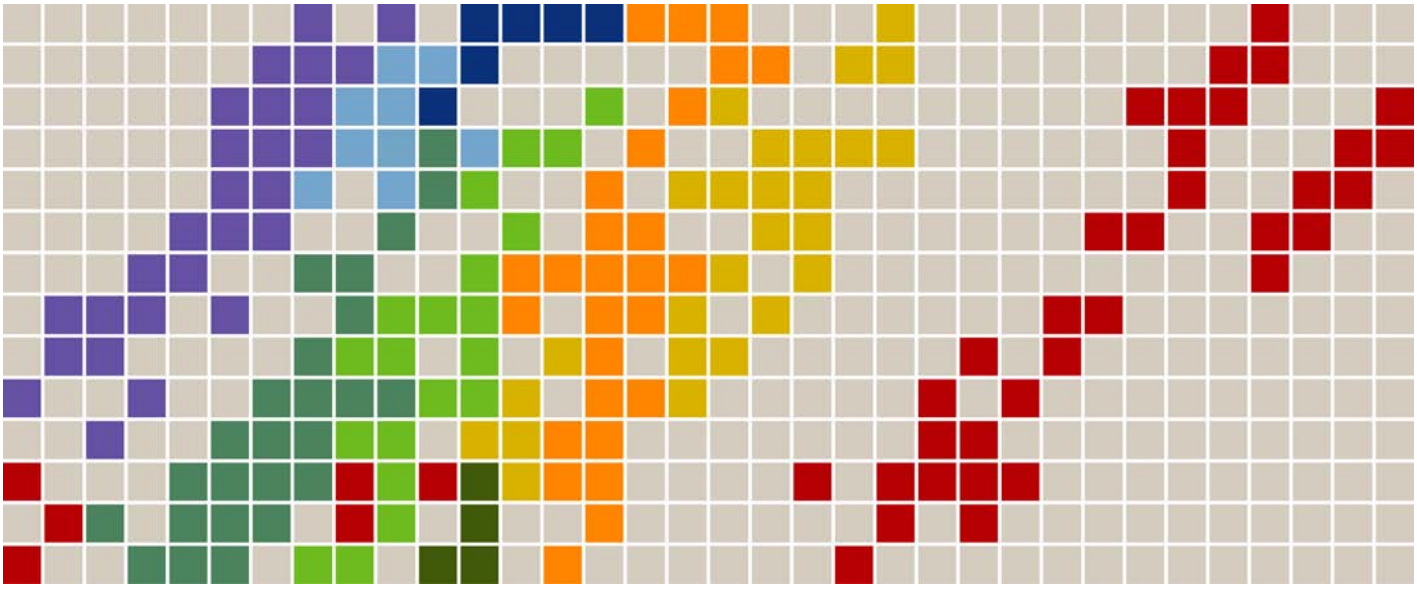
APPENDIX I

Framework Travel Plan



South West Bicester
Framework Travel Plan

Countryside Properties (Bicester) Ltd

November 2006

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Contents

1 Introduction

1.1 BACKGROUND

1.1.1 This Framework Travel Plan has been prepared in support of the Transport Assessment for the proposed development at South West Bicester, Bicester.

1.2 POLICY CONTEXT

1.2.1 It is important to establish the policy context in which this Framework Travel Plan (TP) has been produced as this defines the vision for the area, what is achievable in terms of modal split and identifies travel planning measures that will work within the proposed mixed use development. The Framework TP supports the over arching aims for Bicester as published in the OCC Local Transport Plan and Bicester ITS.

1.2.2 In 2002 the Government published the research document, Making Travel Plans Work[1]. This assessed the achievements of work place travel plans from 20 UK organisations and found that on average, an 18% reduction in commuters driving to their places of work was recorded after the implementation of a number of travel plan measures. Work place travel plans also helped to reduce congestion, relieved parking pressure, made sites more accessible and improved employer travel choice thus aiding staff retention.

1.2.3 The Department for Transport's Smarter Choices Report[2] which was published in 2004 concluded that a reduction of 21% in peak period urban traffic and 14% in non urban traffic could be achieved through the application of a range of measures, including work place travel plans, school travel plans, personalised travel plans, marketing strategies, awareness raising campaigns, tele-working and the dissemination of public transport information. This Framework TP will incorporate as many of these measures as deemed appropriate to promote sustainable transport solutions in order to reduce single car occupancy trip generation as forecast through the Transport Assessment.

1.2.4 This Framework TP has been produced to comply with existing transport policy, and, where appropriate, Department for Transport Good Practice Guidance for Residential Travel Plans.

1.2.5 The Transport Assessment was undertaken following consultation with Oxfordshire County Council and the approach adopted within the assessment is consistent with the guidance within PPG13[3].

1.2.6 The Framework TP for the South West Bicester development will ensure that the new community and future generations who will live and work in the area will fulfil the Government's vision: "The way our communities develop economically, socially and environmentally, must respect the needs of future generations as well as succeeding now. This is the key to lasting, rather than temporary, solutions; to creating communities that can stand on their own feet and adapt to the changing demands of modern life. Places where people want to live and will continue to want to live"[4].

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[1] *Making Travel Plans Work: Lessons from UK case studies*, Good Practice Guide and research report, Transport 2000 and Department for Transport July 2002.
[2] *Smarter Choices – Changing the Way We Travel*, Department for Transport, July 2004
[3] *Planning Policy Guidance Note 13: Transport PPG13 :Transport,* Office of the Deputy Prime Minister, Department for Transport, 2001
[4] *Sustainable communities: building for the future*, Office of the Deputy Prime Minister, 2003

1.2.7 "Accessibility is central to the creation of sustainable communities. The Government's Sustainable Communities Plan – a major programme for new and regenerated housing across the country – acknowledges this. It emphasises the need for communities to be "well connected", with facilities to encourage safe walking and cycling, the provision of good public transport and easy access to high quality services. Steps taken now to make new developments more accessible in a sustainable manner will influence the travel patterns of these communities far into the future. They should also help reduce pressure of additional traffic on surrounding roads, while creating more attractive and liveable neighbourhoods."[5] This Framework TP has been prepared according to the aspirations of the Government's Sustainable Communities Plan and to ensure that this development will be attractive to residents, employers and employees now and in the future.

1.2.8 It is recognised that residential travel plans are key to ensuring that provision to support sustainable modes of transport are incorporated into every aspect of the design of a new development. Many of the measures that have been found to be most effective in ensuring the success of workplace travel plans are also applicable to residential travel plans. These may include: parking management, marketing and awareness raising campaigns, bicycle and footpath infrastructure, links to and extensions of the existing public transport network, tele-working and car share schemes. "In terms of process, appointing a travel plan co-ordinator, taking a site specific approach and working in partnership with the local authority and public transport operators, are all likely to be important in a residential (or mixed use) setting."[6]

1.2.9 When implemented at the earliest stages of design, residential travel plans coordinate the aspirations of the local planning authority, the developer and the end user. As a consequence the Framework TP for South West Bicester will form the basis for consensus between stakeholders and all interested parties wishing to promote this development.

1.3 SCOPE OF THIS REPORT

1.3.1 This Framework TP supports the previous transport planning studies that have been undertaken in the preparation of this Transport Assessment. This document identifies the measures to be implemented with the aim of achieving the target mode shares through the introduction of specific travel plans for the main elements of the proposed development in support of the over-arching travel plan strategy. Travel plans will be prepared for the residential, employment and school elements of the proposed development, supported by individual travel plans for the new workplaces, primary schools and vocational college.

[5] *Sustainable communities: building for the future*, Office of the Deputy Prime Minister, 2003

[6] *Good Practice Guidance: Residential Travel Plans*, (consultation document) Transport 2000, Department for Transport, June 2005

2 Travel Plan Aims and Objectives

2.1 OVER-ARCHING AIMS AND TRAVEL PLAN OBJECTIVES

2.1.1 The over-arching aims of the this Framework Travel Plan have been prepared in accordance with the aims of the OCC LTP and the draft Good Practice Guidance for Travel Plans. The aims are to:

- promote integration of all modes of transport;
- reduce the impact on the environment of traffic generated by the site including, where possible, mitigate air pollution, noise and vibration thereby helping address the causes and potential impacts of climate change and reduce the visual intrusion of site induced traffic;
- create a public space that promotes safety in terms of mitigating traffic accidents;
- support the Government's mixed community and housing objectives ;
- support social inclusion objectives particularly through improvement to accessibility to and from the site; and
- support the government's criteria to improve, the economy, health and education.

2.1.2 This travel plan will also support integrated policy development between the Local Transport Plan and emerging Local Development Framework (LDF) whilst providing a mechanism through which ongoing appraisals can be undertaken.

2.1.3 The over-arching objectives of the South West Bicester Travel Plan have, once again, been prepared in accordance with the aims of the OCC LTP and the draft Good Practice Guidance for Travel Plans and they support the Government's criteria to improve integration, accessibility, safety, the environment and economy. The objectives are:

- provide a pleasant pedestrian area with safe footways and road crossings paying particular attention to the needs of those who are mobility impaired;
- support integration and safety by encouraging safe cycling through the provision of a comprehensive on-site cycle network connecting to the key employment, shopping and school sites and off-site cycle network;
- reduce traffic speeds (and mitigate potential accidents) and manage demand through traffic management schemes which will in turn provide a safer and more favourable environment for pedestrians and cyclists;
- reduce traffic through the implementation of a robust parking strategy which allocates less parking per dwelling than the Oxfordshire maximum parking standards;
- provide an efficient and attractive public transport service for the proposed development ;
- to enable people to make better informed travel choices; and
- provide a mechanism for the implementation and assessment of travel plan measures through the employment of a travel plan co-ordinator for the proposed development.

2.1.4 The separate travel plans for residents, employment and schools, including individual travel plans for workplaces and schools, will adhere to the aims and objectives of the Framework TP outlined above.

2.1.5 The travel initiatives promoted could also have a wider benefit to the local communities in the vicinity of the proposed South West Bicester development.

3 Development Proposals

3.1 DEVELOPMENT PROPOSALS

3.1.1 The development proposals support the Framework TP strategy. These proposals provide the walk, cycle and public transport infrastructure that will support the travel plan measures for the site.

3.1.2 The proposals for the site are based on providing a high quality residential development in conjunction with the provision of employment land, a hotel, a health village, a local centre, community facilities (including 2 primary schools and a vocational college) and a sports centre. The master plan is included in the Environmental Statement (ES).

3.1.3 On-site parking provision for all components of the development will be provided in accordance with Cherwell District Council's parking standards. Therefore, it is anticipated that the level of parking provision that will accompany the residential development will act to discourage car use and therefore maximise the potential for journeys to be undertaken by more sustainable modes of travel.

