Great Fen Masterplan

March 2010



The Project Partners:











Registered Charity No. 1000412

Consultant LDĀDESIGN

Images on front cover

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Section 1. Introduction

The Great Fen is a visionary plan to transform in excess of 3,000ha of largely arable land into an area of wildlife-rich and publicly accessible fenland landscape. The Great Fen area lies in Huntingdonshire, with Peterborough to the north and Huntingdon to the south, and encompasses two National Nature Reserves – Holme Fen and Woodwalton Fen. This masterplan expresses the vision and aims of the project as an illustrative spatial plan.

The project will

- Safeguard our vital natural heritage by protecting remaining fragments of the ancient fenland landscape;
- Contribute to climate change adaptation and mitigation by creating large areas for wildlife and preventing the loss of peat soil;
- Provide for enhanced flood storage, protecting surrounding land and property;
- Provide fantastic opportunities for people to enjoy and learn about the natural and cultural heritage of the region; and
- Provide new opportunities for tourism, the local economy and local businesses.

The production of this masterplan has been undertaken by representatives of the Great Fen Project Partners; the Environment Agency, Huntingdonshire District Council, Middle Level Commissioners, Natural England and the Wildlife Trust for Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough, working with their consultant, LDA Design. It brings together the work of the partnership, informed by consultation with many local people and organisations with an interest in the project.

Between September and November 2009 the Project Partners consulted people through:

- Nineteen events at public venues where the partners spoke with over 270 people;
- Sixteen information points established at libraries and information centres between Peterborough and Huntingdon;
- 260 received questionnaire responses.

In addition the partners consulted many organisations representing public bodies or specialist user groups, including:

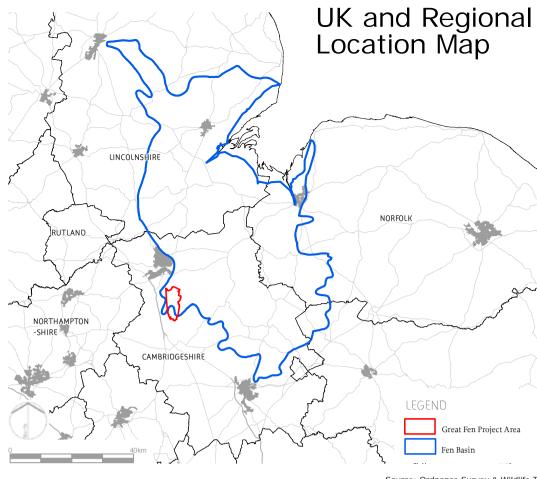
- British Horse Society
- Disability Cambridgeshire
- English Heritage
- Great Ouse Boating Association
- National Farmers Union
- Sustrans

The partners wish to thank everyone for their interest and involvement during the masterplan consultation and will continue to seek views as the project develops.

The development of the project is consistent with a number of important national, regional and local policies and strategies, including those relating to biodiversity, growth, planning, economic development, green infrastructure and water management. As such, it has significant potential to contribute to the objectives and outcomes of these strategies. The project has statutory backing through the Development Plan as set out in both the East of England Plan and the Huntingdonshire Core Strategy.

The masterplan is a long term illustration of how the project partners aim to deliver the Great Fen. The masterplan is only a guide as there are many uncertainties that will affect actual outcomes, including technical challenges, land management control, external influences and the way in which wildlife habitats will re-establish themselves on what has been, for many years, intensively farmed land. This masterplanning report is an important step on what will be a long journey, taking many decades to make the vision a reality.

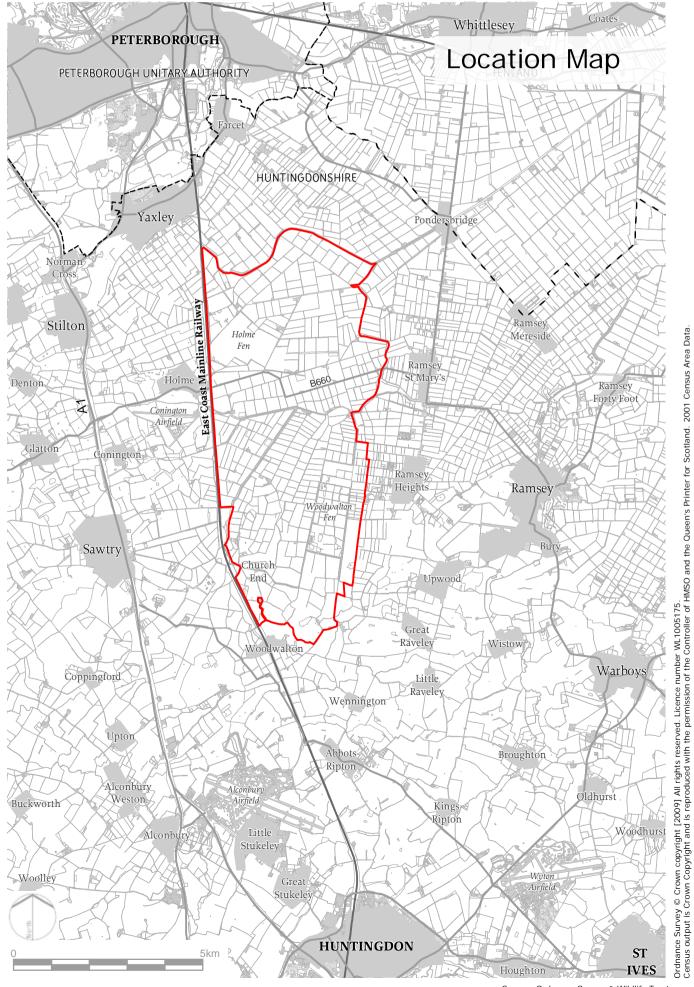




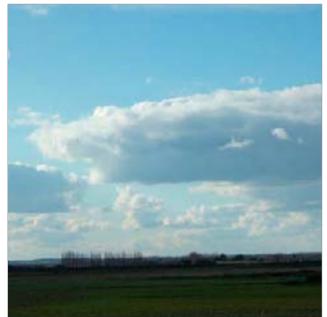
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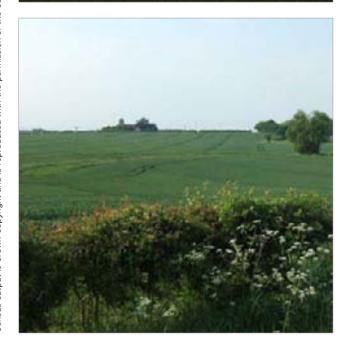
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Source: Ordnance Survey & Wildlife Trust









Source: Ordnance Survey & Wildlife Trust



Whilst many details of the masterplan will be developed over time, some of the key principles can be established, guided by the vision and policy context. The essential layout and character of what can be achieved is strongly shaped by the physical characteristics of the land. Once, the Great Fen area was part of a huge natural fenland landscape, with a large area of open water called Whittlesey Mere dominating the north, and a mosaic of bogs, fens and wet woodland to the south. The plan opposite, dating from 1808 to 1821, gives some impression of what the Great Fen area was like.

