

CONTENTS

1.	INTRODUCTION	1
2.	THE SITE AND THE LOCAL HIGHWAY NETWORK	2
3.	THE PLANNING CONTEXT	4
4.	PROPOSED DEVELOPMENT, SITE ACCESS AND PARKING ARRANGEMENTS	16
5.	EXISTING CONDITIONS	18
6.	TRAFFIC AND ACCESS APPRAISAL	20
7.	SUSTAINABILITY AND ACCESSIBILITY ASSESSMENT	24
8.	PUBLIC ACCESS FOR EXTRAORDINARY EVENTS	30
9.	CONCLUSION	31
	LIST OF APPENDICES	33

1. INTRODUCTION

- 1.1 This Transport Assessment has been prepared by John Allen Consulting, on behalf of Cambridge Sport Lakes Trust. It relates to proposals for the development of an outdoor sports centre on land between Milton and Waterbeach, to the north of Cambridge. The development proposal provides for a 220 acre multi-sport venue, lakes and country park, allowing facilities and competition for rowing canoeing, triathlon and cycling. The site is currently occupied by open fields immediately to the west of the main Cambridge to Ely railway line.
- 1.2 A Transport Assessment has been requested by the Local Highway Authority to enable them to take a view regarding the forthcoming planning application for the proposed development. This report has therefore been prepared with reference to Cambridgeshire County Council's Guidelines for Transport Assessments, prepared in August 2004. The report is also based on the current best practice advice contained in the national document 'Guidelines for Traffic Impact Assessment' published by the Institution of Highways and Transportation.
- 1.3 An assessment of the vehicular traffic likely to be generated by the proposed use is assessed by applying trip rates obtained from the TRICS 2005(a) database. The vehicle access arrangements are described, and the parking arrangements for the proposed assessed with regard to the adopted County-wide car and cycle parking standards.
- 1.4 This report also considers the suitability of the site in terms of sustainability principles contained in local and national planning guidance, with regard to the accessibility of the development site by means of walking, cycling and public transport, thereby minimising the impact of the private car. In particular, the report considers the following:
- Whether the site is easily accessible by all modes of travel, especially public transport, cycling and walking;
 - Whether the development accesses will integrate safely into the transport network; and
 - Whether the development will seek to reduce reliance on the private car.

2. THE SITE AND THE LOCAL HIGHWAY NETWORK

- 2.1 A site location plan, based on the Ordnance Survey at 1:50,000 scale, is attached at Appendix 1, showing the site in relation to Cambridge and other surrounding settlements.
- 2.2 The site is a rural location within the administrative boundary of South Cambridgeshire District Council, and lies between Milton Country Park to the south and the village of Waterbeach to the north. It is currently occupied by open fields, and covers an area of 95.1 hectares. The centre of the site is approximately 6.5km to the northeast of the centre of Cambridge. The site runs parallel and adjacent to the London – Cambridge - Ely mainline railway on its southeast side, and Car Dyke on its northeast side. On its western side, the site abuts fields situated a short distance to the east of the A10 and the village of Milton. Immediately to the east of the railway line is the River Cam, and the site itself abuts the River Cam at its southeastern-most extent.
- 2.3 Vehicular access to the site can be obtained via Car Dyke Road, which itself provides access to the southern part of Waterbeach from the A10. Car Dyke Road is a single carriageway rural public highway subject to a 60mph limit between its junction with the A10 and immediately to the south of its junction with Cambridge Road. To the north of this junction, Car Dyke Road itself becomes Cambridge Road. It is not provided with footways, although is subject to street lighting. There are bus stops located on Car Dyke Road immediately to the east of its junction with the A10 and immediately inside the village of Waterbeach itself, shortly to the north of its junction with Cambridge Road.
- 2.4 Car Dyke Road joins the A10 approximately 0.5km to the west of the northern-most extent of the site by means of an at-grade priority T-junction with single-lane dualling. The A10 is the major road subject to a 60mph limit and street lighting at this junction, and the single-lane dualling also permits movements to the Slap-Up Indian restaurant and Waterbeach Road.
- 2.5 The A10 was recently a Trunk Road under the responsibility of the Highways Agency, but was de-trunked in April 2001 when it became the responsibility of Cambridgeshire County Council as local highway authority. It is now classified as a County Primary road, and in 2004 had a 16-hour average annual weekday 2-way traffic flow of 21,100 vehicles immediately to the south of Waterbeach.

- 2.6 Vehicular access to the site can also be obtained from Fen Road, which runs generally east-west between the River Cam and the village of Milton. Fen Road is a single carriageway public highway of a residential nature within Milton itself, and is subject to a 30mph limit with street lighting and footways. Between the village and the River Cam, Fen Road becomes a single lane track with passing places, but no footways or street lighting. It crosses the Cambridge – Ely railway line approximately 400m to the west of the River Cam by means of an at-grade automatic barrier controlled crossing.
- 2.7 Waterbeach itself has a population of approximately 6,000, and also has a railway station, providing a direct service between Ely, Cambridge and London. There is also a regular bus service south to Cambridge and north to Ely. Public transportation matters are discussed further in Chapter 7.

3. THE PLANNING CONTEXT

3.1 The type and location of the development in question requires its transport assessment to have full regard to the current policy framework, embodied in both national and local guidance. The current national and local planning policy guidance of relevance to the proposed development site is therefore addressed below. This focuses on the transportation, sustainability and accessibility implications of the development in question.

National and Regional Policies

3.2 The following national and regional planning policy documents are of relevance to the proposed development:

- PPG13: Transport and related best practice documents;
- PPG17: Sport and Recreation;
- RSS14 (draft): East of England.

PPG13 (Transport)

3.3 The publication of PPG13 (Transport) in 1994 was a landmark in planning policy in that it addressed the means of travel other than by private car. PPG13, published in March 2001, builds on the foundations of the 1994 publication, and is primarily aimed at achieving a better integration between land use planning and transport. It states that:

By shaping the pattern of development and influencing the location, scale, density, design and mix of land uses, planning can help to reduce the need to travel, reduce the length of journeys and make it safer and easier for people to access jobs, shopping, leisure facilities and services by public transport, walking and cycling (paragraph 3).