3.1.4 The employment area and the local centre will enjoy a high level of public accessibility. It is therefore important to balance the need for parking spaces with the promotion of non-car trips. The application of the appropriate reductions to Cherwell District parking standards will help to achieve the aspiration of reduced car use, although it is important that the attractiveness of commercial opportunities to potential businesses is not inhibited, thereby helping to ensure the local centre flourishes from the outset.

3.1.5 Section 7 of the Transport Assessment report provides further information on the proposed on-site parking strategy.

3.2 PEDESTRIAN AND CYCLE STRATEGY

3.2.1 A pedestrian and cycle strategy has been developed that accords with the objectives of the OCC LTP and Bicester ITS. Section 7 of the Transport Assessment report provides details of the proposed strategy.

3.3 PUBLIC TRANSPORT STRATEGY

3.3.1 In order to deliver a high quality public transport service a public transport strategy has been developed. Detail of the proposed bus strategy is contained in Section 7 of the Transport Assessment report.

4 Site Audits

4.1 EXISTING SITE AUDIT

4.1.1 Site audits of existing conditions have been undertaken to assess the potential for the provision of effective travel planning measures. The main thrust of these measures will concentrate on promoting alternative modes of transport to the car; primarily walk, cycle and bus facilities.

4.1.2 Comprehensive details of the existing conditions and a review of the accessibility of the proposed development site are included within Sections 4 and 6 of the Transport Assessment report.

4.1.3 It is considered that the site is readily accessible on foot and its location reduces car dependency by facilitating safe and convenient pedestrian trips to jobs, education and health facilities, shopping, leisure and local services.

4.1.4 The site will be well served by bus services linking the site with Bicester town centre. More information regarding the bus strategy is detailed in Section 7 of the Transport Assessment report.

4.1.5 It is important to establish a clear distinction between the site infrastructure that will provide the means by which people will walk, cycle, and use public transport and the travel plan measures (the soft factors) that will promote sustainable modes of transport and encourage people to use the infrastructure facilities provided. The site audit provides the foundation on which to build a travel planning strategy that will maximise the benefits of new infrastructure. It is recognised that the provision of infrastructure is not enough in itself to encourage people to walk, cycle or use public transport. Therefore the employment of a Travel Plan Co-ordinator will be of paramount importance to promote the soft factors thus ensuring optimum utilisation of the infrastructure provided for the site.

4.1.6 The provision of on-site infrastructure such as safe walk and cycle routes, bus shelters and bus priority measures will be incorporated into the site master plan.

5 The Travel Plan Co-ordinator

5.1 EMPLOYMENT OF THE TRAVEL PLAN CO-ORDINATOR

5.1.1 It is widely acknowledged that the employment of a Travel Plan Co-ordinator is fundamental to the success of any travel plan[7]. Government research shows that the most successful travel plans employ a Travel Plan Co-ordinator who is responsible for the implementation of travel plan measures and monitoring the success of the Travel Plan.

5.1.2 The developer should employ a Travel Plan Co-ordinator on commencement of construction for the proposed development. This will ensure that the Travel Plan Co-ordinator can be involved in every aspect of the development that is pertinent to promoting sustainable transport solutions for the site.

5.1.3 The Travel Plan Co-ordinator will be given an office location situated on-site. This could take the form of a travel centre which would serve the dual purpose of providing administrative support for the Travel Plan Co-ordinator and alternative transport information for residents, employees and visitors. The on-site location of the Travel Plan Co-ordinator's office will ensure that the person employed in the role becomes a familiar face around the site, someone who is known to 'champion' the sustainable transport measures of the development.

5.1.4 It is envisaged that the co-ordinator will liaise with the local authority and key stakeholders to ensure 'buy-in' to the travel planning process.

5.1.5 In order to achieve 'buy-in' one of the first tasks of the Travel Plan Co-ordinator will be to establish a Travel Plan Forum to aid the implementation of the Travel Plan and assist in the travel plan management and monitoring process.

5.2 TRAVEL PLAN FORUM

5.2.1 The membership of the Travel Plan Forum will be by invitation. The purpose of establishing the forum will be to ensure that the Travel Plan Co-ordinator is not working in isolation but in partnership with the local authority, primary stakeholders and interested parties. In the first instance invitations to join the Travel Plan Forum will be issued from the developer on behalf of the Travel Plan Co-ordinator and will encompass representatives from organisations such as:

- The local planning authority
- The local highway authority
- The developer
- The residents association (assuming one will be established for the site)
- The chamber of commerce
- SUSTRANS
- Bus operators

[7] *A Travel Plan Resources Pack for Employers*, Transport Energy 2002

- The local education authority, and
- The local health authority.

(This list is indicative, not exhaustive and may be added to as the development matures)

5.2.2 The Travel Plan Forum will meet once a quarter to monitor the development and evaluation of the Travel Plan. The members of the forum will be expected to contribute ideas and 'inspiration' to ensure that the Travel Plan maintains impetus.

5.3 TRAVEL PLAN CO-ORDINATOR'S ROLE AND RESPONSIBILITIES

5.3.1 In order to appreciate the importance of the role of the Travel Plan Co-ordinator an indicative job description has been prepared. However, it should be noted that this is likely to change and evolve as the site moves from the construction stage to occupation, and through occupation to maturity.

5.3.2 In essence the Travel Plan Co-ordinator will be expected to:

- manage and implement the over-arching Travel Plan strategy;
- co-ordinate the various Travel Plans paying particular attention to travel planning measures that are common to each Travel Plan such as national awareness raising events (e.g. car free days and cycle to work weeks);
- design welcome packs to be available on initial occupation of the site;
- implement Travel Plan measures for each Travel Plan;
- liaise with public transport providers to ensure a high quality service is being delivered, and
- review the Travel Plans through various monitoring techniques with assistance from the Travel Plan Forum.

5.3.3 Some of the day to day tasks of the Travel Plan Co-ordinator will include:

- Undertaking site audits and modal split surveys according to the timetable to be determined by the Travel Plan Forum;
- overseeing the development and implementation of the Travel Plans. This will involve putting in place Travel Plan measures such as a car share scheme, car club, awareness raising campaigns etc (see the individual Travel Plan measures in section 7 for further detail);
- obtaining and maintaining commitment and support from residents, the school and commercial interests on the site;
- designing and implementing effective marketing and awareness raising campaigns to promote Travel Plans;
- setting up, co-ordinating and attending the Travel Plan Forum;
- co-ordinating the necessary data collection exercise required to develop the Travel Plan;
- acting as a point of contact for all staff requiring information, through a travel centre or similar central advice unit;
- manage/operate a bus ticket agency for the sale of discounted tickets (to be agreed/sanctioned with public transport operator);

- liaising with different organisations within the development and external organisations e.g. local authorities, public transport operators etc; and
- co-ordinating the monitoring for the Travel Plans across the site, including target setting.

5.3.4 Once again this list is not conclusive but rather, indicative of the daily activities of the Travel Plan Co-ordinator and it may be expanded or retracted as deemed necessary by the Travel Plan Forum.

6 The Framework Travel Plan

6.1 DEVELOPING THE TRAVEL PLANS

6.1.1 This Framework TP will be used as the foundation for the individual Travel Plans for the mixed use development, which would be supported by individual travel plans for the new workplaces and schools. The Travel Plans are 'living documents' and will change as the site progresses from construction through to occupation and maturity.

6.1.2 The Travel Plans are designed to encourage the use of public transport, walking and cycling and to minimise car movements associated with the proposed mixed use development. Furthermore, the Travel Plans will also take note of any specific local issues identified in the site audit. Therefore, the indicative Travel Plans outlined below will be subject to change following consultation with the local authority.

6.1.3 Discussions will be undertaken with Oxfordshire County Council, to determine the most suitable mechanism to 'secure' the Travel Plan and associated measures.

6.1.4 The main focus for the Travel Plans will be on the residential, employment school trip generation associated with the development.

6.1.5 A number of travel plan measures are generic for all three Travel Plans. These include: the implementation of a car share scheme; the introduction of a car club; sustainable transport measures being publicised through the website; the dissemination of existing marketing and promotional literature published by local authorities, SUSTRANS and similar organisations, and the employment of the Travel Plan Co-ordinator who will oversee all Travel Plans and the generic measures.

6.2 PROGRAMME AND TARGETS

6.2.1 The developer will ensure that a Travel Plan Co-ordinator is appointed to administer the Travel Plans across the whole development, thus ensuring that each Travel Plan is effective in encouraging the use of non-car modes. The Travel Plan Co-ordinator should be appointed during the construction phase of the site.

6.2.2 The programme for the introduction of travel plan measures and achieving the overarching targets will be phased over a period of years from the first occupation.

6.2.3 With the implementation of the sustainable transport measures that will accompany the development, coupled with the additional measures promoted through the Travel Plans, it is considered that a car mode share for journeys associated with the residential, employment and school will reduce. The ultimate mode share targets for these uses are therefore likely to be set at a level below the current Bicester levels.

6.2.4 Whilst the targets should be challenging, it is important they are realistic and achievable in order to maintain the credibility of the Travel Plans. In summary, the targets should be SMART, i.e.

- Specific
- Measurable
- Achievable
- Realistic
- Time-bound

6.2.5 It is essential that the Travel Plan Co-ordinator obtains accurate mode share data so that travel plan targets and associated measures can be adjusted as the site occupation proceeds.

6.2.6 Therefore, during the occupation stage the Travel Plan Co-ordinator will conduct questionnaire surveys amongst residents, employees and visitors of the proposed development every 12 months. The questionnaires will be developed by the co-ordinator in consultation with the Travel Plan Forum and tailored to suit the specific needs of residents, employers and visitors.

6.2.7 Additional snapshot surveys will be undertaken at the direction of the Travel Plan Forum as site occupation progresses and in support of the annual questionnaire survey. These could include car park counts, cycle park counts, monitoring of the car share scheme usage and ATC data checks.

6.2.8 The co-ordinator will analyse the results of the surveys and, based on the findings, and in conjunction with the Travel Plan Forum, will determine if the targets identified for the Framework TP and individual Travel Plans are appropriate. The results of the surveys will also be used as a basis for future monitoring of the Travel Plan.

6.2.9 The school Travel Plan surveys will be undertaken once the school has opened and every 12 months thereafter using the typical survey techniques and resources available.

6.2.10 The Travel Plans will promote a combination of measures aimed at encouraging residents, staff and visitors to travel by foot, cycle and public transport while also discouraging travel by private car.