Although it is not possible to return the land to its original natural state, a landscape-scale transformation to a new fenland landscape is possible. It can be achieved through the management of water levels and by allowing natural processes and pastoral farming methods to be reestablished. As well as providing for wildlife, this new landscape will become a valuable resource for people – for quiet relaxation, recreation, providing contact with nature, for education and health and wellbeing.

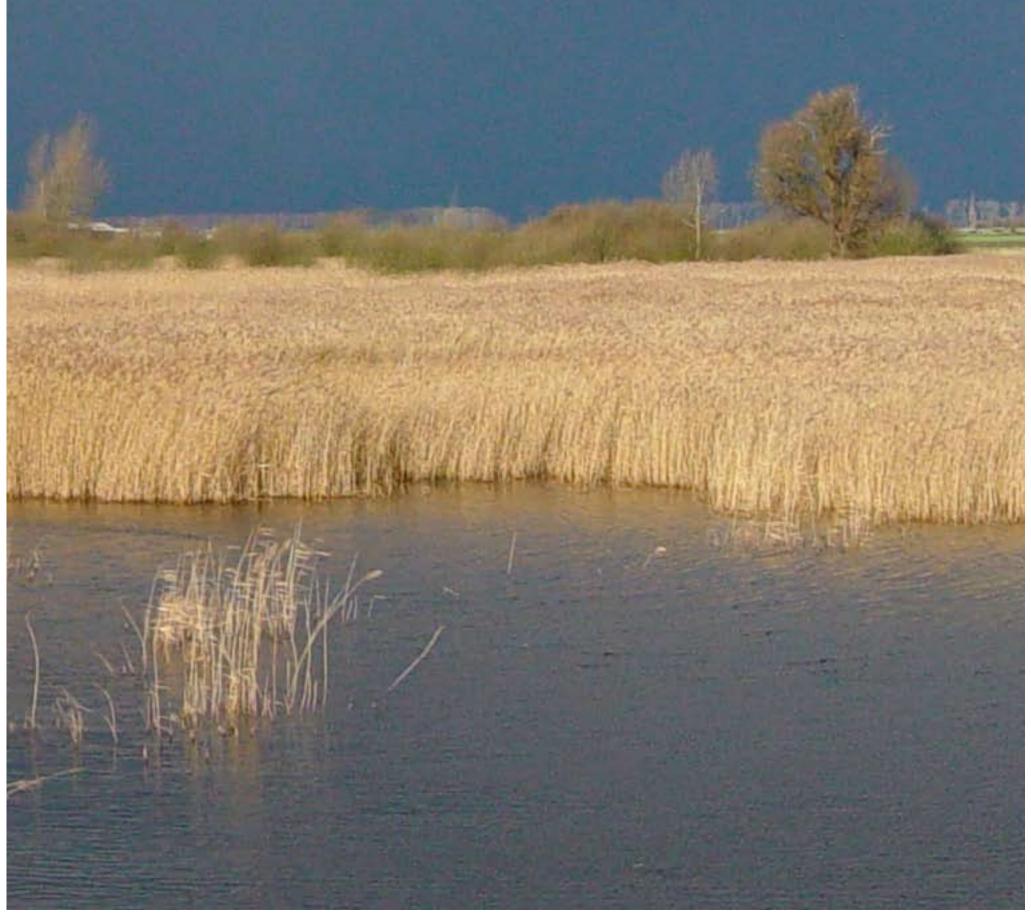


Ordnance Survey © Crown copyright [2009] All rights reserved. Licence number WL1005175. Historic map taken from The Land-use history of the Huntingdonshire Fenland, with special reference to the Holme Fen and Woodwalton Fen National Nature Reserve.

"Come, brethren of the water, and let us all assemble
To treat upon this matter, which makes us quake and tremble;
For we shall rue it, if it be true the fens be undertaken;
And where we feed on fen and reed, they'll feed both beef and bacon.

They'll sow both beans and oats, where never man yet thought it, Where men did row in boats, ere undertakers bought it; But, Ceres, thou, behold us now; let wild oats be their venture; And let the frogs and miry bogs destroy where they do enter."

Exract of the Powte's Complaint - 1630





The role of the masterplan is to clearly express the long-term vision of the project and support turning the vision into a reality.

The masterplan is broken down into the following sections.

Section 2 - The Masterplanning Process. This explains how the Project Partners and LDA Design have gone about creating the illustrative masterplan.

Section 3 - Strategic Drivers. This explains the 'strategic drivers', that is the global, economic, planning and other issues which form the 'big picture' for a project of this scale.

Section 4 - The Physical Geography and Ecology of the Great Fen. This summarises the physical characteristics of the site and the significance of people and communities who work and live on the site and in surrounding villages and towns.

Section 5 - People, Communities and Heritage. This explains the many people and organisations who have been involved in shaping the illustrative masterplan.

Section 6 - Great Fen Aims and Objectives. These are specific 'drivers' of the masterplan - a schedule of what the masterplan sets out to achieve.

Section 7 - The Great Fen Illustrative Masterplan. This explains the proposed habitats, management, landscape character and visual structure, access, circulation and visitor facilities around the site.

Section 8 - The Heart of the Great Fen: The Visitor Centre and Surrounding Landscape. This explains the vision for the visitor centre, its landscape setting and the arrival experience that visitors will enjoy.

