures is needed not only to provide for new development sites in a sustainable way but also to extend the principle to the existing residential, employment and retail areas. This is a considerable challenge.

On-road parking at Solent Business Park, Whiteley

8.7.7 The identified site at Area 3 to the south east adjacent to the M27 does not relate well to the existing retail and employment areas due to the location of the SSSI. The site relates more meaningfully to Fareham but due to the constraints of the railway and motorway, providing viable bus services would be questionable. Cycling routes could be extended, formalizing the route along the former railway towards Fareham town centre and to the relatively isolated recent housing development at Knowle. Regular walking routes are unlikely to feature due to the distance between the site and established local centres.

New housing in many parts of Whiteley is remote from bus services

Sign outside Tesco at Whiteley illustrating the separation of non-car modes from land uses

8.7.8 Tables 8.17 and 8.18 show the trip assignment for Areas 1 and 2 (North Whiteley) with 3,000 dwellings and a further 2,000 in Area 3 (south east, adjacent to M27) respectively; a lower figure of 1,500 for Area 3 has been suggested. With a large site, the impact could be considerable. Current trip rates by car are exceptionally high in Whiteley currently – if lower trip rates could be justified, then the number of car trips overall would reduce but the impact would remain high due to the large size of the proposed development.

Table 8.17 Whiteley Strategic Options: Areas 1 and 2 Base Assignment

Base Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	257	54	311	92	159	252	1,194	1,062	2,256
Train									
north: Botley	54	11	65	19	33	53	249	222	471
east: Swanwick	24	5	29	9	15	23	111	99	209
south	0	0	0	0	0	0	0	0	0
west: Swanwick	5	1	6	2	3	5	25	22	46
	83	**17**	**100**	**30**	**51**	**81**	**385**	**342**	**727**
Bus/minibus									
north: Whiteley Way	5	1	6	2	3	5	23	21	44
east: M27J9	2	0	3	1	1	2	10	9	19
south: M27J9	3	1	4	1	2	3	15	13	28
west: M27J9	2	0	3	1	1	2	11	10	21
local	7	1	8	2	4	7	32	28	60
	19	**4**	**24**	**7**	**12**	**19**	**90**	**80**	**170**
Taxi/minicab									
local	0	0	0	0	0	0	0	0	0
Car driver									
north: Whiteley Way	508	107	615	183	315	498	2,361	2,100	4,461
east: M27J9	595	126	721	214	369	584	2,767	2,461	5,228
south: M27J9	401	85	485	144	249	393	1,862	1,656	3,517
west: M27J9	450	95	545	162	279	441	2,091	1,859	3,950
local	14	3	17	5	8	13	63	56	120
	1,968	**416**	**2,383**	**708**	**1,221**	**1,929**	**9,145**	**8,132**	**17,276**
Car passgr									
north: Whiteley Way	22	5	27	8	14	22	102	91	193
east: M27J9	26	5	31	9	16	25	120	107	226
south: M27J9	17	4	21	6	11	17	81	72	152
west: M27J9	19	4	24	7	12	19	90	80	171
local	7	1	8	2	4	7	32	28	60
	91	**19**	**111**	**33**	**57**	**90**	**425**	**378**	**802**
Cycle	33	7	40	12	20	32	152	135	287
Walk	60	13	73	22	37	59	280	249	530
Total	**2,511**	**531**	**3,042**	**904**	**1,558**	**2,462**	**11,671**	**10,378**	**22,049**

8.7.9 The scale of the proposed development is such that the number of car trips generated is considerable and will act in combination with other developments in the M27 including the two SDAs. While the M27 is heavily used, background growth will make congestion a more

regular occurance and the capacity of the junctions is limited. Junction 9 in particular has problems arising from its proximity to the congested A27 Segensworth Roundabout.

8.7.10 The key to unlocking the transport problems of existing and proposed Whiteley is the creation of an extensive and attractive public transport network of services. The high level of car dependency reflects the limited services available and the design of the area is not conducive to bus access. However, a comprehensive review needs to be undertaken to establish how bus services from all parts of Whiteley can link with rail services at Botley and Swanwick and provide better journey opportunities than car for many people. Reducing the number of car movements will be necessary to avoid severe problems at Junction 9 but this will not be achieved by a marginal change in services: a significant change is needed, probably involving restraints on car parking, to provide viable and effective public transport access. This needs to be undertaken in association with plans for the North/North east Hedge End SDA. Failure to achieve this will preclude development opportunities at North Whiteley.

Table 8.18 Whiteley Strategic Options: Area 3 Base Assignment

Base Assignment		AM			PM			DAY	
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	171	36	208	62	106	168	796	708	1,504
Train									
north: Botley	36	8	43	13	22	35	166	148	314
east: Swanwick	16	3	19	6	10	16	74	66	140
south	0	0	0	0	0	0	0	0	0
west: Swanwick	4	1	4	1	2	3	16	15	31
	55	**12**	**67**	**20**	**34**	**54**	**256**	**228**	**484**
Bus/minibus									
north: Whiteley Way	3	1	3	1	2	3	13	12	25
east: Whiteley Lane, A27	1	0	2	0	1	1	6	5	11
south: Whiteley Lane, A27	2	0	3	1	1	2	10	9	19
west: Whiteley Lane, A27	2	0	3	1	1	2	10	9	19
local	5	1	6	2	3	4	21	19	40
	13	**3**	**16**	**5**	**8**	**13**	**60**	**53**	**114**
Taxi/minicab									
local	0	0	0	0	0	0	0	0	0
Car driver									
north: Whiteley Way	339	72	410	122	210	332	1,574	1,400	2,974
east: Whiteley Lane, A27	416	88	504	150	258	408	1,934	1,720	3,654
south: Whiteley Lane, A27	267	56	324	96	166	262	1,241	1,104	2,345
west: Whiteley Lane, A27	281	59	340	101	174	275	1,304	1,160	2,464
local	9	2	11	3	6	9	42	38	80
	1,312	**277**	**1,589**	**472**	**814**	**1,286**	**6,096**	**5,421**	**11,518**
Car passgr									
north: Whiteley Way	15	3	18	5	9	14	68	61	129
east: Whiteley Lane, A27	18	4	22	6	11	18	84	74	158
south: Whiteley Lane, A27	12	2	14	4	7	11	54	48	101
west: Whiteley Lane, A27	12	3	15	4	8	12	56	50	107
local	5	1	6	2	3	4	21	19	40
	61	**13**	**74**	**22**	**38**	**60**	**283**	**252**	**535**
Cycle	22	5	26	8	14	21	101	90	191
Walk	40	8	49	14	25	39	187	166	353
Total	**1,674**	**354**	**2,028**	**603**	**1,039**	**1,641**	**7,780**	**6,919**	**14,699**

Traffic Impacts on Major Routes

8.7.11 Figure 8.5 illustrates the impact of additional development at Whiteley based on current travel patterns including Areas 1 and 2 and also an indication of the expected demand from the North/North East Hedge End SDA with traffic assigned to Whiteley Way. (Area 3 would

assign traffic to the A27 and much of it could remain on the A27 for westbound trips rather than divert to the M27.) However, the figures do not include traffic from the North Fareham SDA – although this would be orientated mainly on Fareham and Portsmouth, it would be reasonable to assume that some generated traffic would use the M27 to the west through Junction 9. Also, trips across the junction between Whiteley and Segensworth have not been included and considerable problems can arise from this given the short link length between the two roundabouts, the limited capacity at Segensworth and further demand due to other land use changes in addition to the current congestion experienced on both the A27 and M27.

Figure 8.5 Impact of AM Peak Generated Trips at M27 Junction 9 Whiteley

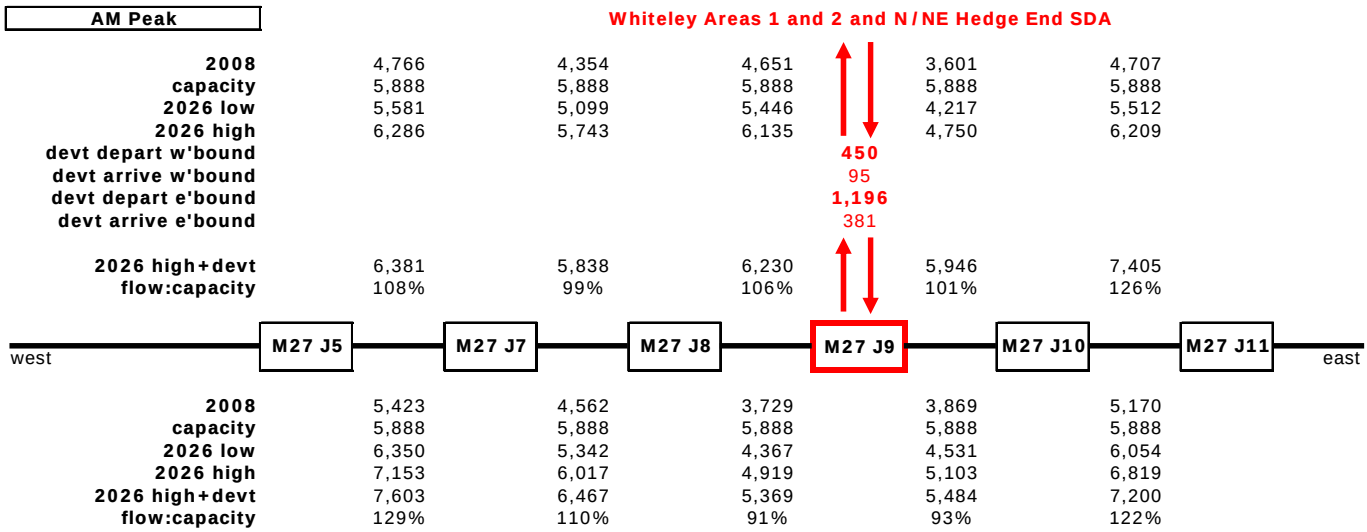
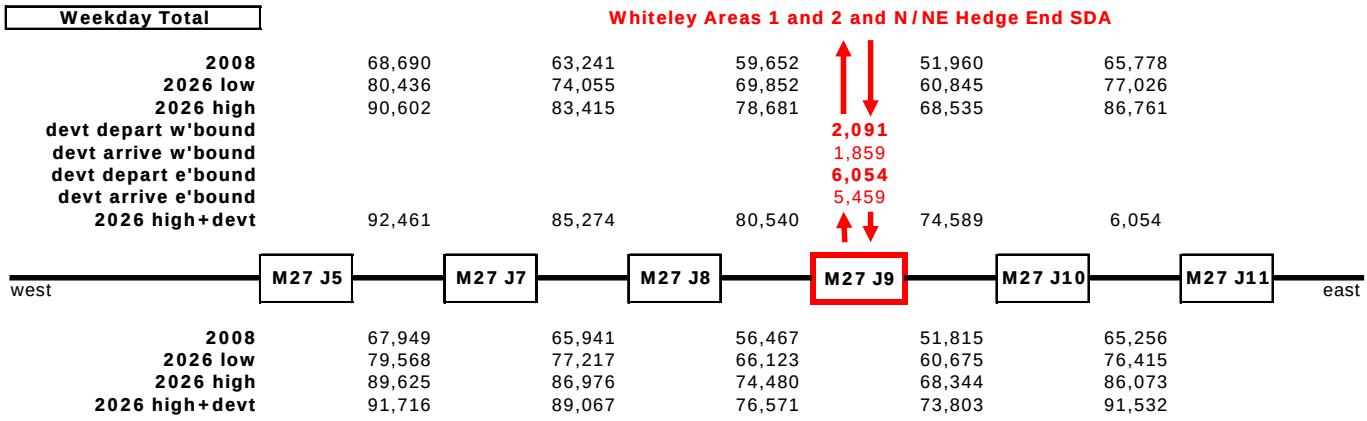


Figure 8.6 Impact of Daily Generated Trips at M27 Junction 7 Whiteley



8.7.12 The figures suggest that considerable impacts could be expected during the AM Peak hour. While this is within the link capacity of the M27 in the vicinity, Junction 9 currently experiences congestion and additional high demands cannot be accommodated. In addition to outgoing movements, incoming movements and car trips across the junction from Whiteley towards Segensworth will add to difficulties. Figure 8.6 illustrates the impacts of traffic on a daily basis.