7 The Individual Travel Plan Measures

7.1.1 The measures for each Travel Plan, outlined below are indicative of the type of measures that will be promoted from the onset of occupation of the site. These will be added to and/or adjusted as the site occupation progresses and would be supported by individual travel plans for the new workplaces and schools.

7.2 THE RESIDENTIAL TRAVEL PLAN MEASURES

Walking

- Create Home Zones at the centre of residential areas. These ensure low vehicle speeds, in the order of 20mph, and encourage high levels of pedestrian activity.
- Ensure the majority of residential development is within 400m of a bus stop with direct pedestrian links.
- Ensure all pedestrian routes to bus stops are safe, lit and direct.
- Ensure all pedestrian routes are clearly signed with street names and directions and show distance and estimated time to destination.
- Ensure good footpath provision for all main pedestrian desire lines through the development.
- Ensure all residential development is in close proximity to a safe route to school.
- Provide maps showing walk routes and estimated time to walk between residential areas and key locations.

Cycling

- Provide each residential unit with safe, secure cycle storage in the form of a garage or bespoke facility.
- Provide dedicated cycle routes providing direct and safe links between all key elements of the development.
- Ensure all cycle routes are clearly signed and show distance and estimated time to destination.
- The network of pedestrian / cycle routes within the site will link to the existing network which will be improved where necessary along routes to off site key destinations.
- Provide Bicester cycle maps and ensure that they are made available through the website.
- Set up a Bicycle User Group (BUG).
- Provide maps showing cycle routes and estimated time to cycle between residential areas and key locations.

Car Sharing

- A car share database will be set up and maintained for the residential community, made available to employees on site.

Car Club

- Establish a car club on a phased basis with the number of cars available increasing as the membership expands. This would operate on a commercial basis although the Travel Plan Forum could consider the appropriateness of the initial purchase of vehicles to 'pump prime' the scheme.
- Parking provision within the residential areas will be in line with current policy guidance and spaces will be allocated for the car club cars.

Public Transport

- A public transport strategy for the proposed development has been prepared.
- Information packs giving details of public transport routes and timetables will be distributed as part of the welcome packs for each home.
- Personalised travel planning will be made available to assist people in planning their routes.
- The Travel Plan Co-ordinator could supply discounted public transport season tickets on behalf of the bus operators (subject to their co-operation).

Marketing/Awareness Raising

- A site office will be provided as a base for the Travel Plan Co-ordinator and will be the distribution point to market sustainable transport information.
- Each homeowner will receive a travel information pack containing details of walking and cycling routes and public transport services. The pack will identify the full range of initiatives and facilities available to them. The name and contact details of the Travel Plan Co-ordinator and a description of the travel plan concept, the review process and opportunities to become involved will also be included. This will be a community travel plan involving the resident's association at every stage. The site will be marketed as a sustainable development to attract like minded people.

- The Travel Plan Co-ordinator will ensure that national promotions are incorporated into the Travel Plan. These could include car free days and cycle to work week. These promotions will take place with support from Oxfordshire County Council and Cherwell District Council.
- A bi-annual travel plan newsletter will be produced for the development and distributed to each household.
- Competitions and events will be held in conjunction with the distribution of the news letter to maintain the high profile of the Travel Plan.
- Where applicable, the Travel Plan Co-ordinator will ensure that the residential travel plan measures link in with measures for the employment and school Travel Plans.

Monitoring

- Undertake the necessary monitoring to establish the success of the Travel Plan and make amendments where necessary. These surveys could include snapshots surveys of parked cars, of numbers of cyclists using on site bike stands, monitoring of the car share scheme usage and ATC data.

7.3 EMPLOYMENT TRAVEL PLAN MEASURES

Walking

- Ensure all of the employment / retail development is within 400m of a bus stop.
- Ensure all pedestrian routes to bus stops are safe, lit and direct.
- Ensure all pedestrian routes are clearly signed with street names and direction.
- Personal safety training could be made available for staff who wish to walk to work.
- Provide maps showing walk routes and estimated time to walk between residential areas and key locations.

Cycling

- Provide covered, secure cycle parking on site in central areas.
- Provide dedicated cycle routes providing direct and safe links to each employment site and ensure all routes are clearly signed.
- Establish bicycle user groups with ongoing events and initiatives.

- Provide maps showing cycle routes and estimated time to cycle between residential areas and key employment locations.

Car Sharing

- Maintain a car-share database to enable employers to car share on a regular basis.
- Provide preferential parking spaces for multi-occupancy cars and monitor the use of these spaces possibly using a permit system.
- Parking provision within the employment / retail areas will be in line with current policy guidance. This will be reviewed as other transport modes become more popular.

Car club

- Establish a car club with a car, or cars, being based in the main employment area of the development for use by companies, employees and residents.

Public Transport

- A public transport strategy for the proposed development has been prepared.
- Information packs giving details of public transport routes and timetables will be distributed to each business as they occupy the site and recruit staff.
- Personalised travel planning will be made available to assist people in planning their routes.
- The Travel Plan Co-ordinator will liaise with the public transport operator to negotiate season travel passes for employees within the development and site workers at the construction stage.

Marketing/Awareness

- Provide site-specific travel information packs including details of discounts and initiatives.
- Each business will receive a travel information pack containing details of walking and cycling routes and public transport services. The pack will identify the full range of initiatives and facilities available to them. The name and contact details of the Travel Plan Co-ordinator and a description of the travel plan concept, the review process and opportunities to become involved will also be included.

- The Travel Plan Co-ordinator will ensure that national promotions and awareness raising events are incorporated into the employment element Travel Plan. These could include car free days and cycle to work week. These promotions will take place with support from Oxfordshire County Council and Cherwell District Council.
- The businesses will be encouraged to join in with national travel planning initiatives.
- A bi-annual travel plan newsletter will be produced for the development and distributed to each business in conjunction to delivery of the newsletter to each household.
- Competitions and events will be held in conjunction with the distribution of the news letter to maintain the high profile of the Travel Plan.
- Where applicable, the Travel Plan Co-ordinator will ensure that the employment travel plan measures link in with measures for the residential and school Travel Plans.

Monitoring

- Undertake the necessary monitoring to establish the success of the Travel Plan and make amendments where necessary. These surveys could include snapshots surveys parked cars, of number of cyclists using on site bike stands, monitoring of the car share scheme usage and ATC data.

7.4 THE SCHOOL TRAVEL PLAN MEASURES

7.4.1 In preparing the Travel Plan for the primary and secondary schools, specific reference will be made to the guidance in Safer Routes to School – School Travel Plans.

7.4.2 The measures outlined below are indicative of the type of measures that the Travel Plan Co-ordinator will seek to implement as part of the school Travel Plan:

- Establish a school travel plan group to gain ownership of the school Travel Plan by governors, staff, parents and pupils. All travel plan measures will then have to be endorsed by the travel plan group prior to implementation.
- Promote walking, cycling and public transport as the main modes of travel to the school.
- Ensure that staff, pupils and parents are aware of the alternatives to car use for travel to the school through 'planning for real' exercises and school assemblies.

- The Travel Plan Co-ordinator will ensure that national promotions and awareness raising events are incorporated into the Travel Plan. These could include car free days, cycle to work week and green transport week. These promotions will take place with support from Oxfordshire County Council travel plan officer.
- A bi-annual travel plan newsletter will be produced for the development and distributed to the school as well as to each household and business.
- Competitions and events will be held in conjunction with the distribution of the news letter to maintain the high profile of the Travel Plan.
- Consider setting up specific initiatives such as walking buses, road safety training, provide access to the travel plan website, provide appropriate directions by non-car modes for visitors (walk and cycle maps and journey planners), links to the car share scheme and car club. These measures will have to be endorsed by the travel plan group prior to implementation.
- Encourage participation in the implementation of the Travel Plan at all levels of the school, including staff, pupils and parents through the travel plan group.
- Where applicable, the Travel Plan Co-ordinator will ensure that the employment travel plan measures link in with measures for the residential and employment Travel Plans.

Monitoring

- Undertake the necessary monitoring to establish the success of the Travel Plan and make amendments where necessary. Link into current local authority techniques and resources.

8 Travel Plan Management and Timetable

8.1 MANAGEMENT, MONITORING AND ADJUSTMENT

8.1.1 Following the implementation of the Travel Plan the co-ordinator will undertake surveys on an annual basis to monitor the travel patterns of the residents, employees, staff and pupils in order to continually appraise the effectiveness of each Travel Plan as it develops.

8.1.2 All users would be made aware of the progress of the Travel Plan and informed when any new measures are promoted. This continual process will enable the co-ordinator to measure progress against the site modal split targets, thus helping to identify priority initiatives for the future. The results will be discussed with the Travel Plan Forum before any new measures are implemented thereby ensuring 'by-in' and commitment from all interested parties.

8.1.3 The review process will involve assistance from local planning authority and highway authority. All data will be made available to both authorities. Any changes to the Travel Plan will be made with the agreement of the local highway authority.

8.1.4 It is envisaged that the majority of the mode shift away from car use attributable to the Travel Plan would be achieved during the years immediately following its implementation. Accordingly, the co-ordinator should be employed to deliver the Travel Plan during construction with a residential representative taking control for the initial years of occupation as the development expands.

8.1.5 Based on the views and behaviour of new residents, the Travel Plan Forum will debate and review the implementation of specific measures. This Forum will therefore, guide the Development of the Plan and the work of the co-ordinator. This will influence spending priorities, within the boundaries of the available funds identified as part of the wider section 106 agreement. As part of their role within the Travel Plan Forum, the local planning and highways authorities will need to endorse expenditure.

9 Summary

9.1 THE FRAMEWORK TRAVEL PLAN AIMS AND OBJECTIVES

9.1.1 The framework Travel Plan has been prepared deliver the following aims and objectives – to:

- promote **integration** of all modes of transport;
- reduce the impact on the **environment** of traffic generated by the site including, where possible, mitigate air pollution, noise and vibration thereby helping address the causes and potential impacts of climate change and reduce the visual intrusion of site induced traffic;
- create a public space that promotes **safety** in terms of mitigating traffic accidents;
- support the Government's mixed community and housing objectives ;
- support social inclusion objectives particularly through improvement to **accessibility** to and from the site; and
- support adherence to the government's criteria to improve, the **economy**, health and education.

9.2 TRAVEL PLAN TARGETS

9.2.1 The programme for the introduction of travel plan measures and achieving the overarching targets will be phased over a period of years from the first occupation.

9.2.2 The traffic figures used in the Transport Assessment and Environmental Statement to assess the impact of the proposed development are based on current mode shares being achieved across the whole of the Bicester area.