3.4 The objectives of PPG13 are clearly set out in paragraph 4:

...To integrate planning and transport at the national, regional, strategic and local level to:

- *Promote more sustainable transport choices for both people and for moving freight;*

- *Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling; and*
- *Reduce the need to travel, especially by car.*

3.5 To deliver these objectives, the guidance advises that local planning authorities should, inter alia:

- *Ensure that development comprising jobs, shopping, leisure and services offers a realistic choice of access by public transport, walking and cycling, recognising that this may be less achievable in some rural areas.*
- *In rural areas, locate most development for housing, jobs, shopping, leisure and services in local service centres which are designated in the development plan to act as focal points for housing, transport and other services, and encourage better transport provision in the countryside (paragraph 6).*

3.6 The accessibility of new developments by non-car modes is stressed at paragraph 19:

A key planning objective is to ensure that jobs, shopping, leisure facilities and services are accessible by public transport, walking, and cycling. This is important for all, but especially for those who do not have regular use of a car, and to promote social inclusion. In preparing their development plans, local authorities should give particular emphasis to accessibility in identifying the preferred areas and sites where such land uses should be located, to ensure they will offer realistic, safe and easy access by a range of transport modes, and not exclusively by car.

3.7 With regard to the assessment of the transport implications of new developments, PPG13 notes that:

Development comprising jobs, shopping, leisure and services should offer a realistic choice of access by public transport, walking and cycling. This should be assessed in terms of how easy it is to get to the site comparing the different modes (taking into account journey times, public transport frequency, quality, safety and access for disabled people). Development comprising jobs, shopping, leisure and services should not be designed and located on the assumption that the car will represent the only realistic means of access for the vast majority of people (paragraph 26).

- 3.8 The guidance suggests that walking offers the greatest potential to replace short car trips, particularly under 2km (paragraph 75). It also suggests that cycling offers potential to substitute car trips up to 5km (paragraph 78).
- 3.9 PPG13: A Guide to Better Practice provides further advice regarding the distance that people are generally prepared to travel by various modes. In relation to the distance between homes and activities, it states that:

Where distances exceed 1 mile (about 1.6km) only a small proportion of people will walk. Where distances exceed about 5 miles (8km) only a small proportion of people will regularly cycle, even where good facilities are provided. Other modes are less sensitive to distance, but motorised modes are rarely used for trips of around half a mile (0.8km) or less. Rail travel usually offers an advantage only for trips longer than about 3 miles (3 km). The closer the activities, the greater is the opportunity to walk or cycle (paragraph 2.05).

PPG17 (Sport and Recreation)

- 3.10 Advice on the planning aspects of sport is given in PPG17. This states that well-designed and implemented policies for open space, sport and recreation are fundamental to delivering the following broader Government objectives (inter alia):

Supporting a rural economy

The countryside can provide opportunities for recreation and visitors can play an important role in the regeneration of the economies of rural areas. Open spaces within rural settlements and accessibility to local sports and recreational facilities contribute to the quality of life and well being of people who live in rural areas.

Promoting more sustainable development

By ensuring that open space, sports and recreational facilities (particularly in urban areas) are easily accessible by walking and cycling and that more heavily used or intensive sports and recreational facilities are planned for locations well served by public transport.

- 3.11 PPG17 contains general principles for new open space and sports and recreational facilities. In identifying where to locate new areas of open space, sport and recreational facilities, it states that local authorities should, inter alia:

Promote accessibility by walking, cycling and public transport, and ensure that facilities are accessible for people with disabilities (under paragraph 20).

- 3.12 With regard to major developments, PPG17 states the following under paragraph 22:

Planning permission for stadia and major sports developments which will accommodate large numbers of spectators, or which will also function as a facility for community based sports and recreation, should only be granted when they are to be located in areas with good access to public transport.

RSS14 (East of England)

- 3.13 The national planning policy guidance which sets the context for local planning policy is endorsed in regional planning guidance. A Regional Spatial Strategy (RSS) is currently being prepared for the East of England – RSS14 – and a Consultation draft RSS14 was published in December 2004. A core objective of the draft RSS14 is to:

Minimise the environmental impact of travel, by reducing the need to travel, encouraging the use of more environmentally friendly modes of transport, and widening choices of modes.

- 3.14 Policy T1 of RSS14 introduces a Regional Transport Strategy (RTS) aimed at improving opportunities for all to access jobs and services, and reducing the need to travel. The policy seeks to meet the following objectives (inter alia):

- *Improve opportunities for all to access jobs, services and leisure / tourist facilities;*
- *Reduce the need to travel;*

- *Minimise the environmental impact of transport provision and travel, protecting and enhancing the natural, built and historic environment;*
- *Improve safety and security.*

3.15 To achieve its objectives, the policy seeks to (inter alia):

- *Widen travel choice: increasing and promoting opportunities for travel by means other than the private car, particularly walking, cycling and public transport, improving seamless travel through the provision of quality interchange facilities and raising travel awareness;*
- *Stimulate efficient use of the existing transport infrastructure, efficiently maintaining and managing existing road, rail, port and airport infrastructure.*

Local Policies

3.16 The above national and regional planning guidance has set the context for local planning policy guidance documents. These contain specific advice regarding transportation and its integration with land use planning to achieve sustainable development for Cambridgeshire. The vision and requirements of the proposed development have been prepared in full recognition of the local planning policy guidance documents, which are outlined below.

Cambridgeshire and Peterborough Joint Structure Plan 2003

3.17 The current Structure Plan guides development in Cambridgeshire up to the year 2016. It indicates how much land will be needed for houses, offices, factories, shops etc. and ways in which these requirements are to be balanced with the need to protect the environment of the County for present and future generations. The Plan is a statutory document, formally adopted by Cambridgeshire County Council on 22 October 2003 after extensive consultation.

3.18 The overall Strategic Aim of the Plan, intended to help sustain and improve the quality of life for present and future generations, is as follows:

To integrate environmental, economic and social progress and minimise consumption of resources by making provision in sustainable locations for planned growth of housing, jobs, services and facilities. The benefits of this provision are to be accessible to all sectors of the community (from Table 1.1).