8.7.13 The future traffic figures assume the completion of Whiteley Way to provide access from the development site to the north. The analysis indicates that problems at Junction 9 will require measures to be introduced to reduce demand for car use for both the development site and to address the high car dependency of the existing residential and employment areas. This requires a thorough consideration of public transport options and investment in suitable services so that the area is linked effectively with Botley and Swanwick stations and has bus links to key destinations with extensive priority measures.

8.7.14 In addition to the demands generated by North Whiteley, Junction 9 and other parts of the M27 will need to accommodate additional traffic from other sites, particularly the SDAs at North/North East Hedge End and North Fareham. These too should consider how substantial numbers of car trips can be transferred to public transport to avoid severe congestion problems on the M27. While the sites in Winchester District are linked to the SDAs outside in terms of combined traffic impacts, there may also be opportunities to introduce mitigation measures and to promote significant public transport use with funding from more than one developer contribution.

8.7.15 It should also be noted that high levels of employment self-containment in these larger communities is unlikely to be achieved. A further consideration is the impact of the South Hampshire Strategic Employment Zone (SHSEZ) at Eastleigh with an expected 6,000 jobs which is likely to affect employment distribution across a wide area and could generate additional demand on the motorways.

8.8 West of Waterlooville

8.8.1 The planned West of Waterlooville MDA includes provision of an allocation of up to 1,500 dwellings; a further 1,200 could be provided on the reserve site to the south based on higher density development. This could be added to the agreed development but would need to be linked more closely with the core bus link in the A3 corridor, especially if this is taken forward as a bus rapid transit facility as planned. The MDA was selected due to its relationship with the A3 corridor and Portsmouth as a higher order employment, retail and leisure centre. The expansion of the Queen Alexandra Hospital in Cosham and other local activities also contribute towards a large employment centre for which access to and from the MDA is required. Table 8.19 provides a SWOT analysis and Table 8.20 shows the base assignment for a total of 2,700 dwellings.

Table 8.19 SWOT Analysis for West of Waterlooville

Strengths	Additional to planned MDA and its associated local facilities. In key A3 corridor with Portsmouth as a higher order centre and with Cosham, Purbrook and Waterlooville as other centres within reach.
Weaknesses	MDA predicated on good public transport links in A3 corridor but upgraded A3 corridor bus/BRT services must serve an extended MDA if there is to be a credible alternative to car use.
Opportunities	Linking various established settlements with the site allows a good range of employment locations to be available to residents of the site.
Threats	Failure to provide acceptable bus services and walk/cycle links to nearby communities.

8.8.2 For a larger West of Waterlooville MDA, additional traffic impacts would occur beyond the District boundary in Havant and Portsmouth which would be expected to raise objections from the relevant local authorities and others.

8.8.3 Of particular concern is the level of traffic heading south towards Cosham and Portsmouth, particularly the impacts at Spur Road Roundabout and Hilsea Roundabout where some peak period delays already occur. This would be in addition to traffic generated by the first phase of the MDA of which around 30% would be heading towards the city[40].

[40] The 29% of the daily total calculated here is consistent with the 33% southbound trips that was predicted to impact on the Spur Road Roundabout (MVA Consultancy (November 2006) *West of Waterlooville MDA impacts on Portsmouth*).

Table 8.20 West of Waterlooville Base Assignment

Base Assignment		AM			PM			DAY		
EXTERNAL+INTERNAL		depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home		221	47	268	80	137	217	1,027	913	1,940
Train										
	north: A32	4	1	5	1	2	4	18	16	34
	east	12	2	14	4	7	11	54	48	102
	south: Cosham	109	23	131	39	67	106	504	448	953
	west	0	0	0	0	0	0	0	0	0
		124	**26**	**150**	**45**	**77**	**122**	**576**	**512**	**1,089**
Bus/minibus										
	north: A32	28	6	34	10	17	27	129	114	243
	east	6	1	7	2	4	6	27	24	51
	south: Cosham	18	4	22	7	11	18	84	75	159
	west	56	12	67	20	35	55	259	230	489
	0	0	0	0	0	0	0	0	0	0
		107	**23**	**130**	**39**	**67**	**105**	**499**	**443**	**942**
Taxi/minicab										
	local	6	1	8	2	4	6	30	26	56
Car driver										
	north: A32	246	52	298	89	153	241	1,143	1,016	2,159
	east	107	23	130	38	66	105	497	442	939
	south: Cosham	391	83	474	141	243	383	1,817	1,616	3,433
	west	573	121	694	206	355	561	2,661	2,366	5,027
	0	0	0	0	0	0	0	0	0	0
		1,316	**278**	**1,595**	**474**	**817**	**1,290**	**6,118**	**5,440**	**11,558**
Car passgr										
	north: A32	24	5	29	9	15	24	111	99	211
	east	9	2	11	3	5	9	41	36	77
	south: Cosham	36	8	44	13	22	35	167	148	315
	west	58	12	71	21	36	57	271	241	513
	0	0	0	0	0	0	0	0	0	0
		127	**27**	**154**	**46**	**79**	**125**	**591**	**525**	**1,116**
Cycle		31	7	38	11	19	31	145	129	273
Walk		265	56	321	95	164	260	1,232	1,096	2,328
Total		**2,198**	**464**	**2,663**	**791**	**1,364**	**2,155**	**10,216**	**9,085**	**19,301**

8.8.4 Further development at West of Waterlooville could be justified on the grounds that comprehensive transport measures would be in place. This would include walk and cycle networks that connect with other development sites, Waterlooville town centre and the A3 corridor. The main access should be provided by buses which requires more than the 'opportunities' suggested. For the development to be sustainable, high quality bus services must feature strongly to avoid the dominance of car travel. These measures would need to be implemented alongside travel plans and other related measures.

8.9 Knowle

8.9.1 The PUSH area covers a large tract of the District and the Issues and Options report alludes to some key transport issues. Knowle could provide some development to help meet PUSH area needs. The possibility of an additional rail station on the Eastleigh to Fareham line has been mooted to serve Knowle. We considered this as part of a previous investigation for the proposed North Fareham SDA and concluded that the railway is at the eastern edge of the SDA and would have a limited catchment as a result. Also, the operational constraints of the route, particularly with changes resulting from the construction of the Eastleigh Chord, could preclude an additional stop at Knowle. However, a combination of the SDA, Whiteley Area 3 and expansion at Knowle may collectively support a new facility. However it should be noted that a rail station alone would not be sufficient and that viable bus links would need to

permeate the site and link it with town centres and employment locations. Table 8.21 shows the merits of this location and Table 8.22 shos the base assignment.

Table 8.21 SWOT Analysis for Knowle

Strengths	Adds to recent development at former hospital site.
Weaknesses	Relatively isolated requiring car trips even for local journeys e.g. retail and leisure in Fareham. Journeys to work require car use and access to Fareham rail station is difficult. Bus services currently poor.
Opportunities	Possible new station on Eastleigh-Fareham line but this would need to be investigated in detail.
Threats	Additional development does not promote sustainable modes and reinforces car dependency.

Table 8.22 Knowle Base Assignment

Base Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	65	14	79	24	41	64	304	271	575
Train									
north: Winchester	21	5	26	8	13	21	99	88	188
east	1	0	1	0	1	1	4	4	8
south: Fareham	11	2	14	4	7	11	52	47	99
west: Eastleigh	3	1	4	1	2	3	15	13	28
	37	**8**	**45**	**13**	**23**	**36**	**171**	**152**	**323**
Bus/minibus									
north: Winchester	19	4	23	7	12	19	88	79	167
east	1	0	1	0	1	1	4	4	8
south: Fareham	9	2	11	3	6	9	44	39	82
west: Eastleigh	2	1	3	1	2	2	11	10	22
0	0	0	0	0	0	0	0	0	0
	32	**7**	**38**	**11**	**20**	**31**	**148**	**131**	**279**
Taxi/minicab									
local	2	0	2	1	1	2	9	8	17
Car driver									
north: Winchester	174	37	211	63	108	170	808	718	1,526
east	47	10	57	17	29	46	217	193	410
south: Fareham	104	22	126	38	65	102	485	431	916
west: E'leigh/H End	65	14	79	23	40	64	303	270	573
0	0	0	0	0	0	0	0	0	0
	390	**82**	**472**	**140**	**242**	**382**	**1,813**	**1,612**	**3,425**
Car passgr									
north: Winchester	18	4	22	7	11	18	85	75	160
east	4	1	5	2	3	4	20	18	39
south: Fareham	9	2	11	3	6	9	42	38	80
west: E'leigh/H End	6	1	7	2	4	6	28	24	52
0	0	0	0	0	0	0	0	0	0
	38	**8**	**46**	**14**	**23**	**37**	**175**	**156**	**331**
Cycle	9	2	11	3	6	9	43	38	81
Walk	79	17	95	28	49	77	365	325	690
Total	**651**	**138**	**789**	**234**	**404**	**639**	**3,027**	**2,692**	**5,719**

8.9.2 While expansion of Knowle is not supported by Fareham Borough Council, there are opportunities associated with the North Fareham SDA to extend bus or bus rapid transit services to Knowle and/or Wickham.

8.9.3 The rail services to Botley are well used at peak times for local journeys as well as serving longer distance demands. The construction of the Eastleigh Chord and the associated diversion of inter-regional trains will add to the journey opportunities available and good links to stations will be required.