Section 9 - The Next Steps. This briefly sets out what the Great Fen Project Partners will be doing in the near future to move the project forward.





The Project Partners

The Great Fen Project Partners have been collaborating on the project since 2001. They have a wealth of expertise and experience in socio-economic and environmental development.

The Environment Agency is the leading organisation for protecting and improving the environment in England and Wales. It is responsible for making sure that air, land and water are looked after by today's society, so that tomorrow's generations inherit a cleaner, healthier world. Involvement in the flagship Great Fen is led by Central Area, Anglian Region. The Environment Agency's water management responsibilities in the Great Ouse Catchment include enhancing biodiversity, fisheries and recreation and managing water resources, water quality, flood risk and waste.

Huntingdonshire District Council covers a diverse area of 350 square miles with a growing population of 167,000. The Council has a statutory duty to consider the well being of its population and to seek a balance between social, economic and environmental development. Together with its partners in the public, private and voluntary sector it has developed a Community Strategy with the following long-term vision:

Huntingdonshire is a place where current and future generations have a good quality of life and can:

 Make the most of opportunities that come from living in a growing and developing district;

- Enjoy the benefits of continued economic success;
- Access suitable homes, jobs, services, shops, culture and leisure opportunities;
- Maintain the special character of our market towns, villages and countryside; and
- Live in an environment that is safe and protected from the effects of climate change and where valuable natural resources are used wisely.

The Middle Level Commissioners are a statutory body responsible for 120 miles of major watercourses, 100 miles of which are navigable. It monitors and maintains the drainage infrastructure that supports land use in the Fens, providing protection against flooding, and maintains the Nene/Great Ouse navigation link. It works closely with local Internal Drainage Boards, the Environment Agency and local Council bodies. As with other statutory agencies it has obligations to conserve and enhance the environment where possible.

Natural England works for people, places and nature to conserve and enhance biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas. It conserves and enhances the natural environment for its intrinsic value, the wellbeing and enjoyment of people, and the economic prosperity it brings. Natural England has been charged with the responsibility to ensure that England's unique natural environment, including its land, flora and fauna, freshwater and marine environments, geology and soils are protected and improved.

It also has a responsibility to help people enjoy, understand and access the natural environment.

The Wildlife Trust for Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough is the largest charity conserving wildlife in Cambridgeshire. Its mission is "to bring people together to take action for wildlife". To achieve this mission the Wildlife Trust's five high-level objectives are to:

- Acquire land of high conservation value, and create new habitats;
- Manage land for wildlife and access to visitors;
- Gather wildlife information;
- Promote conservation by other land managers; and
- Influence people to take action.

Section 2. The Masterplanning Process

The illustrative masterplan is a spatial plan – it sets out where new physical features could be created and illustrates where existing features are retained. It shows, amongst other things, open water, wetlands, woodlands, footpaths and cycleways, buildings and car parks. The masterplan will support the achievement of the Vision and the more specific aims. The illustrative masterplan is intended to convey something of the new character which could be created - a more natural fenland landscape - very different to what is there now, but incorporating many existing features, such as the drainage ditches, the two national nature reserves and many of the buildings.

Opportunities, Constraints and Masterplanning Influences

The illustrative masterplan has been derived from bringing together an understanding of the opportunities and constraints of the physical characteristics of the site, water resources and the location and nature of surrounding communities. The project area is largely flat, very low lying land which, without pumping and maintenance of the drainage system, would be much wetter than it is now. The management of the water regime, combined with varying topography and soils, will enable different habitats to be created, including open water, reed beds, fens, wet meadows, scrub and woodland. This element of the masterplan, of creating a new landscape of different habitats, is a result of working with the natural characteristics of the site. However, it is not possible to predict exactly how the landscape will evolve, so there is an element of experimentation, which will determine the fine detail of how the Great Fen develops over the years.

Some parts of the site are on higher, undulating land where wetland creation is not possible. These areas will support a different landscape of drier grasslands, hedgerows and woods.

In order to understand how the new landscape might develop, the partners have carried out a series of baseline surveys, looking at landform, soils, peat depths, habitats, the drainage system and many other aspects of the site. There is still much

more to learn, but enough is known to be clear on the broad range of habitat creation opportunities. This scientific understanding of how the landscape can change underpins the illustrative masterplan.

The Great Fen is not a proposal to return all the current landscape to a natural wilderness nor create vast areas of open water. On the contrary, it is intended that much of the land will be managed as a traditional pastoral landscape, where grazing and hay cutting will maintain and enhance the value of the land for wildlife. It is anticipated that this will involve the local farming community who may provide livestock for grazing and other services to manage the landscape.

The Great Fen is intended to be an accessible landscape, serving the needs of nearby communities and visitors from further afield. Therefore, a key objective is to ensure that the Great Fen is as well connected as possible to Peterborough to the north, Huntingdon to the south and Ramsey to the east, as well as all the surrounding smaller settlements. In addition to longer-distance routes the masterplan includes the creation of a series of circular walks serving the surrounding communities.

There is always a challenge, with environmentally-led projects such as this, to ensure they are economically viable. The Great Fen needs to develop a new economy, based on environmental farming methods and other on-site activities. In addition, the Great Fen should be enjoyed by as many people as possible, consistent with its capacity to absorb visitor numbers. Therefore the masterplan needs to plan for visitors.