3.19 The Strategic Aim underlies the Sustainable Development Strategy, which itself gives the overall direction for all the policies contained in the Structure Plan. It states that:

. . . [the Strategic Aim] should lead to planned and concentrated growth, with housing, jobs, services and facilities in sustainable locations. This will help improve access and benefit the health and quality of life for all sectors of the community (paragraph 1.13).

3.20 The overall approach to development for the County is set out at Policy P1/1, which includes the following statement:

In all cases, development should be located where travel distances by car can be minimised, walking and cycling encouraged and where good public transport accessibility exists or can be provided.

3.21 The Structure Plan contains specific policies relating to movement and access. Policy P8/1 'Sustainable Development – Links Between Land Use and Transport' states that local authorities should take measures to ensure that new development:

- *Is located in areas that are, or can be made, highly accessible to public transport, cycle and on foot;*
- *Is designed to reduce the need to travel, particularly by car;*
- *Provides opportunities for travel choice;*
- *Provides for the needs of pedestrians, cyclists and public transport users;*
- *Provides appropriate access from the highway network that does not compromise safety.*

3.22 The Structure Plan recognises that the close proximity to transport systems and other developed areas maximises the opportunities for people to use a range of travel modes other than the private car, and that developments which contain mixed uses or complement other nearby developments will contribute to a reduction in the need to travel and the distances travelled. The integration of land use and transport planning is therefore critical to achieving sustainable development.

3.23 The Plan seeks to minimise the use of the car to promote sustainable development (Policy P8/4), whilst improving bus and rail services. Policy P8/6 seeks to improve bus and community transport services, recognising that buses represent the main alternative to car travel for many journeys in the Structure Plan area. It states:

New development will be designed to maximise accessibility by bus and will be required to contribute towards these elements.

3.24 Policy P8/7 also promotes improvements to rail services and infrastructure, where these can be achieved with cooperation with the rail industry. It states:

Priority will be given to improvements which are feasible to serve existing and planning developments.

3.25 The Structure Plan notes that a significant proportion of journeys are under two miles, and therefore have potential to be made by cycle or on foot. Policy P8/8 encourages such modes of travel, stating:

The capacity, quality and safety of walking and cycling networks will be increased to promote their use, minimise motorised travel and to realise health improvements. All new development must provide safe and convenient pedestrian and cycle environments including adequate cycle parking, and contribute towards the wider encouragement of cycling and walking.

3.26 Policy P8/10 of the Structure Plan contains the Transport Investment Priorities in the Structure Plan Area for the Plan period. Those particularly relevant to the proposed development include:

Buses

Development of a comprehensive and high quality network of bus services across the Structure Plan Area.

Rail

Major improvement to Cambridge railway station including additional platforms and passenger facilities.

Chesterton railway station and interchange including the link to the rapid transit system utilising the former St Ives railway line.

Cycling and Walking

Measures to increase the capacity, usage and safety of pedestrian and cycle routes, including the completion of the 'Sustrans' long distance cycle network.

- 3.27 The proposed development is also affected by proposals for the Cambridgeshire Guided Busway (CGB), and which is referred to as the rapid transit system under Policy P8/10 of the Structure Plan. The CGB will provide a high quality, reliable and frequent public transport service in the A14 corridor. Buses will travel along the disused railway line from St Ives to the Cambridge Science Park. They will then travel on normal roads through Cambridge city centre to the railway station. At the railway station buses will rejoin the disused railway line and travel through to Addenbrooke's and Trumpington Park & Ride. There will be a spur from the Science Park to the proposed new railway station at Chesterton.
- 3.28 The Council's bid for funding for the CGB was made to the Department for Transport in July 2002 as part of the Local Transport Plan (LTP). The scheme was 'Provisionally Accepted' by the DfT in December 2003, subject to the outcome of a Transport and Works Act inquiry. The estimated cost of the scheme is £73.800 million in cash terms with a contribution sought from LTP funds of £65.000 million. The remaining costs will be secured from Section 106 Agreements with developers.
- 3.29 An application to secure the legal powers necessary to implement the CGB was submitted under the Transport and Works Act in February 2004. A public inquiry was then held late in 2004 for an independent inspector to consider the CGB proposals. The inspector's report is due later in 2005.
- 3.30 The development is situated within the Cambridge Sub-Region, as defined in Chapter 9 of the Structure Plan. The Structure Plan Vision for the Cambridge Sub-Region, at paragraph 9.8, includes the following:

Integrated transport systems related closely to the development patterns in the Sub-Region, including high quality public transport networks, will deliver more sustainable travel patterns. An attractive, ecologically rich and accessible countryside will be facilitated.

3.31 The Plan presents a Cambridge Sub-Region Transport Strategy at Policy P9/9, based on (inter alia):

- *The provision of a network of high quality public transport services along key corridors connecting Cambridge with the Market Towns, other centres and major development sites;*
- *Other improvements to public transport services along key routes into the City, Market Towns and Rural Centres;*
- *The development of more widespread facilities to encourage walking and cycling;*
- *Infrastructure improvements to achieve safer travel and improved mobility for the disabled;*
- *Improvements on A10 corridor between Cambridge and Ely, including development of a high quality public transport link.*

Cambridgeshire Local Transport Plan 2004-2011

3.32 The Cambridgeshire Local Transport Plan (LTP) sets out the objectives, strategy and programme for transport in the County. It is produced by a partnership of Cambridgeshire County Council, Cambridge City Council and the district councils of East Cambridgeshire, Fenland, Huntingdonshire, and South Cambridgeshire, and plays a key role in helping to achieve the policies within the Structure Plan and Local Plans through the provision of transport infrastructure and services to developments. The following objectives are contained within Chapter 4 of the LTP:

- *To make travel safer;*
- *To develop integrated transport;*
- *To promote public transport, walking, cycling and other sustainable forms of transport;*

- *To maintain and operate efficient transport networks;*
- *To create a transport system that is accessible to all;*
- *To provide a transport system that meets the needs of the economy;*
- *To protect and enhance the built and natural environment.*

3.33 To achieve the above objectives, the LTP presents a strategy that identifies the need to widen choice for transport users, and the need to manage demand for transport (Chapter 5). It notes that land use and transport planning can contribute to delivering the LTP strategy for urban areas and their hinterlands as follows (inter alia):

- *Improved and more accessible bus services;*
- *Improved interchange facilities between bus and rail;*
- *An enhanced network of cycle and pedestrian routes;*
- *Encouraging the provision of more accessible taxis;*
- *Improved pedestrian facilities.*

3.34 For rural areas, the LTP seeks the reduction in the growth in car use by improving accessibility through the provision of improved public transport linking to transport corridors, including that of the A10 between Cambridge and Ely. The measures to widen travel choice in rural areas include the development of the public transport system.