8.10 Denmead

8.10.1 Denmead offers local retailing and other functions and is related to larger centres outside the District, notably Waterlooville. Cycling is possible to Waterlooville town centre but this is shared with vehicles and is unappealing compared with car use. For north-south movements, the A3(M)/A3 corridor provides access within easy reach of Denmead. Other roads are rural in nature but provide links to a range of other destinations. Local bus services are limited in number and comparison with car use is unfavourable in terms of journey flexibility and time. Opportunities may arise with the completion of the West of Waterlooville MDA to incorporate Denmead into an improved bus service although the 'Zip' service on the core A3 corridor does not extend to the west.

8.10.2 The proximity of Denmead to Waterlooville and the MDA suggests that walking and cycling could be promoted strongly and that a step change option could be achievable. Table 8.23 shows the SWOT analysis.

Denmead – local retail with associated parking

Table 8.23 SWOT Analysis for Denmead

Strengths	Local facilities in place.
Weaknesses	Limited bus service. No rail service (but bus link from Waterlooville to Petersfield station).
Opportunities	Improved bus links with Waterlooville may be possible based on the A3 corridor services. Walking and cycling links could be provided and promoted to meet local journey needs and to access basic facilities. Potential better integration with West of Waterlooville MDA.
Threats	Car dependency due to lack of sustainable links to Waterlooville and beyond.

8.11 Colden Common / Twyford / Shawford

8.11.1 Colden Common is located within reach of both Eastleigh and Winchester by car. Bus services are available but limited in number. Recent housing and employment development has taken place but the location is relatively remote compared with places with rail access. Walking and cycling are possible within the built-up area but the B3354 is not suitable for novice cyclists. Local facilities are limited; Table 8.24 indicates its merits.

Colden Common – employment premises have poor accessibility except by car

8.11.2 Twyford and Shawford are relatively small communities with limited local facilities, mainly dependent on car travel. Although Shawford has a station on the main line, relatively few services stop.

Table 8.24 SWOT Analysis for Colden Common

Strengths	Proximity to Eastleigh and Winchester.
Weaknesses	Utility cycling not attractive due to traffic. Limited bus service. Limited range of facilities requires travel to other centres. No rail service.
Opportunities	Improved bus service to Winchester/Fareham/Eastleigh possible.
Threats	Car dependency due to lack of sustainable links to Winchester and elsewhere.

8.12 Kings Worthy

8.12.1 Kings Worthy is located to the north of Winchester close to the A34(T) and A33. The road links provide good access to the M3 at Junction 9 for southbound journeys at to Basingstoke for northbound journeys. Although separate from Winchester, there is a strong relationship including a regular bus service to the city centre and rail station (20 minute daytime frequency) and a cycle route alongside the connecting B3047. Although local facilities are limited, enhancing the link with Winchester could facilitate further development. This suggests that Kings Worthy could be suitable within the consolidation of local hub option constrained not by transport links but by the scope of local facilities that could be available. Table 8.25 shows the SWOT analysis.

Table 8.25 SWOT Analysis for Kings Worthy

Strengths	Within reach of Winchester.
	Close to A34(T) and A33 and hence M3 Junction 9.
	Regular bus service to Winchester in place.
	Cycle route to Winchester in place from Taylor's Corner.
Weaknesses	M3 Junction 9 regularly congested.
	Limited local facilities especially employment.
	Limited evening and Sunday bus services.
Opportunities	Development extending existing housing areas linked to bubs services.
Threats	Location close to road network could promote car use.

8.13 Waltham Chase

8.13.1 Waltham Chase is situated between Bishops Waltham and Wickham and could be considered in the context of improved bus services to these other settlements and the proposed SDA at North Fareham. Few local facilities are available and out-commuting takes place and could be expected to increase as housing development takes place. Waltham Chase is best considered as part of the **consolidation of local hub** option in that some development could be accommodated but there is reliance on the bus links passing through to larger settlements to provide an alternative to car use (see Table 8.26).

Table 8.26 SWOT Analysis for Waltham Chase

Strengths	Good location in relation to larger urban areas.
Weaknesses	Limited local facilities.
	Limited bus service.
Opportunities	Could be considered alongside nearby centres such as Swanmore, Bishops Waltham and Wickham.
Threats	Larger areas of activity to the south could further isolate the town and undermine local facilities.

8.14 Swanmore

8.14.1 Swanmore is close to Bishops Waltham and Waltham Chase. Development at this location needs to be considered alongside sites in the area, particularly as Swanmore has sparse bus provision and limited facilities (apart from Swanmore School which attracts pupils from a wide area). This part of the District has high car ownership and a dispersed travel patterns, especially for journeys to work. Given the limited facilities in Swanmore, the current planned

boundaries option is the most appropriate as there is very limited scope for sustainable transport improvements, particularly if considered in isolation from other settlements. Table 8.27 indicates the main features of the area.

Table 8.27 SWOT Analysis for Swanmore

Strengths	Good location in relation to larger urban areas.
Weaknesses	Limited local facilities. Limited bus service.
Opportunities	Could be considered alongside nearby centres such as Bishops Waltham, Wickham and Waltham Chase.
Threats	Larger areas of activity to the south could further isolate the town and undermine local facilities.

8.14.2 Table 8.23 indicates the scenario for a series of related sites at Knowle (800 dwellings), Bishop's Waltham (1,100) and Wickham (700); an additional 400 dwellings have been included to represent further sites at Waltham Chase and Swanmore. This represents a potential multi-centred development for which the main road links would be the A334 towards Eastleigh and Winchester, the A32 to the north, the B2177 towards Cosham and the M27 at Junction 11 using the A43 to the south diverted around the planned North Fareham SDA.

Table 8.28 Combined Knowle, Bishop's Waltham and Wickham Base Assignment

Base Assignment		AM			PM			DAY	
EXTERNAL + INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	241	51	292	87	150	236	1,121	997	2,118
Train									
north: Winchester	66	14	80	24	41	65	308	274	581
east	7	1	8	2	4	7	31	28	59
south: Fareham	41	9	49	15	25	40	188	168	356
west: Eastleigh	22	5	26	8	14	21	102	90	192
	135	**29**	**164**	**49**	**84**	**133**	**629**	**559**	**1,188**
Bus / minibus									
north: Winchester	70	15	85	25	43	69	325	289	615
east	7	1	8	2	4	6	30	27	57
south: Fareham	26	5	31	9	16	25	120	107	227
west: Eastleigh	15	3	18	5	9	14	68	61	129
0	0	0	0	0	0	0	0	0	0
	117	**25**	**142**	**42**	**73**	**115**	**544**	**484**	**1,028**
Taxi / minicab									
local	7	1	8	2	4	7	32	29	61
Car driver									
north: Winchester	590	125	715	213	366	579	2,744	2,440	5,184
east	185	39	224	66	115	181	858	763	1,621
south: Fareham	336	71	407	121	209	330	1,562	1,389	2,952
west: E'leigh/H End	325	69	394	117	202	319	1,512	1,345	2,857
0	0	0	0	0	0	0	0	0	0
	1,437	**304**	**1,740**	**517**	**891**	**1,408**	**6,677**	**5,937**	**12,614**
Car passgr									
north: Winchester	62	13	75	22	38	60	286	254	540
east	17	4	21	6	11	17	80	71	151
south: Fareham	30	6	37	11	19	30	141	125	266
west: E'leigh/H End	30	6	36	11	18	29	138	123	261
0	0	0	0	0	0	0	0	0	0
	139	**29**	**168**	**50**	**86**	**136**	**645**	**573**	**1,218**
Cycle	34	7	41	12	21	33	158	140	298
Walk	289	61	350	104	179	284	1,345	1,196	2,540
Total	**2,399**	**507**	**2,906**	**864**	**1,488**	**2,352**	**11,150**	**9,915**	**21,064**

8.15 Other Locations

8.15.1 The corridor between Winchester and Eastleigh/Chandler's Ford includes the settlements of **Compton, Shawford and Otterbourne**. There is public transport available including a regular bus between Southampton, Chandler's Ford and Winchester (Bluestar 1: 20 minute daytime frequency) and rail services at Shawford, although services stop there on a broadly hourly basis only; it is very unlikely that additional capacity could be found for more trains to stop at Shawford and the platforms are of limited length and cannot accommodate some of the trains. Nearby Twyford has local bus services between Winchester, Colden Common and beyond.

8.15.2 However, there are few facilities available within the settlements and they look to larger settlements, particularly Winchester and Eastleigh, for most purposes including retail, education and leisure. Physical constraints in the Itchen Valley preclude large scale development and it is unlikely that the scale of any development would support either an upgrading of public transport services or additional facilities given the proximity to established centres. Some smaller scale development could be located in the corridor to take advantage of the existing bus services.

8.15.3 **Southwick / HMS Dryad** is located to the north of Portchester and is largely orientated towards Cosham/Portsmouth and Fareham. It is relatively remote (particularly the MoD establishment) and there are no public transport services that would support development.

There are no settlements close by that could be considered part of a cluster and hence locating development at this location could not be justified on sustainable transport grounds unless on a very large scale.

8.16 Rural Settlements

8.16.1 The contribution of the rural settlements to the overall development targets is likely to be limited. In transport terms, most journeys will be by car due to the very limited options available and the dispersed nature of destinations. Although some centres of employment exist e.g. IBM Hursley and Sparsholt College, only some of the jobs are taken by local people. It is unlikely that a bus service that competes with the flexibility of car journeys could be established.

8.17 Impact on Accidents

8.17.1 In all the locations considered, the casualty record shows that incidents are clustered on trunk roads junctions and links and this is likely to be made worse as traffic levels increase and exacerbated to some extent by the generated traffic, particularly accidents associated with queuing at major junctions.

9 Potential Mitigation Measures

9.1 Scope for Mitigation Measures

9.1.1 The development sites will all generate traffic; the extent to which demand for car travel can be reduced and how this traffic is managed are the key issues. However, the development sites reflect demographic changes rather than meeting the needs of people moving into the District. As a result, some journeys may be redistributed across the wider area rather than be additional journeys, although there is an underlying trend for increased mobility.

9.1.2 Restraining car movements is acceptable when high quality alternatives to car use are in place. This requires appropriate site design and the integration of site planning with wider policies such as car parking and access to rail stations. Growth can be accommodated in the District but several key requirements emerge:

- Further traffic affecting the M27 and M3 specifically will cause problems;
- Travel patterns for development sites become established at the outset and are difficult to change subsequently;
- The residents and businesses that relocate to particular sites are unknown at this stage but redistribution may reduce transport pressures elsewhere;
- Opportunities for walking and cycling must be promoted very strongly – this is both an infrastructure and cultural issue and linked with travel planning; and
- Providing high quality public transport is essential. This implies enhancements to existing timetables, priority measures for buses on- and off-site, better infrastructure at stops, comprehensive information availability and new services. Hoping that people will use services is not good enough and bus should be the first choice for many journeys to contain car movements. Pump-prime funding may be required to secure services from the start but in the longer term, services should be commercially viable.