9.2.3 With the implementation of the sustainable transport measures that will accompany the development, coupled with the additional measures promoted through the Travel Plans, it is considered that a car mode share for journeys associated with the residential, employment and school will reduce. The ultimate mode share targets for these uses are therefore likely to be set at a level below the current Bicester levels.

9.2.4 Whilst the targets should be challenging, it is important they are realistic and achievable in order to maintain the credibility of the Travel Plans. In summary, the targets should be SMART, i.e.

- Specific
- Measurable
- Achievable
- Realistic
- Time-bound

9.3 TRAVEL PLAN IMPLEMENTATION

9.3.1 A Travel Plan Co-ordinator should be appointed during construction and for the initial years as the development expands.

9.3.2 The Travel Plan Co-ordinator will be supplied with an on-site office which could also serve as a travel centre.

9.3.3 The Travel Plan Co-ordinator will set up a Travel Plan Forum for the development with representatives from the developer, local authority, public transport providers, residents association, employers and all interested parties.

9.3.4 The Travel Plan Forum will endorse all travel plan measures, targets and monitoring techniques.

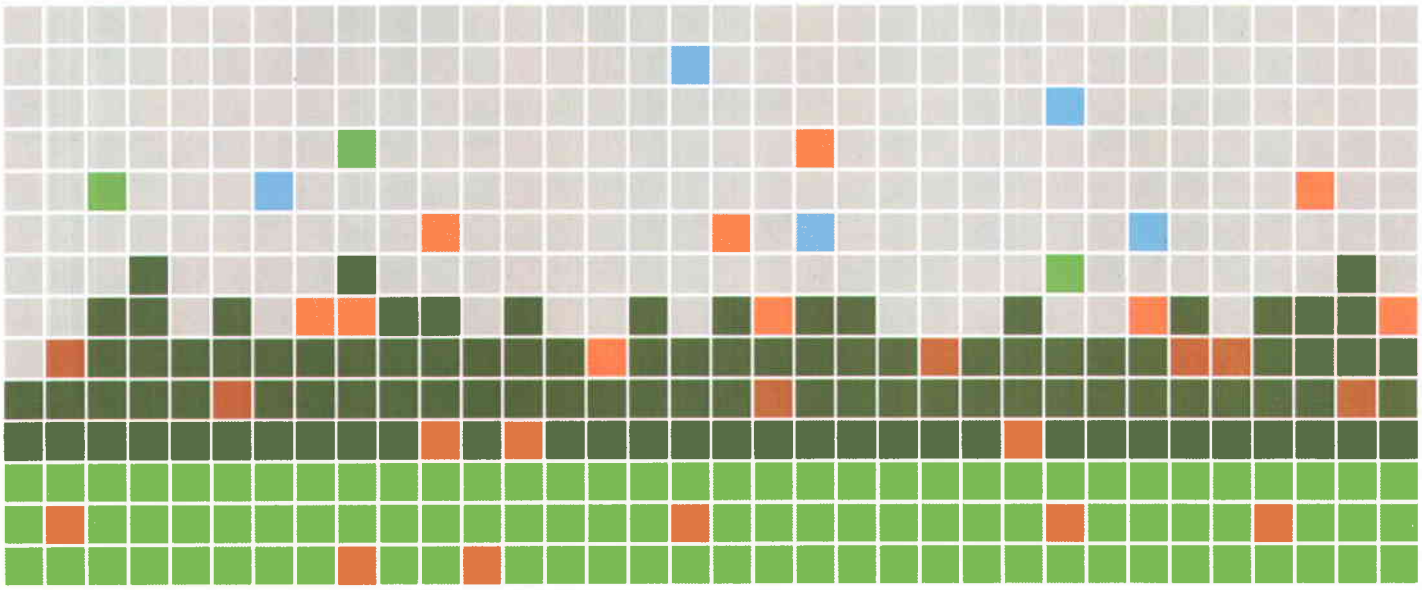
9.3.5 The Travel Plan Co-ordinator will set up distinct Travel Plans for the site – a residents Travel Plan, employers Travel Plan and school Travel Plan.

9.3.6 All travel plan measures will be implemented, co-ordinated and administered by the Travel Plan Co-ordinator with the endorsement of the Travel Plan Forum and assistance from the local authorities.

9.3.7 The Travel Plans will be monitored on an annual basis and where necessary targets and measures will be adjusted to maximise modal shift from the car to sustainable modes.

APPENDIX J

South West Bicester Trip Generation



South West Bicester
Technical Report 1 (Rev D)
Trip Generation, Distribution & Analysis

Countryside Properties (Bicester) Ltd

October 2006

WSP

QM

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Contents

1 Introduction

1.1 CONTEXT

1.1.1 WSP Development Ltd has been appointed by Countryside Properties (Bicester) Ltd to provide transport advice in relation to the proposed residential development at South West Bicester, Bicester.

1.1.2 The proposals for South West Bicester are based on providing a high quality development which would include the provision of 1,585 residential units, approximately 20,000sqm of B1 / B2 employment land, a hotel, a health village, a local centre (including 1,000sqm GFA of employment) and associated amenities, a sports centre, open space and community facilities including two primary schools and secondary school provision.

Table 1.1: South West Bicester Land Uses

Land Use	Quantum
Non Educational Uses	
Residential Units	1,585 units
Employment Use (Local Centre)	1,000 sqm GFA
B1 / B2 Employment Use	20,000 sqm GFA
Hotel	100 Bedrooms
Health Village	3.5 Hectares
Sports Centre	2,323 sqm GFA
Educational Uses	
Primary Schools	630 Pupils
Secondary school provision	650 Pupils

It is considered that the local centre and associated amenities will cater predominantly for residents of the new development. Therefore, for the purposes of this trip generation assessment, their effect has not been evaluated as it is not considered that they would generate significant external vehicular trips.

1.1.3 This Technical Report presents an assessment of the generation of person trips associated with the proposed South West Bicester development.

1.1.4 Section 2 of this Technical Report details the trip generation by the residential element of the proposals while Section 3 outlines the external trips that would be generated by the hotel use.

1.1.5 The trip generation associated with the 1,000 sqm GFA of local employment use is assessed in Section 4 while in Section 5 the externally generated trips generated by the 20,000 sqm GFA of B1 / B2 employment is assessed.

1.1.6 In Section 6 the trips associated with the on-site education provision are identified, while in Section 7 external trips generated by the health village are outlined.

1.1.7 The trip generation associated with the proposed sports centre is detailed in Section 8.

Finally, Section 9 of this technical report presents a summary of the total external trip generation and also identified the zonal distribution of the vehicular trips.

2 Residential Generation

2.1 RESIDENTIAL PERSON TRIP GENERATION

2.1.1 The TRICS database has been interrogated in order to determine the quantum of peak hour vehicle trips that would be generated by the proposed residential development. A range of 'mixed private housing' sites have been selected within England from the TRICS database and have been assessed to derive the peak hour vehicular trip rates shown in Table 2.1 below. Extracts from the TRICS database are attached as Annex A.

Table 2.1: Residential Vehicular Trip Rates and Trips – Gross Generation

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Trip Rate – Vehs / Unit	0.10	0.42	**0.52**	0.39	0.17	**0.56**
Total Trips (Vehs)	159	666	**824**	618	269	**888**

Source: TRICS database

2.1.2 Based on the above, the 1,585 dwelling residential development is predicted to generate 824 and 888 vehicle trips during the morning and evening peak hours respectively.

2.1.3 The TRICS database is considered to be suitable for forecasting the quantum of vehicular trips generated by the proposed development. However, use has been made of National Travel Survey (NTS) data in order to establish the typical mode share of residential journeys, to determine the quantum of non-car and car passenger trips.

2.1.4 Using the NTS data (extracts attached as Annex B), it can be established that car driver trips presently comprise 39% of all morning peak hour trips. The corresponding figure during the evening peak hour is 49%. The existing mode share obtained from NTS data is summarised in Table 2.2 below.

Table 2.2: Mode Share of Residential Trips

Mode of Travel	AM Peak Hour	PM Peak Hour
Non-Car	43%	30%
Car Driver	39%	49%
Car Passenger	18%	21%
Total	**100%**	**100%**

Source: NTS Data

2.1.5 The mode share percentages shown in Table 2.2 have been applied to the vehicular trip generation in order to factor-up the vehicle trips to represent the total person trip generation of the residential development (see Table 2.3). It is important to note that the number of car drivers does not reduce as a result of this adjustment.

Table 2.3: Total Residential Person Trips – Gross Generation

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	175	734	909	378	165	543
Car Driver	159	666	824	618	269	888
Car Passenger	73	307	380	265	115	380
Total	**406**	**1,707**	**2,113**	**1,262**	**550**	**1,811**

2.2 ALLOWANCE FOR AFFORDABLE HOUSING

2.2.1 The residential element of the proposed development is likely to comprise approximately 30% affordable units. Analysis of the TRICS database indicates that peak hour trips attributable to affordable units in England are approximately 30% lower than private housing trip rates. This correlates well with information contained within the National Travel Survey (NTS) which indicates that housing occupants on lower incomes generate approximately 20% fewer person trips. Relevant extracts of the TRICS and NTS data are attached as Annex C.

2.2.2 Based on the above, it is considered appropriate to reduce the residential trips generated by the affordable element of the units by 25%. Therefore, it can be demonstrated that the proposed development would generate some 7.5% fewer person trips than if it were wholly market housing.

$$[(0.70 \times 1.0) + (0.30 \times 0.75)] = 0.925$$

2.2.3 Table 2.4 shows the number of person trips that would be generated by the residential component of the development, accounting for the element of affordable housing that would be promoted.

Table 2.4: Total Residential Person Trips – Allowing for Affordable Units

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	162	679	841	350	153	503
Car Driver	147	616	762	572	249	821
Car Passenger	68	284	352	245	107	352
Total	**376**	**1,579**	**1,955**	**1,167**	**509**	**1,676**

2.3 ALLOWANCE FOR COMMUTING JOURNEYS MODE SHIFT

2.3.1 It is anticipated that a proportion of the new residents would gain work at the proposed on-site employment and neighbouring land, to the east of the A41. Analysis of NTS data, presented within Annex D, indicates that 36% of morning peak hour trips are for employment purposes. The corresponding proportion of commuting trips during the evening peak hour is 41%.

2.3.2 Surveys undertaken in a range of mixed-use settlements in England demonstrate that for new developments, approximately 10% of financially active adults work and live in the same development. The same surveys identified a significantly higher proportion (24%) of internal employment trips in more established mixed-use areas. Extracts of the survey data is attached as Annex E.