3.35 The LTP includes strategies for walking and cycling (LTP Appendix 4), rail (LTP Appendix 3) and buses (Appendix 7) which seek to achieve the overarching aims and objectives for sustainable travel in Cambridgeshire contained in the Structure Plan and derived from national and regional planning guidance.

South Cambridgeshire Local Plan (adopted February 2004)

3.36 The South Cambridgeshire District Local Plan (2004) sets out detailed policies and proposals for the control of development in the District up to 2006. It presents a sustainable development strategy, which, in terms of transport, will seek to achieve the safe and efficient movement of goods and people through the District whilst minimising any adverse environmental impact. The following transport objectives are presented in Chapter 7:

- *To reduce the need to travel, particularly by private car;*
- *To promote the use of more sustainable modes of travel, such as public transport, walking and cycling by making such modes more accessible, safer and more attractive to use;*
- *To promote sustainable travel by ensuring new development takes place in highly accessible locations;*
- *To limit the amount of car parking provided in new developments, where appropriate, to reduce over-reliance on the car;*
- *To improve personal safety and mobility for all users, including those with disabilities;*
- *To safeguard land for highways and other transport proposals;*
- *To make adequate provision for all transport modes in new developments;*
- *To reduce the environmental impact of travel and limit the growth of road traffic;*
- *To take account of those with special needs, including people with disabilities;*
- *To assist in reversing the decline in public transport;*
- *To conserve energy and reduce air pollution by limiting the growth in road traffic and reducing the environmental impact of travel.*

3.37 The District Council's Strategy for sustainable travel is contained at Policy TP1 of the Local Plan. This states:

To give effect to these aims, planning permission will not be granted for developments likely to give rise to more than a small-scale increase in travel demands unless the site has (or will attain) a sufficient standard of accessibility to offer an appropriate choice of travel by public transport or other non-car travel mode(s).

In considering planning applications, the Council will seek to ensure that every opportunity is taken to increase accessibility to non-car modes by appropriate measures such as:

- *Securing appropriate improvements to public transport service levels;*
- *Adopting on-site and/or off-site design features that promote access by non-car modes as far as practicable (including walking and cycling) and facilitate and encourage their use;*
- *Restricting car parking to the maximum levels set out in Appendix 7/1 [of the Local Plan];*
- *Requiring safe and secure cycle parking as set out in Appendix 7/2 [of the Local Plan].*

Where a proposal is likely to have 'significant transport implications' the Council will require the preparation of (a) a Transport Assessment and (b) a Travel Plan. The latter should demonstrate how it is intended to meet the objectives in the first paragraph above. In appropriate cases the content of the Travel Plan may be reflected in planning conditions or a planning obligation.

3.38 The implications of the above national and local planning policies are assessed in detail in Sections 6 and 7 of this report.

4. PROPOSED DEVELOPMENT, SITE ACCESS AND PARKING ARRANGEMENTS

4.1 The proposed development on the site is for a world-class multi-sport venue and associated facilities covering an area of 95.1 hectares. The following elements are included with the proposal:

- 2000m long 8-lane Competition Lake with start bridge and towpaths on each side, and 1000m long 4-lane Training Lake incorporating a new Fen Road bridge;
- Sports Centre with changing, training / coaching, boat storage and ancillary facilities;
- A network of walking and cyclepaths connecting to the Cam and Milton Country Park;
- Short-stay camping / caravan park with associated amenity block;

Site Access Provision

4.2 To accord with the requirements of previous development proposals for the site, it is proposed that the facility be provided with one point of vehicular access, which is from Car Dyke Road immediately to the south of Waterbeach.

4.3 The proposed layout of the access, which is in the form of a ghost-island right-turn facility on Car Dyke Road, is shown on the drawing 6884/SK/100, which is attached at Appendix 2. The proposed access arrangements have been submitted to the County Council, as local highway authority, for the purposes of undertaking a stage 1 safety audit. A copy of the response, confirming approval in principal subject to detailed design aspects, is attached at Appendix 3.

4.4 The internal access and circulation roads, which will remain privately maintained and not be offered for adoption as public highways, will be designed in accordance with guidance contained within the appropriate design standards and also the requirements of the overall facility. Some of the internal paths will, for example, form part of event tracks and facilities, and will be laid out accordingly. As a principal means of traffic distribution, a roundabout will be provided shortly to the south of the main point of vehicular access on Car Dyke Road, details of which will be determined as part of the on-going site development.

Site Parking Provision

4.5 On a day-to-day basis, the level of traffic activity and car parking demand at the site will be negligible, and this aspect will be assessed in Section 6 of this report. The general parking provision will therefore be suitably accommodated within the proposed hard-standing areas and access roads.

4.6 The parking provision for the proposed development will also acknowledge the advice contained in PPG13 (Transport), which notes at paragraph 49 that:

The availability of car parking has a major influence on the means of transport people choose for their journeys. Some studies suggest that levels of parking can be more significant than levels of public transport provision in determining means of travel (particularly for the journey to work) even for locations very well served by public transport. . . Reducing the amount of parking in new development (and in the expansion and change of use in existing development) is essential, as part of a package of planning and transport measures, to promote sustainable travel choices.

4.7 The proposed development will cater for large-scale, extraordinary events. This will result in large groups of participants and spectators visiting the site up to 12 times a year. At all other times, the development will cater for routine training and recreation for small groups. The car parking provision will therefore be prepared to serve the operational needs of less frequent large-scale events, to ensure that the development does not contribute to off-site parking on the residential streets of Waterbeach and surrounding areas. However, it is not proposed that for such events general traffic will be visiting the site, but instead a remote parking strategy will be operated. This matter is assessed further in Section 8.