9.1.3 We have considered possible mitigation measures for each of the development sites in terms of those measures that would be most appropriate and could be deliverable.

9.2 A New Agenda

9.2.1 Recent thinking from DfT could have a profound effect on developments such as the SDA. In particular, *Towards a sustainable transport strategy*[41] (TaSTS) has been produced in response to the Eddington[42] and Stern[43] reports which highlighted the significance of climate change and the economic impacts of environmental changes, notably carbon emissions. In doing so, it attempts to provide direction for longer term transport strategy:

> 'Climate change, as a result of rising greenhouse gas emissions, threatens the stability of the world's climate, economy and communities … the cost of early action is significant, but the costs of inaction could be far worse.' (paragraph 2.20)

[41] Department for Transport (October 2007) *Towards a sustainable transport strategy.*

[42] Department for Transport (December 2006) *The Eddington transport study.*

[43] HM Treasury (October 2006) Stern review on the economics of climate change.

9.2.2 While DfT has yet to announce its view on the consultation responses received, it is clear that changes to the appraisal process, Local Transport Plans and other guidance will be made. In time, this is likely to mean that schemes that support car use will be viewed less favourably and that sustainable transport schemes and initiatives will be given prominence. This infers that walking, cycling, heavy and light rail and bus-based schemes will be given more support than at present.

9.2.3 Recent research[44] has investigated the extent to which transport patterns and behaviour need to change to have a meaningful and lasting effect on the changing climate. This considers both historic trends in land use planning and transport use and presents a package of policies that would be needed to achieve the likely carbon reduction targets. Measures could include fiscal, planning and regulatory change with a revised approach to funding. Should this approach be adopted, then there would be profound changes to how public transport is procured and funded, strong incentives to walk and cycle, constraining parking provision, limits on road schemes and aviation, changes to vehicle taxation and other initiatives. It is suggested that not only does growth in traffic need to be addressed but that a reduction in actual traffic levels must be achieved.

9.2.4 It is not yet clear if Government would adopt this radical stance but if it were to be adopted, then planning for the SDA could be made considerably easier in a number of respects:

- The funding would be different and favour more bus/BRT schemes;
- Strong walking and cycling provision would be mandatory;
- New road links would be unlikely to be progressed; and
- A range of measures would be needed to reduce traffic levels.

9.3 Winchester Town: Planned Boundaries Option

9.3.1 The sites presented offer considerable opportunities for mitigation measures due to the proximity of the sites in relation to the city centre and rail station. There are opportunities for people to walk, cycle and use the local bus network for many journeys, including journeys to work when there would be the greatest impact on traffic congestion.

Winchester rail station – an important interchange location

[44] Metropolitan Transport Research Unit (September 2008) *National project on transport policies to address climate change: Phase two working draft report.*

Barton Farm

9.3.2 Table 9.1 shows the effects of mitigation measures for Barton Farm for comparison with the base assignment data in the previous chapter. This represents:

- 10% local car driver and car passenger trips transferred to cycle;
- 25% local car driver and car passenger trips transferred to walk;
- 2.5% local car driver and car passenger trips transferred to bus; and
- 10% external car driver and car passenger trips transferred to internal work at home, walk and cycle trips to reflect a higher level of self-containment.

9.3.3 Creating employment opportunities in the city centre and selected other locations nearby allows the considerable potential for walking to be realized. To support this, clear walking routes need to be identified and barriers to walking such as crossing of busy roads will need to be overcome in locations away from the site. Similarly, cycling can be increased with appropriate infrastructure. The proportion of trips transferred to bus is relatively small but would be increased with a new service into the site – with appropriate priority – in addition to established services.

Table 9.1 Barton Farm Revised Assignment

Revised Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	197	42	239	71	122	193	916	814	1,730
Train									
north: Basingstoke	17	4	21	6	11	17	80	71	151
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	89	19	108	32	55	87	414	368	782
west	0	0	0	0	0	0	0	0	0
	106	**22**	**129**	**38**	**66**	**104**	**494**	**439**	**933**
Bus/minibus									
city: local network	78	17	95	28	49	77	364	324	688
north: 86 Whitchurch/B'stoke	13	3	15	5	8	12	59	52	111
east: X64 Alresford/Alton	6	1	7	2	3	5	26	23	49
south: BS1 Eastleigh	20	4	24	7	13	20	94	84	178
west: X66 Romsey	4	1	5	2	3	4	20	18	38
	121	**26**	**147**	**44**	**75**	**119**	**563**	**500**	**1,063**
Taxi/minicab									
local	6	1	7	2	3	5	26	23	49
Car driver									
city: City Road	132	28	160	48	82	130	615	546	1,161
north: Andover Rd/A34	146	31	177	52	90	143	677	602	1,280
east: City Road/M3J9	123	26	149	44	76	120	570	507	1,078
south: Romsey Rd/M3	219	46	265	79	136	214	1,016	903	1,919
west: Stockbridge Rd	72	15	87	26	45	71	334	297	632
	691	**146**	**837**	**249**	**429**	**678**	**3,212**	**2,857**	**6,069**
Car passgr									
city: City Road	15	3	18	5	9	14	68	61	129
north: Andover Rd/A34	16	3	20	6	10	16	75	67	142
east: City Road/M3J9	14	3	16	5	8	13	63	56	119
south: Romsey Rd/M3	24	5	29	9	15	24	113	100	213
west: Stockbridge Rd	8	2	10	3	5	8	37	33	70
	77	**16**	**93**	**28**	**48**	**75**	**356**	**316**	**672**
Cycle	91	19	110	33	57	89	424	377	800
Walk	340	72	412	122	211	333	1,579	1,404	2,984
Total	**1,629**	**344**	**1,973**	**586**	**1,010**	**1,597**	**7,569**	**6,731**	**14,300**

9.3.4 The extent of the site (determined in part by the density which is itself influenced by the availability of transport links and parking provision) will affect the scope of the access arrangements. For a smaller urban extension, it can be assumed that there will be no east-west access across the railway and that all routes will focus on the B3420 Andover Road. However, a larger site could require a new underbridge (at considerable cost) to create connections to the B3047 Worthy Road as there is currently only one bridge with limited clearance, although initial observation suggests that this could be passable for single deck buses.

Bridge carrying the main line railway at Barton Farm

9.3.5 This raises a number of issues. Both Andover Road and Worthy Road enter the city via the City Road junction so directing car traffic to a secondary route has little effect for southbound traffic but a connection through Kings Worthy to the A33 provides a direct route north towards Basingstoke, encouraging car use in this direction. A link could be of benefit to local bus services and for cyclists. (The existing Well House Lane bridge is approximately 4.3m wide, 22.9m long with a height clearance of 3.7m (12'0") while the bridge allowing the track through Barton Farm beneath the railway is around 4.3m wide, 9.2 long with a height clearance of approximately 5m. These would be suitable for bus use as demonstrated by the use of the Ranelagh Road tunnel used by service 1 to Stanmore.)

9.3.6 Cycle routes from the site could extend the existing access to the city centre via Abbots Barton and Hyde, much of which avoids the busier roads.

9.3.7 More detailed consideration will need to be given to accessing Winchester rail station from the site and ensuring that this is by walk, cycle and bus. Barton Farm would generate additional bus trips on radial services from the city. For local journeys to employment, retail and other attractions in the centre, a new service is likely to be both necessary and viable.

Pitt Manor

9.3.8 At Pitt Manor, the site is well related to Winchester's prime bus service. An inbound bus lane is in place which could be extended through the site so that it provides a focus for local travel. Buses from Romsey could also access the site. Frequency for service 5 is currently every 10 minutes Friday to Saturday daytime and every 30 minutes on Sundays; evening services could be improved with higher levels of demand.

9.3.9 Table 9.2 shows the impact of the following:

- 1% local car driver and car passenger trips transferred to cycle;

- 3% local car driver and car passenger trips transferred to walk; and
- 15% local car driver and car passenger trips transferred to bus.

9.3.10 This reflects the distance to the rail station city centre and the availability of a regular bus service. However, the employment activity in the Romsey Road corridor (Royal Hampshire County Hospital, University of Winchester, Winchester Community Prison, Hampshire County Council) would mean that people living at the site could walk or cycle to work in greate numbers than those illustrated.

Table 9.2 Pitt Manor Revised Assignment

Revised Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	16	3	20	6	10	16	76	68	144
Train									
north: Basingstoke	2	0	2	1	1	2	8	7	15
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	9	2	11	3	6	9	41	37	78
west	0	0	0	0	0	0	0	0	0
	11	**2**	**13**	**4**	**7**	**10**	**49**	**44**	**93**
Bus/minibus									
city: local network	10	2	12	4	6	10	47	42	89
north: 86 from city	1	0	2	0	1	1	6	5	11
east: 64 from city	1	0	1	0	0	1	3	2	5
south: E3 Eastleigh	2	0	2	1	1	2	9	8	18
west: X66 Romsey	0	0	1	0	0	0	2	2	4
	14	**3**	**17**	**5**	**9**	**14**	**67**	**60**	**127**
Taxi/minicab									
local	1	0	1	0	0	1	3	2	5
Car driver									
city: Romsey Road	23	5	27	8	14	22	105	93	198
north: Andover Rd/A34	16	3	20	6	10	16	75	67	142
east: Badger Fm Rd	14	3	17	5	8	13	63	56	120
south: Badger Fm Rd/M3	24	5	29	9	15	24	113	100	213
west: Stockbridge Rd	8	2	10	3	5	8	37	33	70
	85	**18**	**103**	**30**	**53**	**83**	**393**	**350**	**743**
Car passgr									
city: Romsey Road	2	1	3	1	2	2	12	10	22
north: Andover Rd/A34	2	0	2	1	1	2	8	7	16
east: Badger Fm Rd	2	0	2	1	1	1	7	6	13
south: Badger Fm Rd/M3	3	1	3	1	2	3	13	11	24
west: Stockbridge Rd	1	0	1	0	1	1	4	4	8
	9	**2**	**11**	**3**	**6**	**9**	**44**	**39**	**82**
Cycle	3	1	4	1	2	3	14	12	26
Walk	24	5	29	9	15	23	111	99	209
Total	**163**	**34**	**197**	**59**	**101**	**160**	**757**	**673**	**1,430**

Worthy Road/Francis Gardens

9.3.11 Although relatively small, a shift could be engendered to sustainable modes:

- 3% local car driver and car passenger trips transferred to cycle;
- 10% local car driver and car passenger trips transferred to walk; and
- 2% local car driver and car passenger trips transferred to bus.

9.3.12 Table 9.3 shows the potential changes. Cycling is supported by the availability of the Kings Worthy cycle route and the easy access to the city centre via Abbots Barton. Walking trips to the rail station and central activities are relatively easy. Some residents could use the existing bus service ('The Spring').