2.3.3 There are two immediate employment areas available to the new residents, 20,000sqm within the proposed development and an additional 60,000sqm on neighbouring land. The available on-site employment will result in a reduction in external trips and, whilst it is acknowledged that the neighbouring employment development would be external to the site, it is considered that its close proximity would result in a higher number of trips being made by non-car modes.

2.3.4 In order to reflect the level of mode shift that is likely to be achieved at the proposed development, it is considered that 17% of the residential trips for employment purposes (the average of the mixed use development surveyed figures) would shift to non-car modes of transport. This equates to a mode shift of 6.1% of the morning peak trips by car and 7.0% of the evening peak hour trips by car. These trips have been apportioned to the car passenger and non-car modes based on their existing proportions. Tables 2.5 and 2.6 show the mode shift for the on-site and neighbouring employment respectively, while Table 2.7 shows the total mode shift for the new residents.

Table 2.5: Commuting Mode Shift to On-Site Employment

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	3	14	17	14	6	20
Car Driver	-2	-9	-12	-10	-4	-14
Car Passenger	-1	-4	-5	-4	-2	-6
Total	**0**	**0**	**0**	**0**	**0**	**0**

Table 2.6: Commuting Mode Shift to Neighbouring Employment

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	10	41	51	43	19	61
Car Driver	-7	-28	-35	-30	-13	-43
Car Passenger	-3	-13	-16	-13	-6	-18
Total	**0**	**0**	**0**	**0**	**0**	**0**

Table 2.7: Allowance for Commuting Mode Shift

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	+13	+55	+68	+57	+25	+82
Car Driver	-9	-38	-47	-40	-17	-57
Car Passenger	-4	-17	-22	-17	-7	-25
Total	**0**	**0**	**0**	**0**	**0**	**0**

2.4 ALLOWANCE FOR INTERNAL EDUCATION TRIPS

2.4.1 As stated in Section 1 of this Technical Report, primary and secondary education provision will be incorporated into the development. Therefore, as the person trips illustrated in Table 2.4 include trips to schools, this element needs to be discounted when deriving the total number of trips that would be external to the development.

2.4.2 Analysis of NTS data (attached as Annex D) indicates that approximately 43% of morning peak hour trips and 4% of evening peak hour trips are likely to be for educational purposes. A further breakdown of the education shows that primary schools account for 45% of all education trips, while secondary and tertiary education account for 35% and 20% respectively. Therefore the proposed education trips for the site equate to 542 and 43 trips during the morning and evening peak hours respectively.

2.4.3 The mode share of these trips has been established using NTS data (extracts attached as Annex F) in order to reflect the typical mode share of primary and secondary trips.

2.4.4 It should be noted that the proposed secondary school provision will only provide facilities for pupils of 14 to 19 years. Consequently, secondary pupils between 11 and 14 years will be required to use off-site secondary schools. It has therefore been assumed that the on-site secondary provision will cater for 5/9ths of secondary education trips, while the remaining 4/9ths will go to external secondary schools.

2.4.5 Tables 2.8 and 2.9 show the resultant mode shift for primary and secondary education.

Table 2.8: Allowance for Internal Primary School Trips

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	-33	-138	-171	-10	-4	-14
Car Driver	-16	-67	-83	-5	-2	-7
Car Passenger	-24	-100	-124	-7	-3	-10
Total	**-73**	**-306**	**-378**	**-21**	**-9**	**-30**

Table 2.9: Allowance for Internal Secondary School Trips

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	-12	-52	-64	-4	-2	-5
Car Driver	-2	-9	-11	-1	0	-1
Car Passenger	-3	-13	-16	-1	0	-1
Total	**-17**	**-73**	**-91**	**-5**	**-2**	**-7**

2.4.6 Given that these trips will remain internal to the development, Table 2.10 shows the total reduction in the external residential trips.

Table 2.10: Allowance for Internal Trips to Schools

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	-45	-190	-235	-13	-6	-19
Car Driver	-18	-75	-93	-5	-2	-7
Car Passenger	-27	-113	-140	-8	-3	-11
Total	-90	-379	-469	-26	-11	-37

2.5 EXTERNAL RESIDENTIAL TRIPS

2.5.1 Table 2.11 shows the total number of external person trips that would be generated by the residential development at South West Bicester , derived by applying the allowances for the mode shift of commuting trips (Table 2.7) and the internalisation of school trips (Table 2.10) to the to the total residential person trips (Table 2.4).

Table 2.11: External Residential Person Trips

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	129	544	673	394	172	566
Car Driver	120	503	622	527	230	756
Car Passenger	37	154	190	220	96	316
Total	**286**	**1200**	**1486**	**1141**	**497**	**1638**

2.5.2 The resultant external car driver trip rates correspond to 0.39 and 0.48 vehs / unit during the morning and evening peak hours respectively.

3 Hotel Generation

3.1 HOTEL PERSON TRIP GENERATION

3.1.1 The proposed development will comprise up to 100 bedrooms. This equates to approximately 7,000 sqm GFA of hotel use.

3.1.2 The TRICS database has been interrogated to determine the vehicular trip rates attributable to this land use. However, as the TRICS database does not hold any multi-modal data on hotels, the TRAVL database has been used to establish the total person trip generation and hence the derivation of the non-car trip rates.

3.1.3 Table 3.1 illustrates the peak hour trip rates for the hotel use within the proposed development while relevant extracts from the TRICS and TRAVL databases are attached as Annex G. It should be noted that an occupancy rate of 1.25 has been used to calculate the passenger trip rate.

Table 3.1: Hotel Person Trip Rates

Trips per 100 sqm GFA	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	0.00	0.32	0.31	0.35	0.21	0.57
Car Driver	0.32	0.35	0.67	0.36	0.27	0.63
Car Passenger	0.08	0.09	0.17	0.09	0.07	0.16
Total	**0.40**	**0.76**	**1.15**	**0.80**	**0.55**	**1.36**

Source: TRICS and TRAVL databases

3.1.4 Table 3.2 shows the number of person trips that would be generated by the hotel, derived by applying the trip generation rates to the quantum of hotel floor space proposed.

Table 3.2: Hotel Person Trips

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	0	23	22	25	15	40
Car Driver	22	25	47	25	19	44
Car Passenger	6	6	12	6	5	11
Total	**28**	**53**	**81**	**56**	**39**	**95**

4 Local Centre Employment Generation

4.1 EMPLOYMENT TRIP GENERATION

4.1.1 The forecast vehicular trip generation of the 1,000 sqm GFA of local employment use has been taken from English business park sites contained in the TRICS database. It is considered that this will provide a fair assessment of the likely vehicular trip generation of the proposed employment uses within the local centre, given the accessibility of this part of the site by foot, cycle and public transport.

4.1.2 The resultant vehicular trips are shown in Table 4.1 while full details of the TRICS outputs are attached as Annex H.

Table 4.1: Local Employment Vehicular Trip Rates and Trips – Gross Generation

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Trip Rate – Vehs/100sqm	1.42	0.12	1.54	0.12	1.09	1.21
Total Trips (Vehs)	**14**	**1**	**15**	**1**	**11**	**12**

Source: TRICS database

4.1.3 Based on the above, the 1,000 sqm employment development would generate a total of 15 vehicle trips during the morning peak hour. The corresponding number of vehicle trips during the evening peak hour is predicted to be 12.

4.1.4 In order to establish the total person trip generation of the employment development, 2001 Census data for employment journeys that have a destination within Bicester has been used to establish the number of trips that would be generated by other modes of travel. As can be seen from Table 4.2, car drivers account for 68% of all employment person trips.

Table 4.2: Mode Share of Local Employment Trips

Mode of Travel	Percentage Share
Non-Car	24%
Car Driver	68%
Car Passenger	8%
Total	**100%**

Source: 2001 Census

4.1.5 Table 4.3 summarises the number of person trips that would be generated by the proposed employment development, derived by factoring-up the vehicle trips to represent person trips by all modes of travel. It is important to note that the number of car drivers does not reduce as a result of this adjustment.

Table 4.3: Total Local Employment Person Trips – Gross Generation

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	5	0	5	0	4	4
Car Driver	14	1	15	1	11	12
Car Passenger	2	0	2	0	1	1
Total	**21**	**2**	**23**	**2**	**16**	**18**

4.2 ALLOWANCE FOR REDUCED CAR PARKING PROVISION

4.2.1 It is important to note that the resultant person trips shown in Table 4.3 are derived using vehicular trip rates associated with existing employment developments that have been operational for some time and do not therefore reflect the benefits of local and national polices aimed at reducing car use. The effect of these polices is difficult to quantify. However, one area which can be examined is the relationship between the provision of on-site car parking spaces and the vehicular mode share.

4.2.2 The sites within the TRICS database used to derive the vehicular trip rate reflect a parking provision of one space per 27 sqm whereas, in accordance with current local and national policy, parking at the proposed development is likely to be at a rate no greater than one space per 30 sqm. Indeed, given that the employment development is likely to incorporate a mix of employment uses (which will result in a lower number of spaces per GFA), the overall parking provision is likely to be between 1 space per 30 sqm and 1 space per 50 sqm. Therefore, for the purposes of this assessment, an overall provision of 1 space per 35 sqm has been applied.

4.2.3 It is considered that the reduced parking provision at the development will induce a proportionate mode shift away from car use when compared to sites within the TRICS database that exhibit higher parking provisions.

4.2.4 Therefore, a mode shift of 30% [(35-27) / 27] away from car drivers has been applied in order to reflect the reduced parking provision that will be provided. These trips have been apportioned onto the other modes of travel, including car passengers, based on the existing proportions (Table 4.4 refers).

Table 4.4: Total Local Employment Person Trips Allowing for Reduced Car Parking

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	+3	0	+3	0	+2	+2
Car Driver	-4	0	-4	0	-3	-3
Car Passenger	+1	0	+1	0	+1	+1
Total	**0**	**0**	**0**	**0**	**0**	**0**

4.2.5 Table 4.5 shows the resultant mode share of the total person trips which would be generated by the on-site local centre employment uses, derived by applying the allowance for reduced parking provision (Table 4.4) to the total trips (Table 4.3).

Table 4.5: Total Local Employment Person Trips Allowing for Reduced Car Parking

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	8	1	9	1	6	7
Car Driver	10	1	11	1	8	9
Car Passenger	3	0	3	0	2	2
Total	**21**	**0**	**23**	**2**	**16**	**18**

5 On Site Employment Generation

5.1 EMPLOYMENT TRIP GENERATION

5.1.1 The forecast vehicular trip generation of the 20,000 sqm GFA of B1 / B2 employment use has been taken from English business park sites contained in the TRICS database. It is considered that this will provide a fair assessment of the likely vehicular trip generation of the proposed employment uses within the South West Bicester development, particularly given that these employment uses will be located adjacent to the existing high quality and frequent bus services along the A41 corridor.