5. EXISTING CONDITIONS

Pedestrian and Cycle Provision

- 5.1 Pedestrian and cycle access to the site is available via the Fen Rivers Way, which runs adjacent to the River Cam between Chesterton in Cambridge and Ely, and is completely segregated from vehicular traffic. Access is also available through a connection to the Milton Country Park at the southwestern corner of the Training Lake
- 5.2 Access for pedestrians and cyclists is also available via Car Dyke Road, towards the north of the site area. This is a bus route and also enables access to Waterbeach railway station, via Chapel Street and Station Road, and approximately 1.6km from the centre of the proposed development site area.
- 5.3 A plan showing transport provision for by all non-car modes, including cyclists and pedestrians, is attached at Appendix 4. This also indicates the route of the proposed National Cycle Route Number 11, which will provide direct cycle access to the National Cycling Network.

Public Transport Provision

- 5.4 The northern extent of the site area is located within 100m of bus stops on Car Dyke Road / Cambridge Road, and within 400m of bus stops on Car Dyke Road immediately to the east of its junction with the A10. These stops are shown on the plan attached at Appendix 4. The 19/19A bus service calls at these stops, and a plan of this bus route is also shown on the plan at Appendix 4. The 19/19A bus route is operated by Stagecoach, and provides a daily service between Cambridge and Ely, via Waterbeach. The service has a weekday and Saturday frequency of 30 minutes from early morning to late evening, and a journey time to and from Cambridge city centre of approximately 25 minutes during off-peak periods. On Sundays and Bank Holidays, the route has a service frequency of approximately 2 hours from mid-morning to early evening, with a similar journey time.
- 5.5 Waterbeach is also served by bus route 196, which is operated by Whippet Coaches and provides a weekday and Saturday service between Waterbeach and Cambridge via Horningsea. The service frequency is approximately 2 hours from early morning to early evening, and a journey time to Cambridge city centre of approximately 45 minutes. More detailed timetable information for both route 19/19A and route 196 is attached at Appendix 5.

- 5.6 There is a railway station at Waterbeach, which is served by the main Cambridge-Ely railway line. WAGN operates services through Waterbeach on its main London Kings Cross to Kings Lynn line. This service also stops at Cambridge and Ely, and has a weekday half-hourly frequency during peak periods, an hourly frequency on Saturdays, and a two-hourly frequency on Sundays. The journey time to Cambridge is approximately 6 – 10 minutes, and that to London is approximately 53 – 58 minutes.

Traffic Flow Conditions

- 5.7 To understand the existing traffic conditions in the vicinity of the proposal site, weekday peak period traffic surveys were undertaken on Tuesday 8 February 2005 at the A10 junction with Car Dyke Road / the Slap Up Indian Restaurant / Waterbeach Road. The traffic count data is attached at Appendix 6, along with the full turning movements which are shown in Diagrams 1 and 2 attached at Appendix 7.

6. TRAFFIC IMPACT ASSESSMENT

Assessment Year Base Flows

- 6.1 The traffic impact assessment considers the impact of the full development for an assumed opening year of 2009, based on the observed traffic flows in 2005. The growth in traffic flow demand levels to 2009 will consist of a combination of trip end growth, associated with new development and increased car ownership, and growth related to an increase in average trip lengths.
- 6.2 The Government's National Road Traffic Forecasts 1997 (NRTF97) incorporate both trip end and trip length growth forecasts and provide the basis for estimating traffic growth. Advice contained in the guidance notes on the National Trip End Model (TEMPO 4.2.3) directs that NRTF97 forecasts should be tailored to local circumstances by comparing local trip end growth forecasts to the national forecast.
- 6.3 The NRTF97 central estimate growth forecast for all traffic between 2001 and 2011 on 'Other' rural roads is 1.14. The corresponding growth factor per annum for this period is 1.013. The resulting growth factor for 2005 to 2009 is therefore 1.067.
- 6.4 The trend-based national trip end growth forecast by TEMPO 4.2.3 for 2005 to 2009 is 1.046 and 1.044 for the AM and PM peak periods respectively, whereas the corresponding local peak hour factors for the South Cambridgeshire rural area is 1.065 and 1.062 respectively. Applying the local TEMPO correction factors to the NRTF97 forecasts produces a revised local traffic growth forecast factor of 1.086 for the AM peak and 1.085 for the PM peak periods from 2005 to 2009. These growth rates have been applied to the February 2005 observed traffic flows. The resulting traffic flows for 2009, without traffic generated by the proposed development of the site, are shown in Diagrams 3 and 4 attached at Appendix 7.

Predicted Traffic Generated by Proposed Redevelopment

- 6.5 The traffic impact of the proposed development has been assessed firstly according to the routine functions which it will serve. These include the day-to-day training and recreational activities associated with the development.
- 6.6 A highway network typically operates at its maximum capacity during the weekday AM and PM peak hours, and therefore the traffic impact resulting from the proposed development has been assessed for these critical periods.

6.7 An assessment of the predicted number of trips that would be generated by the proposed development during weekday AM and PM peak hours, for routine functions, has been made with reference to the Trust's own estimations of likely usage and the TRICS 2005(b) database. The latter includes weekday surveys of 4 no. water ski/sailing club sites based in Surrey. The TRICS data is attached at Appendix 8. The weekday peak hour average trip rates associated with these sites are presented in Table 1 below, along with the corresponding number of development trips based on the proposal for 95.1 hectares.

Proposed Use	AM Peak			PM Peak		
	Arr	Dept	Total	Arr	Dept	Total
<i>TRICS Trip Rates per Hectare for Watersports Centres</i>	0.08	0.03	0.11	0.16	0.22	0.38
Predicted Number of Development Trips (95.1 hectares)	12	3	15	15	21	36

Table 1: Estimated Weekday Peak Hour Trip Generation for Proposed Development during 'Routine' Occasions (*includes Trust's own estimations).