Table 9.3 Worthy Road/Francis Gardens Revised Assignment

Revised Assignment		AM			PM			DAY	
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	7	1	8	2	4	6	30	27	57
Train									
north: Basingstoke	1	0	1	0	0	1	3	3	6
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	4	1	4	1	2	3	17	15	31
west	0	0	0	0	0	0	0	0	0
	4	**1**	**5**	**2**	**3**	**4**	**20**	**18**	**37**
Bus/minibus									
city: local network	2	1	3	1	2	2	11	10	22
north: 86 Whitchurch/B'stoke	1	0	1	0	0	0	2	2	4
east: X64 Alresford/Alton	0	0	0	0	0	0	1	1	2
south: BS1 Eastleigh	1	0	1	0	1	1	4	3	7
west: X66 Romsey	0	0	0	0	0	0	1	1	2
	4	**1**	**5**	**1**	**3**	**4**	**19**	**17**	**37**
Taxi/minicab									
local	0	0	0	0	0	0	1	1	2
Car driver									
city: City Road	9	2	11	3	6	9	44	39	83
north: Andover Rd/A34	6	1	8	2	4	6	30	27	57
east: City Road/M3J9	5	1	7	2	3	5	25	23	48
south: Romsey Rd/M3	10	2	12	3	6	10	45	40	85
west: Stockbridge Rd	3	1	4	1	2	3	15	13	28
	34	**7**	**42**	**12**	**21**	**34**	**159**	**142**	**301**
Car passgr									
city: City Road	1	0	1	0	1	1	5	4	9
north: Andover Rd/A34	1	0	1	0	0	1	3	3	6
east: City Road/M3J9	1	0	1	0	0	1	3	2	5
south: Romsey Rd/M3	1	0	1	0	1	1	5	4	9
west: Stockbridge Rd	0	0	0	0	0	0	2	1	3
	4	**1**	**5**	**1**	**2**	**4**	**18**	**16**	**33**
Cycle	1	0	2	1	1	1	7	6	13
Walk	10	2	13	4	6	10	48	43	91
Total	**65**	**14**	**79**	**23**	**40**	**64**	**303**	**269**	**572**

9.4 Winchester Town: Step Change Option

9.4.1 Larger sites have considerable scope to support new bus services. For the step change options we have assumed the following:

- 5% local car driver and car passenger trips transferred to cycle;
- 10% local car driver and car passenger trips transferred to walk;
- 15% local car driver and car passenger trips transferred to bus; and
- 10% external car driver and car passenger trips transferred to internal work at home, walk and cycle trips to reflect a higher level of self-containment.

9.4.2 Tables 9.4 to 9.7 show the assignments for Areas 1, 2, 3 and 4 respectively. All the sites are located so that walking trips are possible and they are well within acceptable cycling distance of the rail station, facilities in the central area and employment. Well planned sites which

give priority to buses would generate relatively high levels of use which offers considerable potential to reduce the number of car trips.

Table 9.4 Winchester Town Step Change: Area 1 Revised Assignment

Revised Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	399	162	562	208	249	457	2,125	1,936	4,061
Train									
north: Basingstoke	37	48	85	47	24	70	312	302	614
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	193	249	442	242	123	364	1,613	1,559	3,173
west	0	0	0	0	0	0	0	0	0
	230	**297**	**527**	**288**	**146**	**435**	**1,925**	**1,861**	**3,787**
Bus/minibus									
city: local network	287	371	657	359	182	542	2,399	2,319	4,718
north: 86 Whitchurch/B'stoke	27	35	63	34	17	52	229	222	451
east: X64 Alresford/Alton	12	15	27	15	8	23	100	97	197
south: BS1 Eastleigh	44	57	100	55	28	83	366	354	721
west: X66 Romsey	9	12	22	12	6	18	79	76	155
	379	**490**	**870**	**476**	**241**	**717**	**3,174**	**3,068**	**6,242**
Taxi/minicab									
local	12	16	28	15	8	23	101	98	199
Car driver									
city: City Road	301	390	691	378	192	569	2,522	2,438	4,959
north: Andover Rd/A34	315	408	724	396	201	596	2,641	2,553	5,194
east: City Road/M3J9	266	344	609	333	169	502	2,223	2,149	4,373
south: Romsey Rd/M3	473	612	1,085	593	301	894	3,960	3,827	7,787
west: Stockbridge Rd	156	201	357	195	99	294	1,303	1,260	2,563
	1,511	**1,954**	**3,465**	**1,895**	**962**	**2,857**	**12,650**	**12,227**	**24,877**
Car passgr									
city: City Road	33	43	77	42	21	63	279	270	549
north: Andover Rd/A34	35	45	80	44	22	66	293	283	575
east: City Road/M3J9	29	38	67	37	19	56	246	238	484
south: Romsey Rd/M3	52	68	120	66	33	99	439	424	863
west: Stockbridge Rd	17	22	40	22	11	33	144	140	284
	167	**217**	**384**	**210**	**107**	**316**	**1,401**	**1,355**	**2,756**
Cycle	164	212	376	205	104	310	1,371	1,325	2,696
Walk	635	821	1,456	796	404	1,201	5,317	5,139	10,456
Total	**3,498**	**4,170**	**7,668**	**4,094**	**2,221**	**6,315**	**28,065**	**27,009**	**55,074**

Table 9.5 Winchester Town Step Change Area 2: Revised Assignment

Revised Assignment	AM			PM			DAY		
EXTERNAL + INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	399	162	562	208	249	457	2,125	1,936	4,061
Train									
north	37	48	85	47	24	70	312	302	614
east	0	0	0	0	0	0	0	0	0
south	193	249	442	242	123	364	1,613	1,559	3,173
west	0	0	0	0	0	0	0	0	0
	230	**297**	**527**	**288**	**146**	**435**	**1,925**	**1,861**	**3,787**
Bus / minibus									
city: local network	156	202	359	196	100	296	1,310	1,266	2,577
north: And'r Rd, city	7	9	15	8	4	13	56	54	110
east: Romsey Rd, city	101	131	231	127	64	191	845	816	1,661
south: E'leigh/S'ton/P'mth	37	48	85	46	24	70	310	300	610
west' S'bridge Rd	9	12	22	12	6	18	79	76	155
	311	**402**	**712**	**390**	**198**	**587**	**2,600**	**2,513**	**5,113**
Taxi / minicab									
local	12	16	28	15	8	23	101	98	199
Car driver									
city: local network	355	460	815	446	226	672	2,976	2,877	5,853
north: And'r Rd, city	166	215	382	209	106	315	1,394	1,347	2,741
east: Romsey Rd, city	423	548	971	531	270	801	3,546	3,427	6,972
south: E'leigh/S'ton/P'mth	473	612	1,085	593	301	894	3,960	3,827	7,787
west' S'bridge Rd	156	201	357	195	99	294	1,303	1,260	2,563
	1,574	**2,036**	**3,610**	**1,974**	**1,002**	**2,976**	**13,179**	**12,738**	**25,917**
Car passgr									
city: local network	39	51	90	49	25	74	330	319	648
north: And'r Rd, city	18	24	42	23	12	35	154	149	304
east: Romsey Rd, city	47	61	108	59	30	89	393	380	772
south: E'leigh/S'ton/P'mth	52	68	120	66	33	99	439	424	863
west' S'bridge Rd	17	22	40	22	11	33	144	140	284
	174	**226**	**400**	**219**	**111**	**330**	**1,460**	**1,411**	**2,871**
Cycle	163	211	374	205	104	309	1,366	1,321	2,687
Walk	634	820	1,454	795	403	1,199	5,308	5,130	10,438
Total	**3,498**	**4,170**	**7,668**	**4,094**	**2,221**	**6,315**	**28,065**	**27,009**	**55,074**

Table 9.6 Winchester Town Step Change: Area 3 Revised Assignment

Revised Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	399	162	562	208	249	457	2,125	1,936	4,061
Train									
north: Basingstoke	37	48	85	47	24	70	312	302	614
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	193	249	442	242	123	364	1,613	1,559	3,173
west	0	0	0	0	0	0	0	0	0
	230	**297**	**527**	**288**	**146**	**435**	**1,925**	**1,861**	**3,787**
Bus/minibus									
city: local network	220	284	504	275	140	415	1,839	1,777	3,616
north: 86 from city	27	35	63	34	17	52	229	222	451
east: 64 from city	12	15	27	15	8	23	100	97	197
south: E3 Eastleigh	44	57	100	55	28	83	366	354	721
west: X66 Romsey	9	12	22	12	6	18	79	76	155
	312	**404**	**716**	**392**	**199**	**590**	**2,614**	**2,527**	**5,141**
Taxi/minicab									
local	12	16	28	15	8	23	101	98	199
Car driver									
city: Romsey Road	361	468	829	453	230	683	3,026	2,925	5,951
north: Andover Rd/A34	315	408	724	396	201	596	2,641	2,553	5,194
east: Badger Fm Rd	266	344	609	333	169	502	2,223	2,149	4,373
south: Badger Fm Rd/M3	473	612	1,085	593	301	894	3,960	3,827	7,787
west: Stockbridge Rd	156	201	357	195	99	294	1,303	1,260	2,563
	1,571	**2,032**	**3,603**	**1,970**	**1,000**	**2,970**	**13,154**	**12,714**	**25,868**
Car passgr									
city: Romsey Road	40	52	92	50	25	76	335	324	659
north: Andover Rd/A34	35	45	80	44	22	66	293	283	575
east: Badger Fm Rd	29	38	67	37	19	56	246	238	484
south: Badger Fm Rd/M3	52	68	120	66	33	99	439	424	863
west: Stockbridge Rd	17	22	40	22	11	33	144	140	284
	174	**225**	**399**	**218**	**111**	**329**	**1,457**	**1,409**	**2,866**
Cycle	164	212	376	205	104	310	1,371	1,325	2,696
Walk	635	821	1,456	796	404	1,201	5,317	5,139	10,456
Total	**3,498**	**4,170**	**7,668**	**4,094**	**2,221**	**6,315**	**28,065**	**27,009**	**55,074**