5.1.2 The resultant vehicular trips are shown in Table 5.1 while full details of the TRICS outputs are attached as Annex H.

Table 5.1: B1 / B2 Employment Vehicular Trip Rates and Trips – Gross Generation

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Trip Rate – Vehs/100sqm	1.42	0.12	1.54	0.12	1.09	1.21
Total Trips (Vehs)	**284**	**24**	**308**	**24**	**218**	**242**

Source: TRICS database

5.1.3 Based on the above, the 20,000 sqm of B1 / B2 employment development would generate a total of 308 vehicle trips during the morning peak hour. The corresponding number of vehicle trips during the evening peak hour is predicted to be 242.

5.1.4 In order to establish the total person trip generation of the employment development, 2001 Census data for employment journeys that have a destination within Bicester has been used to establish the number of trips that would be generated by other modes of travel. As can be seen from Table 5.2, car drivers account for 68% of all employment person trips.

Table 5.2: Mode Share of B1 / B2 Employment Trips

Mode of Travel	Percentage Share
Non-Car	24%
Car Driver	68%
Car Passenger	8%
Total	**100%**

Source: 2001 Census

5.1.5 Table 5.3 summarises the number of person trips that would be generated by the proposed B1 / B2 employment development, derived by factoring-up the vehicle trips to represent person trips by all modes of travel. It is important to note that the number of car drivers does not reduce as a result of this adjustment.

Table 5.3: Total B1 / B2 Employment Person Trips – Gross Generation

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	100	8	109	8	77	85
Car Driver	284	24	308	24	218	242
Car Passenger	33	3	36	3	26	28
Total	**418**	**35**	**453**	**35**	**321**	**356**

5.2 ALLOWANCE FOR REDUCED CAR PARKING PROVISION

5.2.1 It is important to note that the resultant person trips shown in Table 5.3 are derived using vehicular trip rates associated with existing employment developments that have been operational for some time and do not therefore reflect the benefits of local and national polices aimed at reducing car use. The effect of these polices is difficult to quantify. However, one area which can be examined is the relationship between the provision of on-site car parking spaces and the vehicular mode share.

5.2.2 The sites within the TRICS database used to derive the vehicular trip rate reflect a parking provision of one space per 27 sqm whereas, in accordance with current local and national policy, parking at the proposed development is likely to be at a rate no greater than one space per 30 sqm. Indeed, given that the employment development is likely to incorporate a mix of employment uses (which will result in a lower number of spaces per GFA), the overall parking provision is likely to be between 1 space per 30 sqm and 1 space per 50 sqm. Therefore, for the purposes of this assessment, an overall provision of 1 space per 35 sqm has been applied.

5.2.3 It is considered that the reduced parking provision at the development will induce a proportionate mode shift away from car use when compared to sites within the TRICS database that exhibit higher parking provisions.

5.2.4 Therefore, a mode shift of 30% [(35-27) / 27] away from car drivers has been applied in order to reflect the reduced parking provision that will be provided. These trips have been apportioned onto the other modes of travel, including car passengers, based on the existing proportions (Table 5.4 refers).

Table 5.4: Total B1 / B2 Employment Person Trips Allowing for Reduced Car Parking

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	+63	+5	+68	+5	+48	+54
Car Driver	-84	-7	-91	-7	-65	-72
Car Passenger	+21	+2	+23	+2	+16	+18
Total	**0**	**0**	**0**	**0**	**0**	**0**

5.2.5 Table 5.5 shows the resultant mode share of the total person trips which would be generated by the on-site employment use, derived by applying the allowance for reduced parking provision (Table 5.4) to the total trips (Table 5.3).

Table 5.5: Total B1 / B2 Employment Person Trips Allowing for Reduced Car Parking

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	163	14	177	14	125	139
Car Driver	200	17	217	17	153	170
Car Passenger	54	5	59	5	42	46
Total	**418**	**35**	**453**	**35**	**321**	**356**

5.3 ALLOWANCE FOR EMPLOYMENT MODE SHIFT

5.3.1 Due to the close proximity of the new residential element of the South West Bicester development, a proportion of the B1 / B2 employment will be satisfied by its future residents. Section 2 (Table 2.5) of this report identifies the likely mode shift in commuting trips that is likely to occur because of the immediate proximity of the new residents. Table 5.6 shows the resultant mode shift as described in Section 2.

Table 5.6: Allowance for B1 / B2 Employment Mode Shift

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	+14	+3	+17	+6	+14	+20
Car Driver	-9	-2	-12	-4	-10	-14
Car Passenger	-4	-1	-5	-2	-4	-6
Total	**0**	**0**	**0**	**0**	**0**	**0**

5.4 EXTERNAL EMPLOYMENT TRIPS

5.4.1 Table 5.7 shows the total number of external trips that will be generated by the proposed on site employment. These figures have been derived by applying the reductions due to mode shift of employment (Table 5.6) to the total employment trips (Table 5.5).

Table 5.7: External B1 / B2 Employment Person Trips

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	177	17	194	20	140	160
Car Driver	190	15	205	13	143	156
Car Passenger	50	4	54	3	38	40
Total	**418**	**35**	**453**	**35**	**321**	**356**

5.4.2 The resulting car driver trip rates correspond to 1.03 and 0.78 vehs / 100sqm GFA during the morning and evening hours respectively.

6 School Generation

6.1 PUPIL TRIP GENERATION

6.1.1 The proposed development includes the provision of two primary schools and secondary school provision for pupils between 14 and 19 years.

6.1.2 It is understood that the primary schools will accommodate a total of 630 pupils while the secondary school provision will cater for a further 650 pupils.

6.1.3 Therefore, it can be seen that the total education facilities provided on the South West Bicester site will attract a total of 1,280 pupils.

6.1.4 Using pupil yield factors a comparison of 0.25 pupils per dwelling (primary) and 0.20 pupils per dwelling (secondary), it can be seen that the proposed South West Bicester development could generate for a total of 713 pupils.

6.1.5 As stated in Section 2, the proposed secondary school provision has been assumed to provide facilities for 5/9ths of the secondary education age groups. Consequently, given that the proposed primary schools will accommodate all predicted primary pupils associated with new residents, the South West Bicester Development will generate a total of 572 pupils (396 primary pupils and 176 secondary pupils) to the proposed on-site education facilities. Therefore, 55% of the pupils at the proposed schools will travel from outside of the development.

6.1.6 As Table 2.10 illustrates, the 572 pupils on the South West Bicester development would generate a total of 469 and 37 person trips during the morning and evening peak hour. Therefore, on a pro-rata basis, the remaining 708 pupils which would originate from outside of the site will generate a further 580 and 46 trips during the respective peak hours.

6.1.7 Table 6.1 depicts these externally generated trips. The mode share has been established using NTS data (extracts attached as Annex F) in order to reflect the typical mode share of primary and secondary education trips.

Table 6.1: Externally Generated (by Pupils) Education Trips

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	235	56	291	7	16	23
Car Driver	93	22	116	3	6	9
Car Passenger	140	33	173	4	10	14
Total	**468**	**112**	**580**	**14**	**32**	**46**

6.1.8 In order to ensure a robust assessment, the trips in the above table make no allowance for any student absences.

6.2 STAFF TRIP GENERATION

6.2.1 Using data contained within the TRICS database it can be established that, on average, one full time equivalent member of staff is required for every 12 pupils. Therefore, a total of 107 staff are likely to be employed within the primary and secondary establishments in order to cater for the 1,280 pupils.

6.2.2 Again, using information within the TRICS database it can be demonstrated that 75% of trips in the morning period (0700-1000) occur during the 0800 to 0900 peak hour. Similarly, 20% of trips during the afternoon period (1500 to 1800) occur during the 1700 to 1800 peak hour.

6.2.3 Based on the above it can be established that 81 and 21 staff trips will be generated during the 0800-0900 and 1700-1800 peak hours.

6.2.4 Table 6.2 summarises these trips. The trips have been attributed to each mode of travel by applying the mode share for employment trips established from 2001 census data for Bicester (summarised in Table 4.2).

Table 6.2: Externally Generated (by Staff) Education Trips

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	14	0	14	0	4	4
Car Driver	64	0	64	0	17	17
Car Passenger	3	0	3	0	1	1
Total	**81**	**0**	**81**	**0**	**21**	**21**

6.3 TOTAL EDUCATION TRIP GENERATION

6.3.1 Table 6.3 shows the total external trip generation for the proposed educational uses on the South West Bicester development site, derived by combining the pupil (Table 6.1) and staff (Table 6.2) trip generations.

Table 6.3: Total Externally Generation Education Trips

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	249	56	305	7	20	27
Car Driver	157	22	180	3	23	26
Car Passenger	143	33	177	4	10	15
Total	**549**	**112**	**661**	**14**	**54**	**68**

7 Health Centre Generation

7.1 DEVELOPMENT PROPOSALS

7.1.1 The proposed health village will be located in the north eastern corner of the site, adjacent to Middleton Stoney Road, covering an area of approximately 3.5 hectares. Whilst the final uses for the site will need to be determined by the local health authority, it is currently considered that the following mix of health uses could be provided within this site:

- Nursing Home – approximately 80 beds / residents;
- Doctors Surgery – approximately 8.5 full time equivalent staff;
- GP Medical Centre – approximately 26 full time equivalent staff;
- Diagnostic Clinic – approximately 15 full time equivalent staff;
- Community Hospital – approximately 30 beds.

7.1.2 Given the intended uses within the health village, it is anticipated that the majority of visitors would be residents of the proposed South West Bicester development and other local residents, who would be within reasonable walking and cycling distance. Furthermore, the facilities are located adjacent to the Middleton Stoney Road and A4421 Oxford Road corridors and are therefore highly accessible in relation to existing bus services.

7.1.3 Consequently, it is likely that a large proportion of person trips associated with these uses would be undertaken by non-car modes. In this respect, the vehicular trip generation for the proposed health village has been derived by determining the overall number of person trips and then applying an appropriate vehicular mode share, based on the location and accessibility of the health village.

7.2 PERSON TRIP GENERATION

7.2.1 The forecast person trip generation of the health village has been taken from appropriate multi-modal sites in the TRICS database. The resultant vehicular trip rates are shown in Table 7.1, while full details of the TRICS outputs are attached as Annex I.