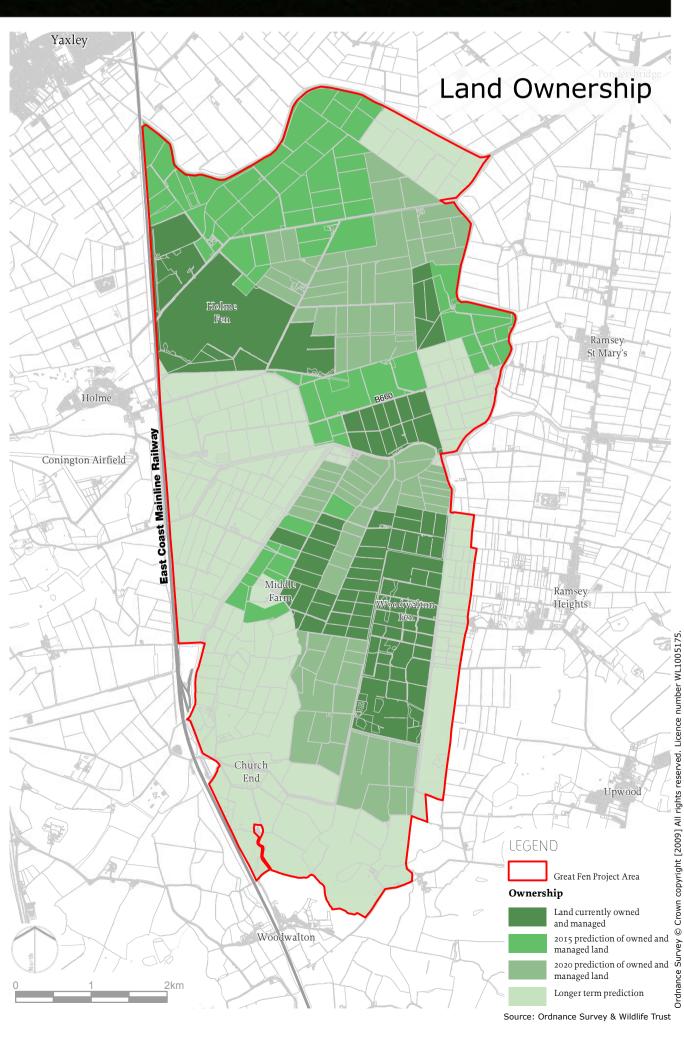


The Great Fen has enormous scope to be a 'green tourism' destination, a place where people will come for a day or more to enjoy the wonderful experience of nature and traditional landscapes. The masterplan needs to plan for visitors arriving by public transport and by car, as well as by walking, cycling and by boat. It therefore needs a focus – a place of arrival and welcome - and this is provided in the form of a proposed new visitor centre. A range of visitor gateways and village-based facilities around the project area are also proposed. Other features, such as hides, bicycle hire and opportunities to learn about and enjoy nature and cultural heritage all need to be built into future action plans.

The new landscape of the Great
Fen will take many years to evolve,
and meanwhile people will continue
to farm within the project area.
There are also private properties
throughout the project area that
will stay in private ownership. The
masterplan needs to reflect the
needs of these people in its layout
and phasing as much as possible.

The map opposite gives some indicative dates when land might be restored. However it is important to note that this land is either privately owned or under protected long-term tenancies and is therefore beyond the control of the project partners to determine when habitat recreation will take place.

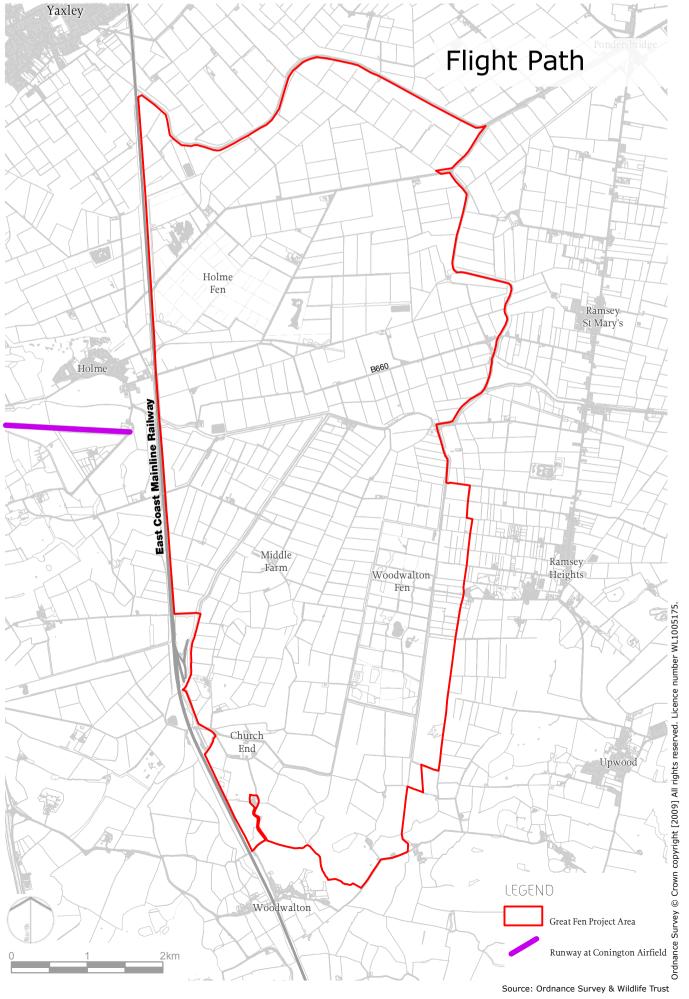
The project area contains approximately 40 dwellings that will remain in private ownership as well as other parcels of land not owned by Project Partners.





To the west of the project area is Conington Airfield, an old wartime airfield now used for civilian flying. A flying school is also based at the site. A two-kilometre exclusion zone exists around the airfield within which the construction of tall structures should be avoided in order to protect the airspace. See plan opposite indicating the flight path in purple.

Whilst the Project Partners have a broad range of experience and expertise, it has been clear from the outset that the masterplanning process needs to be informed by many stakeholders - both individuals, organisations and communities - who have an interest in the area. The Great Fen Project team arranged an extensive process of stakeholder engagement; ensuring that information was available, ideas debated and views acknowledged. The concerns and ideas which have arisen from this process have been key determinants of the illustrative masterplan.





Strategic Drivers

In addition to the existing environmental, social and economic issues of the area, there are strategic drivers which influence the masterplan. These issues are largely concerned with the principles of sustainable development and the challenge of climate change, as well as influences from planning policy.

The Great Fen area sits within one of the country's major Growth Areas, which stretches from the north of London along the M11 corridor to Cambridge and as far north as Peterborough. Major growth in housing numbers and employment provision is taking place in this area, supported by new transport, social and other infrastructure. In addition to the engineering infrastructure which is needed to support growth, Government and local authorities are clear that there needs to be environmental investment as well. The Great Fen is part of this proposed investment, known as Green Infrastructure.

The strategic drivers of the masterplan are set out in Section 3.