Development Trip Route Choice and Assignment

6.8 It has been assumed that all development trips enter and exit the site via the Car Dyke Road western arm of the site access junction, and are therefore all routed through the Car Dyke Road junction with the A10. Development trips at this junction have been approximated based on an assignment of two-thirds via the A10 south and one-third via the A10 north. This is the assumed distribution of origins-destinations of routine users of the development.

6.9 The likely development flows only for the weekday AM and PM peak hours are shown in Diagrams 5 and 6 attached at Appendix 7.

Link Capacity Assessment

6.10 The Institute of Highways and Transportation (IHT), in its 'Guidelines for Traffic Impact Assessment' (September 1994), recommends that a traffic impact assessment should normally be undertaken where one or other of the following thresholds is exceeded:

- Traffic to and from a development exceeds 10% of the two-way traffic flow on the adjoining highway;

- Traffic to and from a development exceeds 5% of the two-way traffic flow on the adjoining highway, where traffic congestion exists or will exist within the assessment period or in other sensitive locations.

6.11 To investigate the traffic impact of the proposed development, the predicted development flows have been added to the 2009 base flows excluding trips generated by the existing activity on the site, and are shown in Diagrams 7 and 8 at Appendix 7. The percentage increase in flows arising from the proposed development have been assessed, and are summarised for 2009 in Tables 2 and 3 below.

2009 AM Peak Hour Road Link	2-Way Base Flow	2-Way Additional Development Flows Only	2-Way Flow Including Additional Development Flows	% Increase: Base - With Development
Car Dyke Road immediately east of A10	508	15	523	2.95
A10 immediately south of Car Dyke Road	1763	7	1770	0.42
A10 immediately north of Car Dyke Road	1784	4	1788	0.21

Table 2: Development Impact on Weekday AM Peak Hour 2-Way Flows in 2009

2009 PM Peak Hour Road Link	2-Way Base Flow	2-Way Additional Development Flows Only	2-Way Flow Including Additional Development Flows	% Increase: Base - With Development
Car Dyke Road immediately east of A10	401	36	437	8.97
A10 immediately south of Car Dyke Road	1986	24	2010	1.21
A10 immediately north of Car Dyke Road	1925	12	1937	0.62

Table 3: Development Impact on Weekday PM Peak Hour 2-Way Flows in 2009

6.12 The comparison of 2009 base flows against flows with development indicates that the development will generate negligible increases in traffic flows on the A10 approaching its junction with Car Dyke Road. The increases on the A10 for both the AM and PM peak hours are within the IHT's 5% threshold, and would not therefore be considered material in terms of its impact on the local highway network.

- 6.13 The predicted percentage increases in flows on Car Dyke Road are as a result of its relatively low base flows, and therefore the relatively modest absolute increase of 36 vehicles during the PM peak hour (on average, less than one vehicle every minute) is reflected in a considerable percentage increase. This increase does exceed the IHT's threshold for locations where traffic congestion exists or will exist within the assessment period or in other sensitive locations. When considering the significance of the development impact with regard to the Institute of Environmental Assessment's "Guidelines for the Environmental Assessment of Road Traffic", however, an increase of less than 10% would not be noticeable from the intrinsic day-to-day variation in traffic flows. Rule 1 of the IEA's guidelines state that:

Traffic forecasting is not an exact science and the accuracy of projections is open to debate. It is generally accepted that accuracies greater than 10% are not achievable. It should also be noted that the day-to-day variation of traffic on a road is frequently at least some + or – 10%. At a basic level, it should therefore be assumed that projected changes in traffic of less than 10% create no discernable environmental impact.

- 6.14 It is therefore considered that the local highway network will safely accommodate the additional flows generated during the weekday AM and PM peak hours with the development functioning on a routine, day-to-day basis.
- 6.15 Extraordinary events will be held at the development on approximately 12 occasions per year. At these times, it is likely that significant numbers of spectators and competitors will attend the site, but vehicular traffic entering the facility will be strictly limited to operational and essential users only. It is proposed that traffic management measures would be put in place at these times, and these measures will be operated in agreement with and following on from regular discussions with Police and the local highway authority. This matter is assessed in detail in Section 8.

7. SUSTAINABILITY AND ACCESSIBILITY APPRAISAL

7.1 An important part of the development proposal is that it will offer excellent means of access other than the private car, and will therefore support local, regional and national government guidance in relation to sustainable transport. This section describes how the development will encourage a modal shift away from the use of the private car for potential staff, visitors and competitors to the site.

Walking

7.2 PPG13 suggests that walking is the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly under 2km. A 2km isochrone from the proposed location of the main sporting facility on the site is shown on the plan attached at Appendix 9, which illustrates that the proposed lake itself is more than 2km in length. The village of Waterbeach is, however, within this walking distance, and this includes its railway station and the bus services that operate along Car Dyke Road. Matters relating to public transport are discussed in greater detail below, but at this stage it is important to note that walking forms an important part of longer overall journeys made by public transport. It is important, therefore, that the development provides high quality, safe, secure and direct pedestrian routes to and from the railway station and bus stops.

7.3 There is also the Fen Rivers Way, a designated footpath/recreational path, along the River Cam which provides a direct connection between Cambridge and Waterbeach railway station. This route continues eventually to Ely. The footpath would be carried over the proposed 'Canal' (shortly to the south of Baits Bite Lock) by means of a new bridge. footways/cycleways.

7.4 The distance to the centre of Cambridge from the proposed main sports centre is approximately 7km. Based on an average walking speed of 4.8kph, this represents an approximate journey time for walking of 1.5hours, and therefore would not be suitable on a day-to-day basis. However, the journey would be attractive in terms of its complete segregation from vehicular traffic, with regard to safety and convenience. Notwithstanding the potential for walking between the site and the railway station and bus stops, it is none-the-less considered that other modes of travel will form the main means of non-car access to the proposed development. These are discussed below.