Table 9.7 Winchester Town Step Change: Area 4 Revised Assignment

Revised Assignment	AM			PM			DAY		
EXTERNAL + INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	399	162	562	208	249	457	2,125	1,936	4,061
Train									
north: B'stoke, M3	37	48	85	47	24	70	312	302	614
east	0	0	0	0	0	0	0	0	0
south: E'leigh/S'ton/P'mth	193	249	442	242	123	364	1,613	1,559	3,173
west	0	0	0	0	0	0	0	0	0
	230	**297**	**527**	**288**	**146**	**435**	**1,925**	**1,861**	**3,787**
Bus / minibus									
city: local network	220	284	504	275	140	415	1,839	1,777	3,616
north: 86 from city	27	35	63	34	17	52	229	222	451
east: 64 from city	12	15	27	15	8	23	100	97	197
south: E3 Eastleigh	44	57	100	55	28	83	366	354	721
west: X66 Romsey	9	12	22	12	6	18	79	76	155
	312	**404**	**716**	**392**	**199**	**590**	**2,614**	**2,527**	**5,141**
Taxi / minicab									
local	12	16	28	15	8	23	101	98	199
Car driver									
city: Romsey Road	361	468	829	453	230	683	3,026	2,925	5,951
north: Andover Rd/A34	152	197	349	191	97	288	1,274	1,231	2,506
east: Badger Fm Rd	429	555	984	538	273	811	3,591	3,471	7,061
south: Badger Fm Rd/M3	473	612	1,085	593	301	894	3,960	3,827	7,787
west: Stockbridge Rd	156	201	357	195	99	294	1,303	1,260	2,563
	1,571	**2,032**	**3,603**	**1,970**	**1,000**	**2,970**	**13,154**	**12,714**	**25,868**
Car passgr									
city: Romsey Road	40	52	92	50	25	76	335	324	659
north: Andover Rd/A34	17	22	39	21	11	32	141	136	278
east: Badger Fm Rd	48	61	109	60	30	90	398	384	782
south: Badger Fm Rd/M3	52	68	120	66	33	99	439	424	863
west: Stockbridge Rd	17	22	40	22	11	33	144	140	284
	174	**225**	**399**	**218**	**111**	**329**	**1,457**	**1,409**	**2,866**
Cycle	164	212	376	205	104	310	1,371	1,325	2,696
Walk	635	821	1,456	796	404	1,201	5,317	5,139	10,456
Total	**3,498**	**4,170**	**7,668**	**4,094**	**2,221**	**6,315**	**28,065**	**27,009**	**55,074**

9.5 New Alresford

9.5.1 The Alresford area is relatively isolated and as such has far fewer opportunities to promote sustainable travel than other locations. To reflect this, we have assumed that:

- 1% local car driver and car passenger trips transferred to cycle;
- 2% local car driver and car passenger trips transferred to walk; and
- 3% local car driver and car passenger trips transferred to bus in the Alton and Winchester corridor.

9.5.2 The effect of this is shown in Table 9.8. It could be expected that most trips will be car-based, particularly those using the A31 towards Winchester and Alton and for journeys to other destinations on minor roads where buses are sparse.

Table 9.8 New Alresford Revised Assignment

Revised Assignment EXTERNAL + INTERNAL		AM depart	AM arrive	AM total	PM depart	PM arrive	PM total	DAY depart	DAY arrive	DAY total
Work at home		82	17	99	29	51	80	380	338	719
Train										
	north	1	0	1	0	1	1	4	4	8
	east: Alton	3	1	4	1	2	3	14	12	26
	south	1	0	1	0	1	1	4	4	8
	west: Winchester	41	9	50	15	26	40	191	170	361
		46	**10**	**56**	**17**	**28**	**45**	**213**	**190**	**403**
Bus / minibus										
	north	7	2	9	3	5	7	34	30	64
	east: Alton	6	1	8	2	4	6	29	26	55
	south	13	3	16	5	8	13	61	54	115
	west: Winchester	21	4	26	8	13	21	98	87	186
	0	0	0	0	0	0	0	0	0	0
		48	**10**	**58**	**17**	**30**	**47**	**222**	**197**	**419**
Taxi / minicab										
	local	2	0	3	1	1	2	11	10	21
Car driver										
	north	82	17	100	30	51	81	382	340	722
	east: Alton	51	11	62	18	32	50	237	211	448
	south	161	34	195	58	100	158	748	665	1,413
	west: Winchester	183	39	222	66	114	180	853	758	1,611
	0	0	0	0	0	0	0	0	0	0
		478	**101**	**579**	**172**	**296**	**468**	**2,220**	**1,974**	**4,195**
Car passgr										
	north	8	2	10	3	5	8	38	34	71
	east: Alton	5	1	6	2	3	5	23	20	43
	south	16	3	19	6	10	15	73	65	138
	west: Winchester	17	4	21	6	11	17	81	72	153
	0	0	0	0	0	0	0	0	0	0
		46	**10**	**56**	**17**	**29**	**45**	**214**	**191**	**405**
Cycle		12	3	15	4	8	12	58	51	109
Walk		100	21	121	36	62	98	465	413	878
Total		**814**	**172**	**986**	**293**	**505**	**798**	**3,784**	**3,365**	**7,149**

9.6 Bishops Waltham

9.6.1 Bishops Waltham is relatively close to larger centres and has regular bus services. We have assumed the following:

- 1% local car driver and car passenger trips transferred to cycle;
- 1% local car driver and car passenger trips transferred to walk; and
- 5% local car driver and car passenger trips transferred to bus in the Fareham corridor.

9.6.2 Table 9.9 shows the revised assignment. There is a limited transfer to walk and cycle due to the lack of local facilities but there is some scope for transfer to an enhanced bus service towards Fareham and the increased patronage indicated would support these enhancements.

Table 9.9 Bishops Waltham Revised Assignment

Revised Assignment		AM			PM			DAY	
EXTERNAL + INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	90	19	109	32	56	88	418	372	790
Train									
north: Winchester	23	5	27	8	14	22	105	93	199
east	3	1	4	1	2	3	14	13	27
south: Fareham	13	3	16	5	8	13	62	55	117
west: Eastleigh	11	2	14	4	7	11	53	47	100
	51	**11**	**61**	**18**	**31**	**50**	**235**	**209**	**444**
Bus / minibus									
north: Winchester	26	6	32	9	16	26	121	108	230
east	3	1	4	1	2	3	14	12	26
south: Fareham	13	3	15	5	8	12	59	52	111
west: Eastleigh	7	2	9	3	5	7	34	30	64
0	0	0	0	0	0	0	0	0	0
	49	**10**	**59**	**18**	**30**	**48**	**228**	**202**	**430**
Taxi / minicab									
local	3	1	3	1	2	3	12	11	23
Car driver									
north: Winchester	208	44	252	75	129	204	966	859	1,825
east	71	15	86	26	44	70	330	294	624
south: Fareham	92	19	111	33	57	90	425	378	803
west: E'leigh/H End	157	33	190	56	97	154	729	648	1,377
0	0	0	0	0	0	0	0	0	0
	527	**111**	**639**	**190**	**327**	**517**	**2,450**	**2,179**	**4,629**
Car passgr									
north: Winchester	22	5	26	8	13	21	100	89	190
east	7	1	8	2	4	6	31	27	58
south: Fareham	8	2	10	3	5	8	38	34	72
west: E'leigh/H End	14	3	17	5	9	14	67	60	127
0	0	0	0	0	0	0	0	0	0
	51	**11**	**62**	**18**	**32**	**50**	**237**	**210**	**447**
Cycle	15	3	18	5	9	15	70	62	132
Walk	110	23	134	40	68	108	513	456	969
Total	**896**	**189**	**1,085**	**322**	**556**	**878**	**4,162**	**3,701**	**7,863**

9.7 Wickham

9.7.1 As with Bishops Waltham, there is limited scope for local journeys within the village due to the relative lack of facilities, particularly employment which necessitates travel to larger centres. We have assumed the following:

- 1% local car driver and car passenger trips transferred to cycle;
- 1% local car driver and car passenger trips transferred to walk; and
- 5% local car driver and car passenger trips transferred to bus in the Fareham corridor.

9.7.2 Table 9.10 shows the impacts which support the improvement of bus services in the Fareham corridor.

Table 9.10 Wickham Revised Assignment

Revised Assignment		AM			PM			DAY	
EXTERNAL + INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	57	12	69	21	36	56	266	237	503
Train									
north: Winchester	14	3	17	5	9	14	67	59	126
east	2	0	2	1	1	2	9	8	17
south: Fareham	11	2	13	4	7	11	52	46	98
west: Eastleigh	5	1	6	2	3	5	22	19	41
	32	**7**	**39**	**12**	**20**	**32**	**149**	**133**	**282**
Bus / minibus									
north: Winchester	17	4	20	6	10	16	77	69	146
east	2	0	2	1	1	2	9	8	17
south: Fareham	11	2	14	4	7	11	53	47	99
west: Eastleigh	3	1	4	1	2	3	15	13	28
0	0	0	0	0	0	0	0	0	0
	33	**7**	**40**	**12**	**21**	**32**	**154**	**137**	**290**
Taxi / minicab									
local	2	0	2	1	1	2	8	7	14
Car driver									
north: Winchester	132	28	160	48	82	130	615	547	1,162
east	45	10	55	16	28	44	210	187	397
south: Fareham	91	19	110	33	57	89	424	377	800
west: E'leigh/H End	65	14	79	23	40	64	303	269	572
0	0	0	0	0	0	0	0	0	0
	334	**71**	**404**	**120**	**207**	**327**	**1,551**	**1,379**	**2,931**
Car passgr									
north: Winchester	14	3	17	5	9	13	64	57	121
east	4	1	5	2	3	4	20	17	37
south: Fareham	8	2	10	3	5	8	39	35	74
west: E'leigh/H End	6	1	7	2	4	6	27	24	51
0	0	0	0	0	0	0	0	0	0
	32	**7**	**39**	**12**	**20**	**32**	**150**	**133**	**283**
Cycle	10	2	12	3	6	9	44	39	84
Walk	70	15	85	25	44	69	326	290	617
Total	**570**	**120**	**690**	**205**	**354**	**559**	**2,649**	**2,355**	**5,004**

9.8 Whiteley

Areas 1 and 2

9.8.1 For Areas 1 and 2, we have assumed the following:

- 5% of north, west and east car driver and car passenger trips transferred to train (via Botley and Swanwick stations);
- 15% car driver and car passenger trips transferred to BRT towards Fareham;
- 2% car driver and car passenger trips transferred to bus in other directions;
- 1% car driver and car passenger trips transferred to cycle;
- 10% external car driver and car passenger trips transferred to internal work at home, walk and cycle to reflect a higher level of self-containment.

9.8.2 Table 9.11 sets out the revised assignment to reflect the above. The construction of Whiteley Way facilitates access to Botley station (although we have not included additional linked trips to the station by cycle, bus/BRT or car) and via the Yew Tree Drive bus-only link to Swanwick station; it has been assumed that the Eastleigh Chord is in place to allow direct trips from Botley to SHSEZ and Southampton Central.

9.8.3 The establishment of a BRT route in connection with the North/North East Hedge End SDA allows the North Whiteley sites to benefit. This would be intended to have sufficient priority measures to provide an acceptable alternative to car use for journeys to Fareham for the town centre facilities and rail station. The figures do not include additional trips from the established Whiteley and Segensworth areas, suggesting that the BRT route could be well used and financially attractive to an operator.