The masterplan has been developed by bringing together the range of opportunities, constraints and issues, some of which conflict. It requires a spatial planning process which delivers as many benefits as possible from the same areas of land. Where conflicts are likely, the masterplan has adopted a 'zoning' approach, in places setting aside areas of land which will be largely undisturbed by people, thus enabling more sensitive habitats and species to become established. Elsewhere, land can be set aside for larger numbers of people, who can enjoy nature close at hand.

In the two National Nature Reserves, there are statutory objectives for the management of habitats and wildlife, and these are reflected in the way the masterplan has been prepared.

Therefore, whilst the masterplan is illustrative, and will evolve over the years, there are many aspects of it which flow naturally from the overall vision, the characteristics of the land and the need to integrate people and economic factors alongside those of the natural environment.







Section 3. Strategic Drivers

A range of regional, national and global issues influence how the Great Fen will develop. Taking account of these issues within the design of the project will enable it to contribute to sustainable development.

Although the special characteristics of the site and surrounding communities are key influences on the masterplan (see Sections 4 and 5), there are a number of more strategic considerations, which are important influences too. The following are amongst the most important.

1. Nature conservation

Despite the rise of environmental awareness, and the popularity of environmental programmes over the past few decades, the fact remains that biodiversity is declining globally and in the UK. The countryside is becoming less and less hospitable to wildlife. Certain habitats, such as wetlands and grasslands are more threatened than others. The remaining areas of wildlife value, many of which are designated as sites of nature conservation importance, are increasingly fragmented and are too small to sustain their populations, especially with climate change and the forecast of more variable and extreme weather, such as floods, drought and temperature changes. This leads to species decline and extinctions.

The Great Fen represents an important and large-scale new initiative to locally reverse these trends and deliver national and county biodiversity action planning targets such as for reed bed, fen, wet grassland and wet woodland, as well as the species that depend on them. Although the Great Fen is being driven to serve local needs, it nevertheless has the potential to be nationally and internationally significant as a beacon of positive biodiversity action planning.



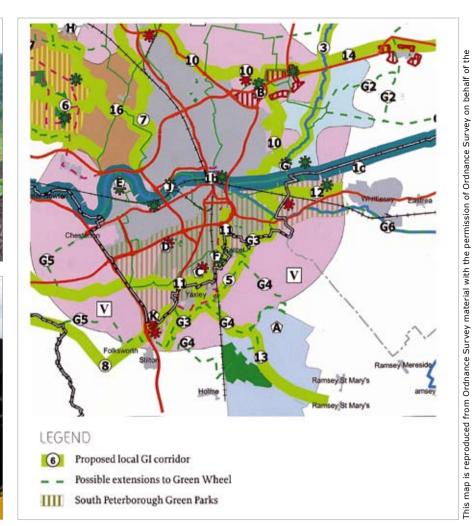












2. Climate Change

Climate change is the single biggest threat to people and nature at the present time, and action taken over the next one to two decades is likely to be critical in avoiding potentially irreversible global damage. All projects need to be planned in response to the climate change agenda. This means that developments need to show how they can adapt to the inevitable changes in climate which are already underway such as drier summers, wetter winters, more extreme rainfall events (including summer heat waves and intense rainfall events) and rising sea levels.

New developments and activities also need to mitigate the causes of climate change by minimising their carbon footprint, that is, through reducing or eliminating greenhouse gas production. For some projects, it may be possible to not only minimise greenhouse gas production, but to lock up carbon as peat soil or biomass such as woody material.

The Great Fen has the potential not only to be carbon-neutral, but to actually take carbon dioxide out of the atmosphere and lock it up as peat soil. The emission of greenhouse gasses as a result of human activities is the primary cause of climate change. One of the major contributors to greenhouse gas emissions, worldwide, is the combination of deforestation, the drainage of wetlands and intensive agricultural practices including the manufacturing of fertiliser, disposal of waste food and food processing and transport.

The Great Fen can play its part in addressing the causes of climate change, in particular through halting the process of peat degradation. It has been estimated that the oxidization of peat in the Great Fen area releases 325,000 tonnes of carbon dioxide per annum (The Open University 2008), the equivalent of being able to offset the carbon emissions of over 54,000 local householders every year.

This loss of peat through oxidation is a direct result of drainage of the land; once the peat is re-wetted and oxidation is stopped, greenhouse gasses can be greatly reduced. It is possible that conditions will allow for peat-forming processes to become re-established, locking up carbon from the atmosphere rather than releasing it. There is much more to be learned, but the Great Fen can be a positive story in the fight against climate change. Locking up the remaining carbon in the peat that still remains, and reintroducing peatforming processes, needs to be a key objective of the masterplan. Over 80 years, it is predicted that each rewetted hectare of Great Fen could result in an avoided loss of 10,000 tonnes of CO2.

3. Growth

The population of the UK is projected to increase to 65 million by 2016, according to population projections released by the Office for National Statistics. Average household size is also decreasing. Much of the housing to accommodate this growth will be focussed in the four Growth Areas around London. The Great Fen area lies in the northern part of the London-Stansted-Cambridge-Peterborough Growth Area. Peterborough and Huntingdonshire, for example, are planning for major growth in the years ahead. Between 2001 and 2021, Peterborough and Huntingdonshire are planning for a minimum of 25,000 and 11,200 more homes respectively, as set out in the East of England Plan. Additional growth is currently being rolled forward to 2031 through the Regional Spatial Strategy Review. There will, therefore, be more people living in the local area, especially the major towns and cities. All of the key aims of the Great Fen demonstrate how it can be an essential part of the larger planning picture for the Growth Area, in helping to deliver the growth in a sustainable way.













4. EconomicDevelopment

The diversification of the rural economy has become imperative to enable rural communities to survive. As well as arable crops, the Fens can provide a wide range of other goods and services to contribute to economic development. Many of these compliment other Great Fen aims. They include nature conservation (which employs local people and supports the local agricultural sector), tourism, meat production, renewable energy generation, angling and reed for thatching as well as providing access and quiet recreation for local people. The Great Fen can contribute to the local economy by incorporating these in plans for the long-term management of the project area. Furthermore the project can contribute to other activities that support economic development including volunteering, education, work experience and training. The project has a particular relevance to the regeneration of the Ramsey area.