Cycling

- 7.5 PPG13 states that cycling has the potential to substitute for short car trips, particularly those under 5km. A 5km isochrone from the main sports centre is shown on the plan attached at Appendix 9, indicating that an appreciable area of north Cambridge is within this distance.
- 7.6 The Fen Rivers Way footpath/recreational path alongside the River Cam between Cambridge and Ely is also the proposed route of the National Cycle Route 11 extension north of Cambridge. This will be part of the wider National Cycling Network, co-ordinated by Sustrans. The proposed route is shown on the plan attached at Appendix 4, indicating that the development will have direct cycle access to the National Cycling Network.
- 7.7 The Department for Transport, in its Action Plan on Walking and Cycling (2004), considers that the National Cycle Network is making a valuable contribution to the creation of a 'walking and cycling culture', where walking and cycling progressively become part of people's day-to-day lives. The proposed Route 11 is therefore an integral part of encouraging non-car modes of travel to the development.
- 7.8 Notwithstanding the above, the development proposals are likely to attract visitors and competitors from a wider area than which it is reasonable to cycle safely and conveniently. It is, nevertheless, important for cycling to form part of overall non-car development trips, which are likely to be made by public transport. This is discussed in greater detail below.

Public Transport

- 7.9 For regular users of the sporting facility, bus stops serving the half-hourly bus route 19/19A are located fewer than 200 metres from the site. This route provides regular access to Cambridge central bus station at Drummer Street, with an approximate off-peak journey time of 25 minutes. The service also stops at the Cambridge Science Park, and Ely, March and Wisbech in the north of Cambridgeshire. The routes of bus services operating in the vicinity of the site are indicated on the plan attached at Appendix 4, and Appendix 5 contains timetable information for these services. The site is therefore ideally located for access to high quality and frequent bus services.

- 7.10 Waterbeach has the benefit of a railway station on the main London – Kings Lynn line. Train services running at 30-minute intervals in the week, stop at Waterbeach from early morning to late evening. Journey times between Waterbeach and Cambridge are between 6 and 10 minutes. Journey times to London are approximately 1 hour. A new railway station is also allocated in the Cambridgeshire Structure Plan at Chesterton Sidings, as referred to in Section 3. Journey times to Waterbeach from this new station are likely to be less than 5 minutes.
- 7.11 The Cambridgeshire Guided Busway is referred to in Section 3 of this report, and would provide a high quality public transport service between St. Ives and Cambridge. A spur would connect with the proposed Chesterton Station. The development of Chesterton station and the CGB spur will further enable wider transport choice for a greater catchment area, reducing reliance on the private car.
- 7.12 Further afield, there are improvements underway at Kings Cross/St Pancras station, incorporating the Channel Tunnel Rail Link and future extension of the Thameslink 2000 network, which will extend to Cambridge and Ely. These improvements will enable a far wider catchment area to gain access to the site by public transport, particularly for the extraordinary events that are likely to attract significant numbers of visitors from beyond the Cambridge sub-region.
- 7.13 It is therefore very important that excellent provision is made for cyclists and pedestrians between Waterbeach railway station and the development. The DfT's Action Plan on Walking and Cycling (2004) notes that every public transport journey starts or finishes with a walk or a cycle, and the station is within easy walking and cycling distance from the proposed main sports centre. Improving pedestrian or cycle access between the station and the proposed development therefore has the potential to increase public transport patronage, and also to achieve higher levels of walking and cycling.
- 7.14 The site is therefore highly accessible by public transport, and for a significant proportion of staff, visitors and competitors alike, access by public transport for most of the journey will be a particularly viable alternative to sole reliance on the private car.

Summary

7.15 It is considered that the proposal's location presents a real opportunity for development to proceed in a sustainable manner, encouraging a modal shift towards non-car modes of travel. There are significant opportunities for non-car modes of travel to access the site, which fully supports the objectives of PPG13. The development would also contribute to the objectives contained in the Regional Transport Strategy for the East of England (in draft RSS14), in that it would allow for the widening of travel choice between modes.

7.16 The location of Waterbeach railway station, the provision of bus services along Car Dyke Road and the A10, and the excellent pedestrian and cycle links to and from these public transport facilities, adheres to the guidance contained in PPG17 (Sport and Recreation), which states at paragraph 22 that:

Planning permission for stadia and major sports developments which will accommodate large numbers of spectators, or which will also function as a facility for community based sports and recreation, should only be granted when they are to be located in areas with good access to public transport.

7.17 The development will also contribute to the main elements contained in local planning policy guidance relating to sustainability. In particular, the development will fully contribute to the Sustainable Development Strategy and the Vision for the Cambridge Sub-Region, contained within the Cambridgeshire and Peterborough Joint Structure Plan. It will also accord entirely with Policy 8/1 of the Structure Plan, 'Sustainable Development – Links Between Land Use and Transport', in that:

- The development is located in an area highly accessible by public transport, cycle and on foot;
- The development is designed to reduce the need to travel, particularly by car;
- The development provides opportunities for travel choice;
- The development provides for the needs of pedestrians, cyclists and public transport users;
- The development provides appropriate access from the highway network that does not compromise safety.

- 7.18 Given that reducing the use of the car and encouraging alternative modes of transport is a central part of the government's transport policy, a significant amount of research has therefore been undertaken with regard to the likelihood of individuals decreasing their use of personal motor vehicles and increasing their walking, cycling or use of public transport. This research is briefly referred to below.
- 7.19 The most recent research is the DfT's Action Plan on Walking and Cycling (2004), which has been referred to above, and sets out measures from across government to increase levels of active travel. The companion guide to the Action Plan contains 50 examples of successful schemes from across England which have all achieved significant results with often modest, but always well-chosen, initiatives that have improved local conditions for walking and cycling and encouraged people to get around on foot and by bike. These schemes illustrate clear benefits in terms of reduced congestion, improved public health and enhanced quality of local streets and spaces.
- 7.20 With regard to encouraging public transport, the Transport Research Laboratory's Report 568, "Factors Influencing Trip Mode Choice" (2003), presents research undertaken to improve understanding of the reasons for mode choice for medium-length and long-distance journeys, and to indicate how mode choice might be influenced by various types of development in transport services. It identifies certain measures that have been undertaken to improve the attractiveness of travel by public transport in comparison to travel by private car. These include the following:
- Improved service reliability;
 - Reduced fare levels;
 - Reduction in public transport journey times;
 - Improved access to and egress from railway stations and bus stops;
 - Elimination of interchanges to provide direct services;
 - Better, more accessible passenger transport information;
 - Increased public transport service frequencies.