Table 7.1: Health Village Person Trip Rates

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Nursing Home (per bed)	0.09	0.06	0.15	0.06	0.08	0.14
Doctors Surgery (per FTE staff)	1.71	0.88	2.59	1.14	1.59	2.73
GP Medical Centre (per FTE staff)	1.71	0.88	2.59	1.14	1.59	2.73
Diagnostic Clinic (per FTE staff)	1.18	0.41	1.59	0.66	1.00	1.66
Community Hospital (per bed)	1.16	0.24	1.40	0.42	0.98	1.40

7.2.2 The person trip rates shown in Table 7.1 have then been multiplied by the anticipated quantum of each health village use, as detailed in paragraph 7.1.1, to derive the total person trips shown in Table 7.2.

Table 7.2: Health Village Person Trip Generation

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Nursing Home (per bed)	7	5	12	5	6	11
Doctors Surgery (per FTE staff)	15	7	22	10	14	23
GP Medical Centre (per FTE staff)	44	23	67	30	41	71
Diagnostic Clinic (per FTE staff)	18	6	24	10	15	25
Community Hospital (per bed)	35	7	42	13	29	42
Total Person Trips	**119**	**49**	**167**	**67**	**106**	**172**

7.2.3 As can be seen from Table 7.2, the proposed health village is predicted to generate 167 and 172 two-way person trips during the morning and evening peak hours respectively.

7.3 VEHICULAR TRIP GENERATION

7.3.1 In order to derive the predicted car driver and car passenger trips associated with the proposed health village, an appropriate vehicular mode share and car occupancy has then been applied to the total person trips.

7.3.2 As described in paragraph 7.1.2, it is anticipated that a large proportion of person trips associated with the proposed health village would be undertaken by non-car modes. Consequently, given the site's accessibility, it is considered that an overall car mode share (car driver and passenger) of 70% will provide a robust assessment of the potential car person trips associated with the health village. In order to derive the split of car drivers and car passengers, it has been assumed that car trips associated with the health village uses would have an occupancy of 1.2 persons per vehicle. This is considered to provide an appropriate balance between staff and visitor.

7.3.3 Based on the above assumptions, Table 7.3 provides a breakdown of the predicted person trips by car and non-car modes.

Table 7.3: External Health Village Trip Generation

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	36	15	50	20	32	51
Car Driver	69	28	98	39	62	100
Car Passenger	14	6	19	8	12	21
Total Person Trips	**119**	**49**	**167**	**67**	**106**	**172**

7.3.4 From Table 7.3, it can be seen that the health village would generate 98 and 100 two-way vehicular trips during the morning and evening peak hours respectively. To provide a robust assessment, it is assumed these would all be external person trips.

8 Sports Centre Generation

8.1 SPORTS CENTRE PERSON TRIP GENERATION

8.1.1 The proposed development will comprise up to 2,323 sqm GFA of sports centre.

8.1.2 The TRICS database has been interrogated to determine the multi-modal trip rates attributable to this land use. Multi-modal trips rates for pedestrians, cyclists, bus users, vehicles and vehicle occupants have been obtained. The car passenger trip rates have been derived by obtaining the difference between the number of vehicle occupants and the number of vehicles, whilst the number of car drivers equates to the number of vehicles.

8.1.3 Table 8.1 illustrates the peak hour trip rates for the sports centre use within the proposed development while relevant extracts from the TRICS database are attached as Annex J.

Table 8.1: Sports Centre Person Trip Rates

Trips per 100 sqm GFA	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car (bus, walk, cycle)	0.32	0.18	0.5	0.37	0.36	0.73
Car Driver	0.53	0.53	1.06	1.02	0.9	1.92
Car Passenger	0.2	0.1	0.3	0.47	0.81	1.28
Total	**1.05**	**0.81**	**1.86**	**1.86**	**1.71**	**3.93**

Source: TRICS databases

8.1.4 Table 8.2 shows the number of person trips that would be generated by the sports centre, derived by applying the trip generation rates to the quantum of sports centre floor space proposed.

Table 8.2: Sports Centre Person Trips

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	7	4	11	9	8	17
Car Driver	12	12	25	24	21	45
Car Passenger	5	2	7	11	19	30
Total	**24**	**18**	**43**	**44**	**48**	**91**

9 Total South West Bicester Generation

9.1 CUMULATIVE TRIP GENERATION

9.1.1 Tables 9.1 and 9.2 present the total external person trip generation for the South West Bicester development, derived by combining the external residential (Table 2.11), hotel (Table 3.2), local employment (Table 4.5), B1 / B2 employment (Table 5.7) and education (Table 6.3), health village (Table 7.3) and sports centre (Table 8.2) trip generation forecasts.

Table 9.1: South West Bicester External Trip Generation – AM Peak Hour (0800-0900)

Mode of Travel	Non Educational Uses			Educational Uses			Total		
	In	Out	Total	In	Out	Total	In	Out	Total
Non-Car	358	603	962	249	56	305	607	659	1266
Car Driver	424	583	1007	157	22	180	581	605	1186
Car Passenger	114	172	286	143	33	177	257	205	462
Total	**896**	**1358**	**2254**	**549**	**112**	**661**	**1445**	**1470**	**2915**

Note: Minor discrepancies due to rounding

Table 9.2: South West Bicester External Trip Generation – PM Peak Hour (1700-1800)

Mode of Travel	Non Educational Uses			Educational Uses			Total		
	In	Out	Total	In	Out	Total	In	Out	Total
Non-Car	468	373	841	7	20	27	475	393	867
Car Driver	628	483	1111	3	23	26	631	506	1137
Car Passenger	248	171	420	4	10	15	253	182	434
Total	**1344**	**1027**	**2371**	**14**	**54**	**68**	**1358**	**1080**	**2438**

Note: Minor discrepancies due to rounding

9.2 TRIP DISTRIBUTION & ASSIGNMENT

9.2.1 The forecast vehicular trips have been distributed in accordance with zonal distributions derived from the 2001 Journey to Work census. Data relating to commuting trips originating within all wards within Bicester has been averaged in order to derive the vehicular distribution for both the residential and employment for the South West Bicester development trips. The resultant zonal distribution are summarised in Table 9.3 and 9.4 while Figure 1 illustrates the depiction of the areas covered by each of the zones.

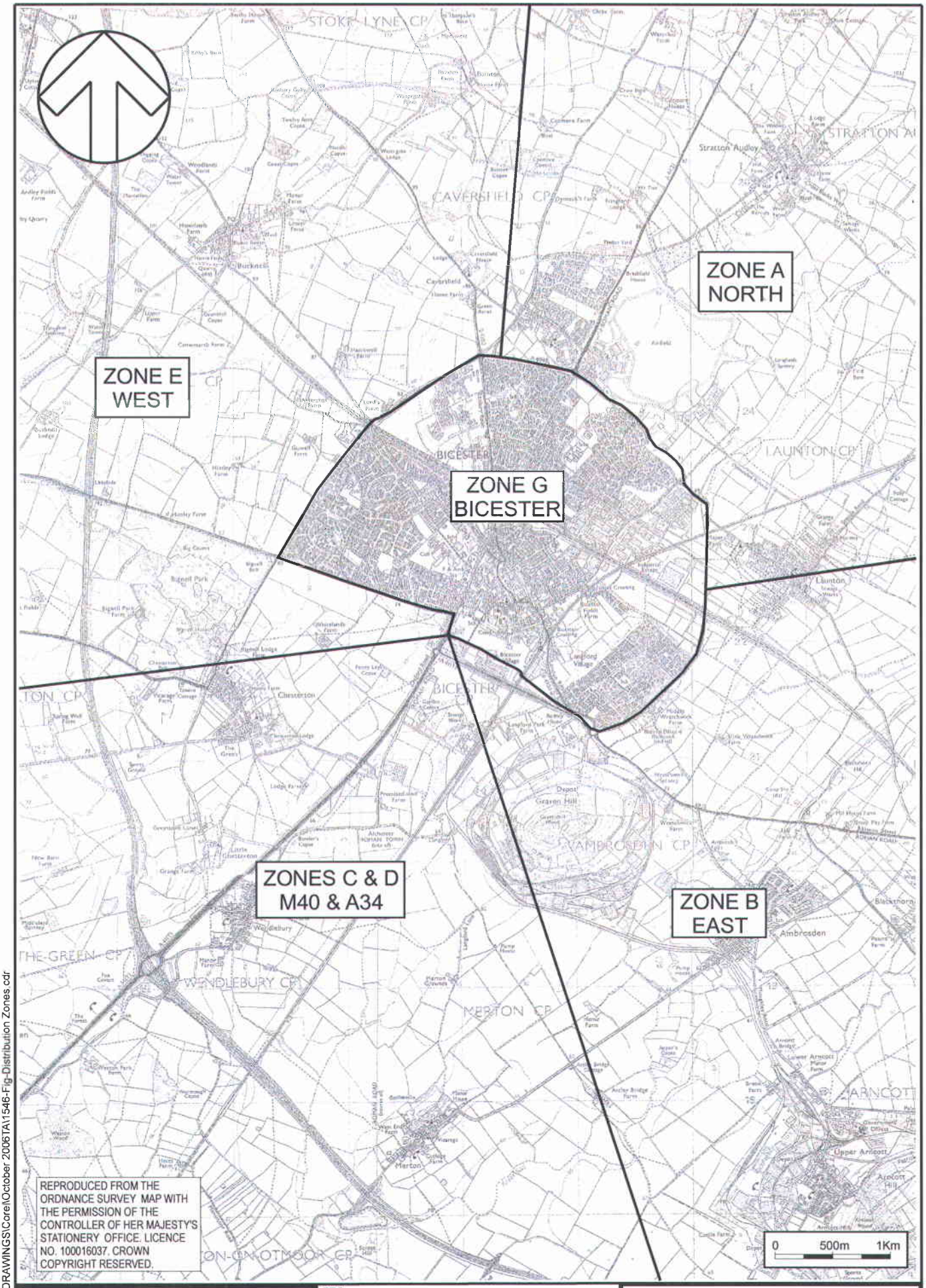
Table 9.3: Residential Vehicular Trip Distribution

Area	Percentage Distribution
Bicester	25.8%
North	4.8%
East	7.6%
South (M40)	12.6%
South (A34)	46.3%
West	3.0%
Total	**100%**

Table 9.4: Employment Vehicular Trip Distribution

Area	Percentage Distribution
Bicester	40.8%
North	8.3%
East	11.4%
South (M40)	2.9%
South (A34)	32.5%
West	4.1%
Total	**100%**

Figure 1 Zonal Distribution



WSP

TITLE:

DISTRIBUTION ZONES

FIGURE No:

1

N:\South West Bicester\DRAWINGS\Core\October 2006\TA\1546-Fig-Distribution Zones.cdr