All development involving new / extended buildings or a material change of use, within the project area, will be subject to normal Planning legislation and therefore require planning permission as appropriate. This will include relevant development promoted as part of the project and any sites / buildings remaining in private ownership. **Huntingdonshire District Council** (HDC) as the relevant local planning authority will need to consider and determine any such applications in accordance with the Development Plan and other material planning considerations. The Development

Plan currently comprises the Regional Spatial Strategy and the HDC Core Strategy, both of which refer specifically to the Great Fen. HDC are also intending to adopt a Development Management Development Plan Document, which will become part of the Development Plan and which will include more detailed policies relating specifically to development in the Great Fen area. In general it is anticipated that development will need to assist or compliment the project aims in order to be successful.

Whilst supporting economic development it is vital to conserve and enhance the historic environment within the project area.

5. Water resource management

The Fens is different to other areas of countryside because of the significance of its water management needs. The Middle Level Commissioners (MLC) and the Internal Drainage Boards (IDB) are responsible for managing drainage in the district to prevent flooding and sustain a multitude of land functions including agricultural production. The MLC works closely with the Environment Agency on water resource and flood risk issues and locally are also the navigation authority for a large part of the Fens. Future changes in the water management regime of the Great Fen will need to take account of wider water resource and flood risk management needs.

Farming on the Great Fen at the present time is only possible because of the water management regime. When required, water is pumped out of the area by a number of pumping stations to prevent flooding and waterlogging. In summer water is transferred into the Middle Level to provide for irrigation and navigation. Whilst plans for the Great Fen involve different water levels in the future, some form of pumping regime will need to be maintained, to control water.

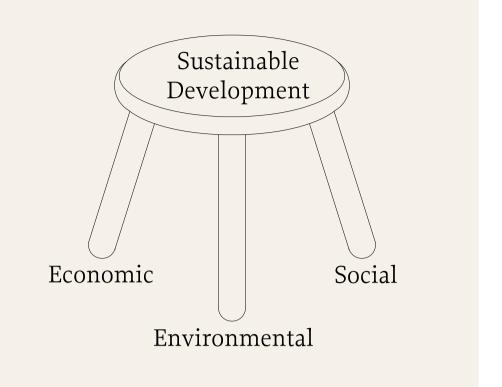
Woodwalton Fen is currently used to store floodwater, protecting surrounding land and property. This is having detrimental effects on the nature reserve, which is likely to be too small to provide adequate floodrisk management in the future. The partners are therefore investigating opportunities for enhancing the floodrisk management role of the project by providing better alternatives in the project area.

The system of pumps which maintain both the current and the planned fenland landscape require large amounts of electrical energy, which in turn is derived (at the present time) largely from the use of fossil fuel. 80% of the UK's electricity production depends on fossil fuels. The current pumping regime thus has a significant carbon footprint. There is potential, in the future, to minimise the amount of pumping required in an around the Great Fen and, therefore, to minimise the greenhouse gas emissions from off-site power stations. There is potential to use local renewable energy systems to supplement the current system, further reducing the Great Fen's carbon footprint.





The Stool of Sustainable Development



6. Green Infrastructure

Cambridgeshire Horizons, the local authorities and other organisations collaborated to produce a Green Infrastructure Strategy for the Cambridgeshire sub-region. This is expected to be updated by 2010, to include the whole of Cambridgeshire, integrated with surrounding local authority areas. Additionally, the new Green Infrastructure Strategy for Cambridgeshire is intended to ensure that Green Infrastructure (GI) is more deliverable; focussing on areas where new GI can actually be implemented. The delivery of GI is an important element of sustainable growth complementing the growth in population, jobs and associated infrastructure, providing, amongst other things, compensatory habitats and informal recreational opportunities. By providing new accessible open space and improving access to the countryside, the Great Fen is an important contributor to GI planning in Cambridgeshire, and it is important that the masterplan reflects the emerging new strategy.

7. Principles of Sustainable Development

Whilst the Great Fen may be seen as an environment-led project, delivering benefits for people through improved access, the principles of sustainable development demand that environmental, social and economic perspectives should all be considered together. Ideally, new development in the future should involve the integration and mutual support of the environmental, social and economic perspectives. The Great Fen, therefore, needs to be masterplanned, not just as a nature conservation project with access for people, but as an embodiment of the principles of sustainable development. It needs to demonstrate clear benefits for all three legs of the sustainable development stool - environmental, social and economic. The latter is especially challenging, as the world struggles to find new ways of maintaining economic development which is compatible with conservation of the natural environment and quality of life for communities.

The key strategic drivers derive from a whole range of national, regional and local strategies and policies. The most significant of which include:

- Natural England's Strategic Outcomes;
- Biodiversity Action Plans for Cambridgeshire and Peterborough;
- Regional Economic Strategy produced by the East of England Development Agency;

- Regional Environmental Strategy produced by the East of England Regional Assembly;
- Environment Agency's Flood Risk Management Strategy;
- Green Infrastructure Strategy published by Cambridgeshire Horizons and adopted by Cambridgeshire Local Authorities;
- Cambridgeshire County Council Rights of Way Improvement Plan;
- The Sustainable Community Strategies for Cambridgeshire (Cambridge Vision 2007-21) and locally for Huntingdonshire (Growing our Communities) and the associated Local Area Agreement.

These also provide the context for the spatial planning policies set out in the East of England Plan (2008) including ENV1 (green infrastructure), ENV3 (biodiversity and earth heritage) and ENV4 (agriculture, land and soils) and in Huntingdonshire's Core strategy (2009); particularly policy CS9 (strategic green infrastructure enhancement). Together these two documents are significant, being part of the statutory Development Plan covering the area of the Great Fen.

Section 4. The Physical Geography and Ecology of the Great Fen

The existing landscape, with its flat, low-lying topography, peaty soils and wetland heritage, together with the impact of modern agriculture, will have a strong influence on the Great Fen.

The illustrative masterplan for the Great Fen is significantly influenced by the physical geography of the area – its landform, soils, ecology and drainage. This informs the potential for habitat creation and management.