- 7.21 The Cambridgeshire Structure Plan, the Local Transport Plan and the South Cambridgeshire Local Plan contain the mechanisms to implement the above measures. It is therefore considered that the locality of the site is highly appropriate in terms of its connections with existing and proposed high quality walking, cycling and public transport networks. On a day-to-day basis, this is likely to facilitate and encourage non-car modes of travel to and from the development, therefore presenting an excellent opportunity for the development to promote local, regional and national policy objectives relating to sustainability, in principle the reduction in the use of the car and the widening of travel choice.
- 7.22 On a more specific basis, it is intended to introduce remote parking and transfers to the site by dedicated shuttle bus, an aspect that is examined in detail in Section 8 below. It is proposed that these routes will operate from Park & Ride sites, and may also potentially route via the relevant rail stations. It is therefore intended that the access regime will both encourage non-car travel and suppress traffic activity locally.

8. PUBLIC ACCESS FOR EXTRAORDINARY EVENTS

- 8.1 The Trust is committed to ensuring that traffic management and access arrangements for the periodical events at the site that will attract a high number of public attendees are suitable to affectively accommodate all travel demand without creating congestion on the local highway network or at the site itself. It is the intention of the Trust that vehicular traffic at the facility on such occasions shall be strictly limited to those requiring operational access, access for disabled persons or certain dignitaries as appropriate.
- 8.2 The Trust has therefore already entered into negotiations with the County Council to introduce a comprehensive remote Park & Ride system as a means of accommodating public demand on event days. It is proposed to combine event ticketing with bus pass provision and information, thus ensuring that all visitors are allocated a parking space off-site at appropriately located facilities, and that regular dedicated bus shuttle services operate to and from the site. Parking locally on-street and at the site will be strictly controlled.
- 8.3 At present, the Trust are in active discussions with the County Council to seek to provide such transfers from the purpose-built Park & Ride network around Cambridge, which would offer ideal facilities to accommodate the demand. However, it is also proposed that the Trust be involved in the on-going identification of new Park & Ride facilities on, for example, the Cambridge – Ely corridor, which would also offer an ideal opportunity to accommodate the Rowing Lake's parking demand.
- 8.4 Such a system will be the subject of on-going and extensive discussions, both prior to the commencement of the development and thereafter on an annual basis. The details of the system, and associated parking control on site and locally, will be the subject of a management plan.

9. CONCLUSION

- 9.1 This report considers the traffic and access impacts of development on land between Milton and Waterbeach, to the north of Cambridge. The development consists of an outdoor sports centre with rowing lakes, and covers an area of approximately 95.1 hectares.
- 9.2 The development would cater for routine, day-to-day activities for individuals and small groups, and also for extraordinary events up to 12 times a year which would attract significant numbers of spectators and competitors.
- 9.3 The local, regional and national planning background has been assessed, and primarily relates to the following:
- Whether the site is easily accessible by all modes of travel, especially public transport, cycling and walking;
 - Whether the development accesses will integrate safely into the transport network; and
 - Whether the development will seek to reduce reliance on the private car.
- 9.4 Vehicle access to the proposed development is via a new junction on Car Dyke Road, immediately to the south of Waterbeach and approximately 500m to the east of its junction with the A10. The vehicle and cycle parking arrangements will be prepared with reference to the adopted County-wide standards.
- 9.5 The existing conditions for pedestrians, cyclists and public transport users have been assessed. The site can be accessed by pedestrians and cyclists via the Fen Rivers Way, which runs adjacent to the River Cam. The site will also be accessible by the proposed National Cycle Route Number 11. A frequent bus service operates on Car Dyke Road, linking Waterbeach with Cambridge and Ely. Waterbeach also has a railway station on the main London – Cambridge – Ely railway line. Traffic surveys were undertaken in February 2005 at Car Dyke Road and its junction with the A10 to understand existing traffic flow conditions in the vicinity of the proposal site.

- 9.6 The traffic likely to be generated by the routine, day-to-day functions of the development has been assessed with reference to trip rates for comparable developments contained in the TRICS 2005(b) database. This contains surveys of 4 water ski / sailing club sites in Surrey. The impact of the development on weekday AM and PM peak hour traffic is assessed for an assumed opening year of 2009, and indicates that the resulting increase in traffic flows on the A10 would be negligible. Those for Car Dyke Road would not be noticeable from the intrinsic variation in day-to-day traffic flows. The traffic generation of the proposed development, assuming its routine functions, is therefore considered acceptable in terms of highway capacity and safety.
- 9.7 For the extraordinary events held up to 12 times a year at the development, the implementation of a remote Park & Ride scheme and associated traffic management measures in the vicinity of the site would be coordinated with the Police and the local highway authority, to mitigate as far as is reasonably practical the potential traffic impact of the development during these occasions. Discussions relating to the provision of the Park & Ride scheme are on-going with the local authorities.
- 9.8 The site has been assessed with regard to local and national government policies and objectives relating to accessibility and sustainability. Based on this assessment, it is considered that the proposal's location presents a real opportunity for development to proceed in a sustainable manner, encouraging a modal shift towards non-car modes of travel. There are significant opportunities for non-car modes of travel to access the site, which fully supports the objectives of PPG13. The development would also contribute to the objectives contained in the Regional Transport Strategy for the East of England (in draft RSS14), in that it would allow for the widening of travel choice between modes.
- 9.9 There is easy access to local bus routes which provide frequent and quick services to Cambridge and the surrounding area. The site also allows good access to Waterbeach railway station, and it is very important that there is excellent pedestrian and cycle routes between the development site and the station and local bus stops. This will present further opportunities for medium to long distance trips to be undertaken by non-car modes of travel.

LIST OF APPENDICES

- Appendix 1: Site Location Plan
- Appendix 2: Proposed Development Access Layout Plan
- Appendix 3: Response from Highway Authority relating to Access Provision
- Appendix 4: Non-car Accessibility Site Profile
- Appendix 5: Bus Route and Timetable Information
- Appendix 6: Traffic Flow Data
- Appendix 7: Traffic Flow Diagrams
- Appendix 8: TRICS 2005(b) Database Information
- Appendix 9: Plan of 2km and 5km Isochrones from Proposal Site