Annex A Residential Trip Rates

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : K - MIXED PRIVATE HOUSING

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	13 days
	HF	HERTFORDSHIRE	1 days
	WS	WEST SUSSEX	5 days
05	**EAST MIDLANDS**		
	NT	NOTTINGHAMSHIRE	4 days
06	**WEST MIDLANDS**		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
	WK	WARWICKSHIRE	1 days
	WO	WORCESTERSHIRE	3 days

Main parameter selection:

Parameter: Number of households
Range: 26 to 1165 (units:)

Date Range: 01/01/96 to 03/06/03

Selected survey days:

Monday	1 days
Tuesday	6 days
Wednesday	2 days
Thursday	13 days
Friday	8 days

Selected survey types:

Manual count	17 days
Directional ATC Count	13 days

Optional parameter selection:

Use Class:

C3	30 days

Location:

Neighbourhood Centre	5 days
Edge of Town	22 days
Edge of Town Centre	3 days

Population within 1 mile:

1,001 to 5,000	6 days
5,001 to 10,000	3 days
10,001 to 15,000	14 days
15,001 to 20,000	5 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days

Optional parameter selection (Cont.):

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	3 days
75,001 to 100,000	16 days
100,001 to 125,000	2 days
125,001 to 250,000	2 days
250,001 to 500,000	5 days
500,001 or More	1 days

Car ownership within 5 miles:

0.5 or Less	2 days
0.6 to 1.0	5 days
1.1 to 1.5	22 days
1.6 to 2.0	1 days

Buses/Trains per day (both directions):

Frequency	*Per Hour*	*Per Day*	*Surveys*
Not Known			0 days
0	0	0	1 days
<20 per day	1	20	1 days
20-39 per day	2	40	0 days
40-59 per day	3	60	5 days
60-79 per day	4	80	1 days
80+ per day	> 4	> 80	22 days

LIST OF SITES relevant to selection parameters

1 **ES-03-K-01** **MIXED HOUSING, LEWES** **EAST SUSSEX**
OLD MALLING WAY
SOUTH MALLING
LEWES
Total Number of households: 491 ******
Survey date: THURSDAY *29/03/01* *Survey Type: MANUAL*

2 **HC-03-K-04** **PORTSMOUTH HOUSING** **HAMPSHIRE**
ST GEORGES ROAD

PORTSMOUTH
Total Number of households: 150 ******
Survey date: THURSDAY *11/12/97* *Survey Type: MANUAL*

3 **HC-03-K-05** **PORTSMOUTH HOUSING** **HAMPSHIRE**
BROAD STREET

PORTSMOUTH
Total Number of households: 64 ******
Survey date: THURSDAY *18/12/97* *Survey Type: MANUAL*

4 **HC-03-K-08** **FLEET HOUSING** **HAMPSHIRE**
ANCELLS ROAD
ANCELLS FARM
FLEET
Total Number of households: 747 ******
Survey date: THURSDAY *05/03/98* *Survey Type: MANUAL*

5 **HC-03-K-09** **WINCHESTER HOUSING** **HAMPSHIRE**
RIDGEWAY/MEADOW W.
BADGER FARM
WINCHESTER
Total Number of households: 1040 ******
Survey date: THURSDAY *26/02/98* *Survey Type: MANUAL*

6 **HC-03-K-10** **EASTLEIGH HOUSING** **HAMPSHIRE**
KNIGHTWOOD ROAD
BADGER'S COPSE
EASTLEIGH
Total Number of households: 700 ******
Survey date: WEDNESDAY *18/08/99* *Survey Type: MANUAL*

7 **HC-03-K-11** **WINCHESTER HOUSING** **HAMPSHIRE**
RIDGEWAY/MEADOW W.
BADGER FARM
WINCHESTER
Total Number of households: 1040 ******
Survey date: THURSDAY *09/03/00* *Survey Type: DIRECTIONAL*
Survey date: FRIDAY *10/03/00* *Survey Type: DIRECTIONAL*
Survey date: THURSDAY *15/06/00* *Survey Type: DIRECTIONAL*
Survey date: FRIDAY *16/06/00* *Survey Type: DIRECTIONAL*
Survey date: THURSDAY *21/09/00* *Survey Type: DIRECTIONAL*
Survey date: FRIDAY *22/09/00* *Survey Type: DIRECTIONAL*
Survey date: THURSDAY *07/12/00* *Survey Type: DIRECTIONAL*
Survey date: FRIDAY *08/12/00* *Survey Type: DIRECTIONAL*

LIST OF SITES relevant to selection parameters (Cont.)

8 **HF-03-K-01** **MIXED PRI. HOUSING,WELWYN GC** **HERTFORDSHIRE**
LONGCROFT GARDENS

WELWYN GARDEN CITY
Total Number of households: 53 ******
Survey date: FRIDAY *06/09/02* *Survey Type: MANUAL*

9 **NT-03-K-02** **NEWARK HOUSING** **NOTTINGHAMSHIRE**
BEACON HILL ROAD
BEACON HILL
NEWARK-ON-TRENT
Total Number of households: 394 ******
Survey date: THURSDAY *26/11/98* *Survey Type: MANUAL*

10 **NT-03-K-03** **MANSFIELD HOUSING** **NOTTINGHAMSHIRE**
LOXLEY DRIVE
BERRYHILL
MANSFIELD
Total Number of households: 61 ******
Survey date: TUESDAY *08/12/98* *Survey Type: MANUAL*

11 **NT-03-K-04** **NOTTINGHAM HOUSING** **NOTTINGHAMSHIRE**
BEAUMARIS DRIVE
GEDLING
NOTTINGHAM
Total Number of households: 160 ******
Survey date: TUESDAY *24/11/98* *Survey Type: MANUAL*

12 **NT-03-K-05** **NOTTINGHAM HOUSING** **NOTTINGHAMSHIRE**
JENNY BURTON WAY
ASHFIELD
NOTTINGHAM
Total Number of households: 174 ******
Survey date: TUESDAY *08/12/98* *Survey Type: MANUAL*

13 **SH-03-K-01** **BRIDGNORTH HOUSING** **SHROPSHIRE**
BRAMBLE RIDGE

BRIDGNORTH
Total Number of households: 52 ******
Survey date: FRIDAY *08/05/98* *Survey Type: MANUAL*

14 **ST-03-K-01** **MIXED HOUSING, STAFFORD** **STAFFORDSHIRE**
THE MEADOWS
QUEENSVILLE
STAFFORD
Total Number of households: 224 ******
Survey date: TUESDAY *04/07/00* *Survey Type: MANUAL*

15 **WK-03-K-01** **MIXED HOUSING, STRATFORD** **WARWICKSHIRE**
OLD TOWN MEWS
OLD TOWN
STRATFORD UPON AVON
Total Number of households: 64 ******
Survey date: THURSDAY *07/09/00* *Survey Type: MANUAL*

16 **WO-03-K-01** **MIXED HOUSING, WORCESTER** **WORCESTERSHIRE**
MALVERN ROAD
LOWER WICK
WORCESTER
Total Number of households: 775 ******
Survey date: FRIDAY *24/05/02* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

17 **WO-03-K-02 MIXED HOUSING, BROMSGROVE WORCESTERSHIRE**
ST GODWALDS ROAD
ASTON FIELDS
BROMSGROVE
Total Number of households: 215 ******
Survey date: THURSDAY 23/05/02 Survey Type: MANUAL

18 **WO-03-K-03 MIXED HOUSING, WORCESTER WORCESTERSHIRE**
BYFIELD RISE

WORCESTER
Total Number of households: 103 ******
Survey date: TUESDAY 03/06/03 Survey Type: MANUAL

19 **WS-03-K-03 CHICHESTER HOUSING WEST SUSSEX**
LAVANT DOWN ROAD
LAVANT
CHICHESTER
Total Number of households: 90 ******
Survey date: MONDAY 20/11/00 Survey Type: DIRECTIONAL
Survey date: TUESDAY 21/11/00 Survey Type: DIRECTIONAL
Survey date: WEDNESDAY 22/11/00 Survey Type: DIRECTIONAL
Survey date: THURSDAY 23/11/00 Survey Type: DIRECTIONAL
Survey date: FRIDAY 24/11/00 Survey Type: DIRECTIONAL

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIVATE HOUSING

Calculation factor: 1 HHOLDS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate
00:00 - 01:00	13	675	0.02	13	675	0.01	13	675	0.03
01:00 - 02:00	13	675	0.01	13	675	0.00	13	675	0.01
02:00 - 03:00	13	675	0.00	13	675	0.00	13	675	0.00
03:00 - 04:00	13	675	0.00	13	675	0.00	13	675	0.00
04:00 - 05:00	13	675	0.00	13	675	0.00	13	675	0.00
05:00 - 06:00	13	675	0.01	13	675	0.02	13	675	0.03
06:00 - 07:00	13	675	0.02	13	675	0.10	13	675	0.12
07:00 - 08:00	30	475	0.07	30	475	0.34	30	475	0.41
08:00 - 09:00	30	475	0.10	**30**	**475**	**0.42**	30	475	0.52
09:00 - 10:00	30	475	0.12	30	475	0.18	30	475	0.30
10:00 - 11:00	30	475	0.11	30	475	0.14	30	475	0.25
11:00 - 12:00	30	475	0.13	30	475	0.13	30	475	0.26
12:00 - 13:00	30	475	0.16	30	475	0.13	30	475	0.29
13:00 - 14:00	30	475	0.14	30	475	0.15	30	475	0.29
14:00 - 15:00	30	475	0.15	30	475	0.14	30	475	0.29
15:00 - 16:00	30	475	0.21	30	475	0.16	30	475	0.37
16:00 - 17:00	30	475	0.27	30	475	0.16	30	475	0.43
17:00 - 18:00	**30**	**475**	**0.39**	30	475	0.17	**30**	**475**	**0.56**
18:00 - 19:00	30	475	0.34	30	475	0.21	30	475	0.55
19:00 - 20:00	13	675	0.25	13	675	0.19	13	675	0.44
20:00 - 21:00	13	675	0.16	13	675	0.12	13	675	0.28
21:00 - 22:00	13	675	0.12	13	675	0.06	13	675	0.18
22:00 - 23:00	13	675	0.09	13	675	0.05	13	675	0.14
23:00 - 24:00	13	675	0.08	13	675	0.04	13	675	0.12
Daily Trip Rates:			2.94			2.93			5.87

Parameter summary

Trip rate parameter range selected:	26 - 1165 (units:)
Survey date date range:	01/01/96 - 03/06/03
Number of weekdays (Monday-Friday):	30
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	0

Annex B Mode Share

Extracts from NTS – Residential