The aerial photograph of the Great Fen area opposite shows a patchwork of fields and two large areas of wetland, woodland and other wildlife habitat, Holme Fen and Woodwalton Fen, prominent in the landscape. To the south is higher land, where the different field pattern reflects a different landform of higher, sloping land. To the west is the East Coast Main Line Railway and running from Holme in the west to Ramsey St Mary's in the east, is the B660.



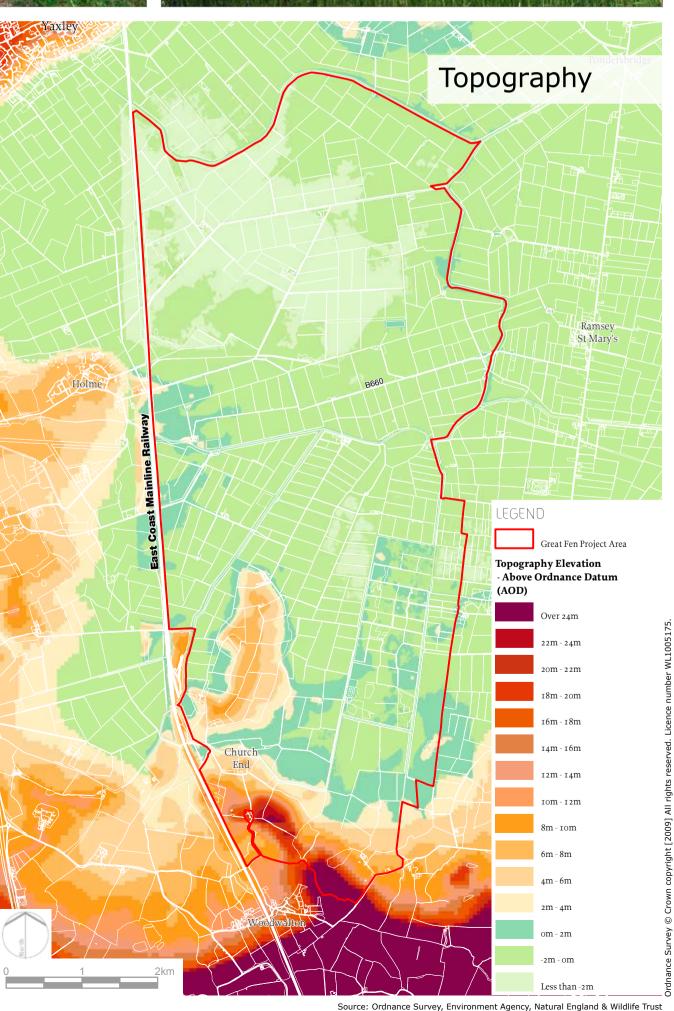
Source: Getmapping Plc & Wildlife Trust





The physical geography of the Great Fen area is best understood with reference to the topography plan opposite. As the photographs show, the majority of the land is almost flat, and is very low lying, much of it below sea level. An area to the north, on the site of the former Whittlesey Mere, is around 2-4.5m below sea level. Higher land creates a fen-edge landscape to the west and to the south the land rises more steeply to over 20m AOD. A small ridge of higher land intrudes into the project area from Church End to Middle Farm. These areas of higher land permit wonderful views northwards over the fen.

A key characteristic of fenland landscapes is the covering of peat soil, which generally overlies dense clay. Very low lying land, combined with the impermeable nature of clay, meant that, over the fenlands of East Anglia, water built up after the end of the Ice Age to create a huge area of open water, bogs and swamp. Vegetation growing in this environment died and sank to the bottom of the lakes and ponds, where the anaerobic (oxygen-free) conditions prevented decomposition The depth of organic material gradually built up to create extensive areas of peat soil.

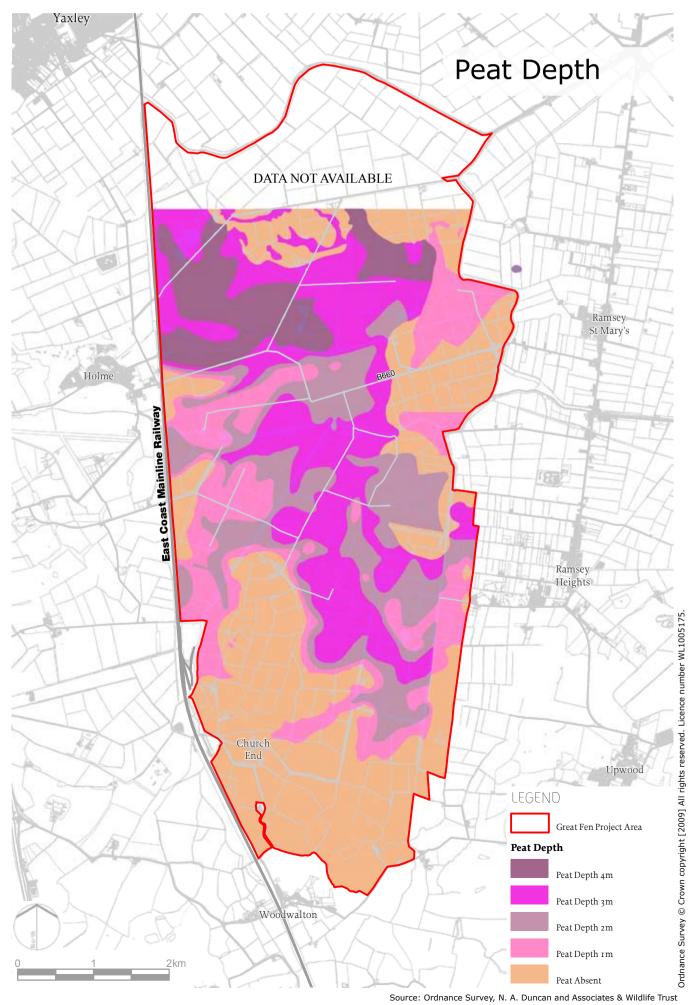




The drainage of the Fens began in earnest in the 1600s. However the western fringe between Peterborough and Huntingdon remained more or less intact until the 19th Century. The drainage of the Fens transformed this huge area of natural fenland into the flat, immensely rich arable farmland we see today.