9.8.4 Other local buses and cycling could also experience some relatively minor increases.

Table 9.11 Whiteley Areas 1 and 2 Revised Assignment

Revised Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	325	69	394	117	202	319	1,510	1,343	2,853
Train									
north: Botley	54	11	65	19	33	53	249	222	471
east: Swanwick	24	5	29	9	15	23	111	99	209
south	0	0	0	0	0	0	0	0	0
west: Swanwick	5	1	6	2	3	5	25	22	46
	83	**17**	**100**	**30**	**51**	**81**	**385**	**342**	**727**
Bus/minibus									
north: Whiteley Way	21	4	25	8	13	20	97	86	183
east: M27J9	2	0	3	1	1	2	10	9	19
south: M27J9	3	1	4	1	2	3	15	13	28
west: M27J9	2	0	3	1	1	2	11	10	21
local	7	1	8	2	4	7	32	28	60
	35	**7**	**43**	**13**	**22**	**35**	**164**	**146**	**310**
Taxi/minicab									
local	0	0	0	0	0	0	0	0	0
Car driver									
north: Whiteley Way	340	72	412	123	211	334	1,582	1,407	2,989
east: M27J9	536	113	649	193	332	525	2,491	2,215	4,705
south: M27J9	361	76	437	130	224	353	1,676	1,490	3,166
west: M27J9	405	86	490	146	251	397	1,882	1,673	3,555
local	14	3	17	5	8	13	63	56	120
	1,655	**350**	**2,005**	**596**	**1,027**	**1,623**	**7,693**	**6,841**	**14,535**
Car passgr									
north: Whiteley Way	15	3	18	5	9	14	68	61	129
east: M27J9	23	5	28	8	14	23	108	96	204
south: M27J9	16	3	19	6	10	15	73	64	137
west: M27J9	18	4	21	6	11	17	81	72	154
local	7	1	8	2	4	7	32	28	60
	78	**16**	**94**	**28**	**48**	**76**	**362**	**322**	**684**
Cycle	127	27	154	46	79	125	591	525	1,116
Walk	208	44	252	75	129	204	966	859	1,824
Total	**2,511**	**531**	**3,042**	**904**	**1,558**	**2,462**	**11,671**	**10,378**	**22,049**

9.8.5 Assuming that the mitigation measures indicated above are effective and that there is a 20% reduction in demand from the SDA, the impacts on the M27 are shown in Figures 9.1 and 9.2 for AM Peak and daily traffic respectively. Although demand is reduced, there are still implications for the motorway flows.

Figure 9.1 Impact of AM Peak Generated Trips at M27 Junction 9 Whiteley With Mitigation Measures

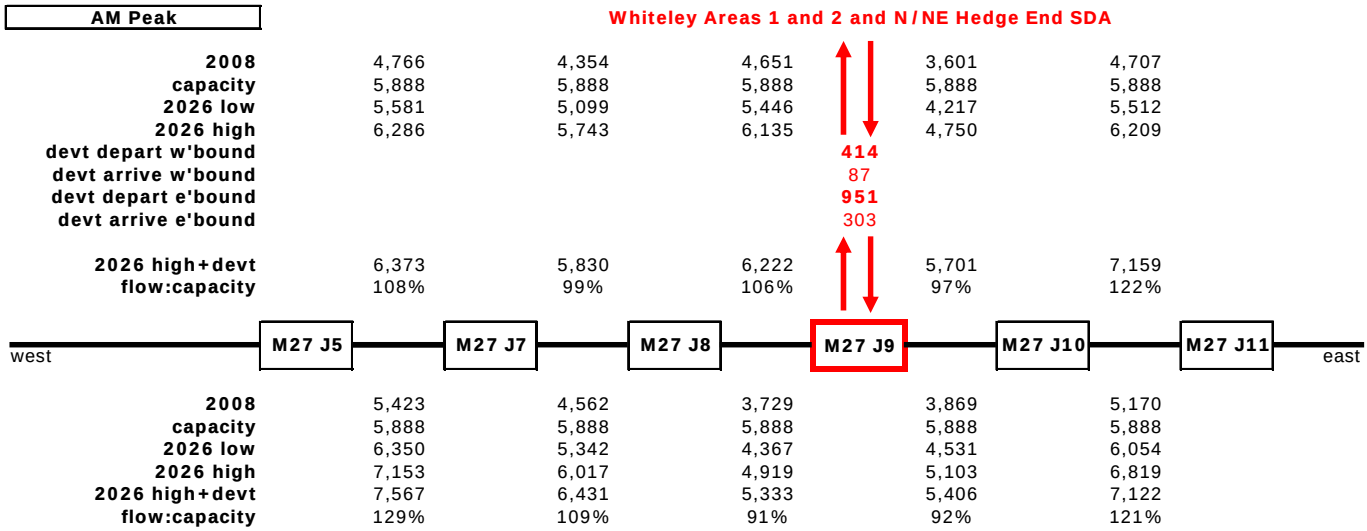
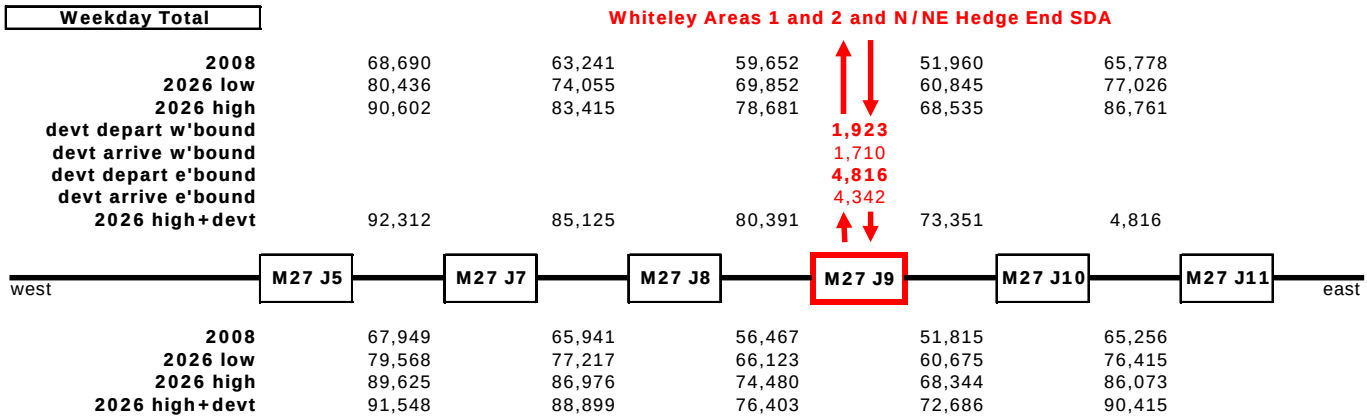


Figure 9.2 Impact of Daily Generated Trips at M27 Junction 9 With Mitigation Measures



Area 3

9.8.6 For Area 3, the following assumptions have been made:

- 2% of north, west and east car driver and car passenger trips transferred to train (via Botley and Swanwick stations);
- 2% car driver and car passenger trips transferred to BRT towards Fareham;
- 2% car driver and car passenger trips transferred to bus in other directions; and
- 2% car driver and car passenger trips transferred to cycle.

9.8.7 This reflects the relatively constrained location without a direct BRT service as shown in Table 9.12. Hence the potential for a shift towards sustainable modes is restricted.

Table 9.12 Whiteley Area 3 Revised Assignment

Revised Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	171	36	208	62	106	168	796	708	1,504
Train									
north: Botley	43	9	52	15	27	42	199	177	376
east: Swanwick	25	5	30	9	15	24	114	102	216
south	0	0	0	0	0	0	0	0	0
west: Swanwick	9	2	11	3	6	9	44	39	82
	77	**16**	**93**	**28**	**48**	**75**	**357**	**317**	**674**
Bus/minibus									
north: Whiteley Way	10	2	12	4	6	10	46	41	87
east: Whiteley Lane, A27	10	2	12	4	6	10	46	41	88
south: Whiteley Lane, A27	8	2	9	3	5	8	36	32	67
west: Whiteley Lane, A27	8	2	10	3	5	8	37	33	71
local	5	1	6	2	3	4	21	19	40
	40	**8**	**49**	**14**	**25**	**39**	**186**	**166**	**352**
Taxi/minicab									
local	0	0	0	0	0	0	0	0	0
Car driver									
north: Whiteley Way	318	67	386	115	198	312	1,480	1,316	2,796
east: Whiteley Lane, A27	391	83	474	141	243	384	1,818	1,617	3,435
south: Whiteley Lane, A27	256	54	311	92	159	251	1,192	1,060	2,251
west: Whiteley Lane, A27	264	56	320	95	164	259	1,226	1,090	2,316
local	9	2	11	3	6	9	42	38	80
	1,239	**262**	**1,501**	**446**	**769**	**1,215**	**5,758**	**5,120**	**10,878**
Car passgr									
north: Whiteley Way	14	3	17	5	9	14	64	57	121
east: Whiteley Lane, A27	17	4	21	6	11	17	79	70	149
south: Whiteley Lane, A27	11	2	13	4	7	11	52	46	97
west: Whiteley Lane, A27	11	2	14	4	7	11	53	47	100
local	5	1	6	2	3	4	21	19	40
	58	**12**	**70**	**21**	**36**	**57**	**269**	**239**	**507**
Cycle	49	10	59	18	30	48	228	202	430
Walk	40	8	49	14	25	39	187	166	353
Total	**1,674**	**354**	**2,028**	**603**	**1,039**	**1,641**	**7,780**	**6,919**	**14,699**

9.8.8 Remedial measures for the sites, extended to incorporate the existing area, should include:

- Continuous cycle routes on both adopted and unadopted highways and creating a comprehensive network off-road;
- Providing secure cycle parking for housing units (i.e. Sheffield stands in locations where they can be seen with dropped kerbs);
- Infrastructure to support walking, particularly overcoming lack of lighting on some routes and direction signing;
- Investigation of how bus services can be provided throughout Whiteley, linking housing and employment areas with Swanwick station and Fareham on a frequent basis – this is a basic requirement that must be addressed to overcome the inaccessibility and car dependency of recent housing sites;
- Consideration of workplace parking charges and charging for parking at the Village Outlet shopping area; and
- Reinvigoration of travel plans for the primary school and workplaces alongside the above measures.

9.9 West of Waterlooville

9.9.1 The main element of an effective strategy is to focus on core bus/BRT links towards Waterlooville and Cosham/Portsmouth, without which the extended MDA will become largely car-orientated. Assumptions in the analysis are as follows:

- 3% of local car driver and car passenger trips transferred to cycle;
- 2% of local car driver and car passenger trips transferred to walk; and
- 15% of car driver and car passenger trips transferred to bus to Waterlooville and Cosham/Portsmouth.

9.9.2 This results in a healthy number of bus users provided that a suitably attractive service is in place as shown in Table 9.13. It may be appropriate to extend the current RailLink bus from Waterlooville town centre to the MDA to connect with trains at Petersfield; other rail services are accessible from Cosham via an enhanced bus connection. Some local journeys can be made by walking and cycling with suitable routes being introduced.

Table 9.13 West of Waterlooville Revised Assignment

Revised Assignment		AM			PM			DAY		
EXTERNAL+INTERNAL		depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home		221	47	268	80	137	217	1,027	913	1,940
Train										
	north: A32	4	1	5	1	2	4	18	16	34
	east	12	2	14	4	7	11	54	48	102
	south: Cosham	109	23	131	39	67	106	504	448	953
	west	0	0	0	0	0	0	0	0	0
		124	**26**	**150**	**45**	**77**	**122**	**576**	**512**	**1,089**
Bus/minibus										
	north: A32	28	6	34	10	17	27	129	114	243
	east	23	5	28	8	14	23	108	96	203
	south: Cosham	82	17	99	30	51	81	382	339	721
	west	56	12	67	20	35	55	259	230	489
	0	0	0	0	0	0	0	0	0	0
		189	**40**	**229**	**68**	**117**	**185**	**877**	**780**	**1,657**
Taxi/minicab										
	local	6	1	8	2	4	6	30	26	56
Car driver										
	north: A32	234	49	283	84	145	229	1,086	965	2,051
	east	91	19	110	33	56	89	422	376	798
	south: Cosham	332	70	403	120	206	326	1,545	1,374	2,918
	west	573	121	694	206	355	561	2,661	2,366	5,027
	0	0	0	0	0	0	0	0	0	0
		1,229	**260**	**1,489**	**443**	**763**	**1,205**	**5,713**	**5,081**	**10,794**
Car passgr										
	north: A32	23	5	28	8	14	22	106	94	200
	east	7	2	9	3	5	7	35	31	66
	south: Cosham	31	6	37	11	19	30	142	126	268
	west	58	12	71	21	36	57	271	241	513
	0	0	0	0	0	0	0	0	0	0
		119	**25**	**144**	**43**	**74**	**117**	**554**	**492**	**1,046**
Cycle		39	8	47	14	24	38	182	162	344
Walk		270	57	328	97	168	265	1,257	1,118	2,375
Total		**2,198**	**464**	**2,663**	**791**	**1,364**	**2,155**	**10,216**	**9,085**	**19,301**

9.10 Knowle

9.10.1 For Knowle, to reflect its relative isolation, we have assumed the following:

- 2.5% of car drivers and car passengers transferred to cycle; and
- 10% of car drivers and car passengers transferred to bus.

9.10.2 Table 9.14 shows the assignment which does not assume the implementation of a new rail station at Knowle.

Table 9.14 Knowle Revised Assignment

Revised Assignment	AM			PM			DAY		
EXTERNAL+INTERNAL	depart	arrive	total	depart	arrive	total	depart	arrive	total
Work at home	65	14	79	24	41	64	304	271	575
Train									
north: Winchester	21	5	26	8	13	21	99	88	188
east	1	0	1	0	1	1	4	4	8
south: Fareham	11	2	14	4	7	11	52	47	99
west: Eastleigh	3	1	4	1	2	3	15	13	28
	37	**8**	**45**	**13**	**23**	**36**	**171**	**152**	**323**
Bus/minibus									
north: Winchester	19	4	23	7	12	19	88	79	167
east	1	0	1	0	1	1	4	4	8
south: Fareham	21	4	25	7	13	20	96	86	182
west: Eastleigh	2	1	3	1	2	2	11	10	22
0	0	0	0	0	0	0	0	0	0
	43	**9**	**52**	**16**	**27**	**42**	**200**	**178**	**379**
Taxi/minicab									
local	2	0	2	1	1	2	9	8	17
Car driver									
north: Winchester	169	36	205	61	105	166	788	700	1,488
east	47	10	57	17	29	46	217	193	410
south: Fareham	94	20	114	34	58	92	436	388	824
west: E'leigh/H End	65	14	79	23	40	64	303	270	573
0	0	0	0	0	0	0	0	0	0
	375	**79**	**455**	**135**	**233**	**368**	**1,744**	**1,551**	**3,295**
Car passgr									
north: Winchester	18	4	21	6	11	17	82	73	156
east	4	1	5	2	3	4	20	18	39
south: Fareham	8	2	10	3	5	8	38	34	72
west: E'leigh/H End	6	1	7	2	4	6	28	24	52
0	0	0	0	0	0	0	0	0	0
	36	**8**	**44**	**13**	**23**	**36**	**169**	**150**	**319**
Cycle	14	3	17	5	9	14	65	58	123
Walk	79	17	95	28	49	77	365	325	690
Total	**651**	**138**	**789**	**234**	**404**	**639**	**3,027**	**2,692**	**5,719**

9.11 Colden Common/Twyford/Shawford

9.11.1 Enhanced bus services in the corridor could be provided but would be difficult to justify in terms of increased costs, there being a regular service in place currently. The lack of local facilities is unlikely to be overcome and employment, particularly higher order jobs, is unlikely to be relocated and can be expected to focus on larger centres including Eastleigh/SHSEZ, Winchester, Southampton and Basingstoke.

9.12 Kings Worthy

9.12.1 Kings Worthy has few local facilities and is better related to car use than to bus use given its location in relation to the A33 and A34(T) and Winchester.

9.13 Waltham Chase and Swanmore

9.13.1 If Bishops Waltham and Wickham are to be enlarged and attract a better bus service to Fareham (and potentially to Eastleigh and Winchester), then Waltham Chase and Swanmore could add to its viability. As with other settlements in the area, the main focus for activity is outside the immediate area and good connections with other centres will remain a key feature.

10 Conclusions and Recommendations

10.1 Conclusions

10.1.1 Winchester District exhibits different transport activity in the city compared with the rest of the predominantly rural District. In the city, traffic growth has been contained over a number of years and congestion is largely confined to peak periods. However, traffic using the M3 has increased considerably and additional traffic would contribute to congestion on this key route. There are many opportunities for walking and cycling journeys as well as making use of the local bus network.

10.1.2 For the smaller settlements, some containment of employment is evident but inevitably there is demand for movement to larger centres, particularly in the PUSH area to the south of the District with major urban centres including Southampton, Eastleigh, Hedge End, Fareham and Portsmouth within reach. Across much of the District, car journeys predominate and the traffic levels throughout the M27 corridor are increasing.

Mitigation Measures Required

10.1.3 Significant mitigation measures will be required for any of the proposed development sites to function in an efficient and sustainable way. Larger scale developments present the greatest opportunities for creating successful walking and cycling networks and to exploit the potential for viable local bus services. Given the scale of the District allocation, there will be significant road traffic impacts and every attempt must be made to reduce this by promoting effective rail and bus alternatives to car use on an appropriate scale and to support walking and cycling; where possible, higher levels of containment should be pursued to support a better balance of commuting so that people can live and work in the same settlement.

10.1.4 Development in Winchester town can be achieved provided that there is a strong emphasis on sustainable modes to minimize the impact of car traffic. This requires an approach that considers bus access, walking and cycling first and provision for car access second. The capacity of transport networks is such that growth can be accommodated although further pressures on the M3 junctions (particularly Junction 9) are likely to cause some problems. There will be impacts on the local road network due to the constraints in particular corridors but park and ride will help relieve additional demand, particularly at peak times. For the Step Change option, the size of the potential sites will result in considerable impacts on the highway network but the details of this are dependent on how any development is distributed among the four areas identified. Again there is scope to incorporate sustainable modes to a considerable extent and to integrate the sites with the established land uses and travel patterns.

10.1.5 Elsewhere in the District, Whiteley offers major potential but this is only deliverable with significant transport measures to address not only the demands of new housing but also the established Whiteley area. The level of car dependency in the area is currently very high and to reduce the impacts of further development, there will need to be a transfer from existing car use to other modes. Adding traffic to M27 Junction 9 is undesirable due to the congestion already experienced and extensive public transport will be required to make the development site function. This is envisaged as being bus rapid transit as part of a wider network including links to the North/North East Hedge End – co-ordinating development at Whiteley with the SDA could provide new opportunities for joint transport provision and

funding. The location of other large sites in the M27 corridor will exacerbate problems on the trunk and local road networks and further consideration of the impacts of the North Fareham SDA in particular will be required, particularly when considering growth in the Knowle/ Wickham/Bishop's Waltham area.

10.1.6 Further development in the West of Waterlooville MDA could be achieved provided that strong bus links are created in the Portsmouth to Waterlooville corridor. Without an attractive service direct to the MDA and associated sites, car dependency is inevitable and sustainability objectives will not be met.

10.1.7 The smaller settlements are unlikely to sustain large scale development individually or collectively without inducing further car dependency. Extending bus provision is unlikely to be possible in the absence of a major development site but some locations could benefit from public transport provision associated with larger sites in the area. The agglomerated impacts of higher levels of development in Bishops Waltham, Wickham, Waltham Chase and Swanmore (perhaps with Knowle also) suggest that a good bus service could be established.

10.2 Recommendations for the Location of Development

10.2.1 Considerable opportunities for development exist in Winchester town. **Barton Farm** is relatively close to the central area and rail station and could be designed to support sustainable modes particularly walking and cycling routes and a new bus service. Other identified sites at **Pitt Manor** and **Worthy Road** can be incorporated into existing transport networks without major difficulties. Larger scale development (the step change option) will have significant impacts on the M3, create further traffic in the central area and exacerbate constraints on the capacity of local transport networks. However, depending on the locations of sites within the broader options, some walking, cycling and bus use could be created.

10.2.2 Major opportunities are also presented at **Whiteley**. However, unless transport problems are addressed, the site will exacerbate traffic problems at M27 Junction 9 even with the completion of Whiteley Way to the north. The relationship between North Whiteley and the North/North East Hedge End SDA means that the sites could share some transport provision, particularly bus rapid transit links to major centres. To achieve further growth at Whiteley, substantial efforts are needed to secure strong bus/BRT services, linking with other centres (including the SDA, Segensworth and Fareham), to promote more local walking and cycling and develop travel plan initiatives. Without this, the proposed sites will not be able to function effectively.

10.2.3 Additional development at the **West of Waterlooville** MDA is achievable provided that good sustainable transport links are in place between the site and the A3 corridor, particularly to Waterlooville town centre, Cosham and Portsmouth. Some growth at Denmead could be achieved also in association with an expanded MDA.

10.2.4 Other more limited development could be provided in some of the smaller settlements including **Bishop's Waltham** and **Wickham**, possibly including Swanmore and Waltham Chase if public transport services can be improved.

10.2.5 The **New Alresford** area is more isolated and less likely to support public transport improvements although significant capacity is available on the A31 towards Winchester for car movements.

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