However, the process of land drainage opened up the fenland peat to wind blow and oxidation, so the depth of peat is reducing year by year, steadily falling at a rate of 1 to 3 cm per year. The peat has already been lost in some areas. In others it will be lost in about five decades or so. The deepest areas of peat are around Holme Fen where they may last longer.

The Condition of Peat Plan (opposite) shows the depth of peat when it was recorded in the early 1970s (data is not available for the northern part of the site). Locally, there is now approximately 2 to 3m of peat remaining, but elsewhere the peat is now very shallow or absent altogether (peat never existed on the hills around Woodwalton). The depth of peat is a key influence on the masterplan. In some areas, the depth of remaining peat can be stabilised through rewetting, and this will be a key objective for the future.





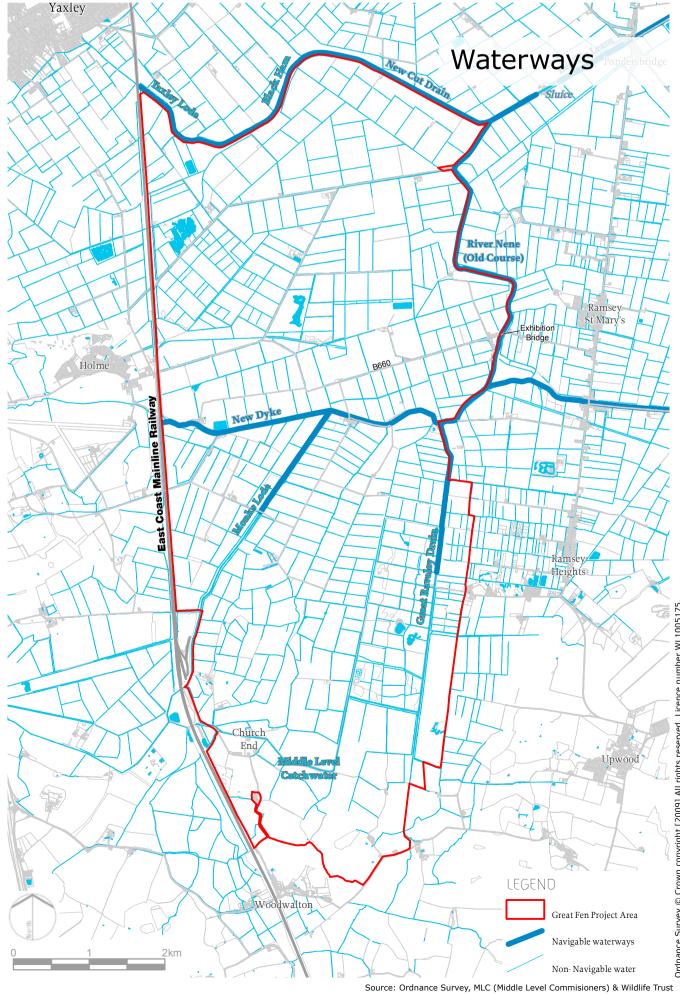






There are other considerations in developing a new landscape in which around half the area is formed of peat soils. In particular, peat is, by its nature, soft, with low load-bearing capacity. It is easily churned up by people, cycles and horses, and is not capable of taking buildings or roads without special foundations. Where new routes are to be created, therefore, special solutions such as boardwalks, or the construction of paths over a permeable membrane base, will be required. Open access on grassy fields, which might be possible on the higher land to the south, will be much more difficult on soft, wet peaty soils.

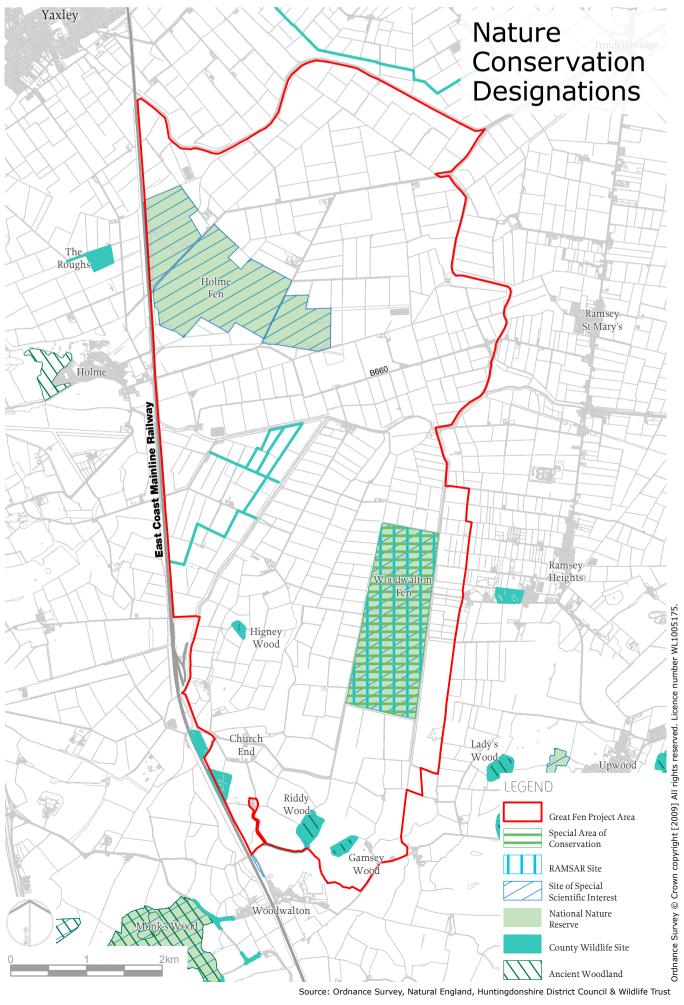
Throughout the Great Fen area is a network of drains and waterways, shown on the plan opposite. This network of drains and waterways is man-made. The New Dyke and northern ends of the Monk's Lode and Great Raveley Drain are capable of taking leisure craft, but a low bridge at Exhibition Bridge on the B660 prevents larger craft travelling any further north on the Old Nene. Elsewhere, waterways are smaller, currently unsuitable for navigation and used purely for drainage. A small number of pumps are used by the Middle Level Commissioners and the Internal Drainage Boards to control water levels for the purposes of agriculture and public safety. The key to the rewetting of peat and the creation of new wetland landscapes lies in the careful and skilled management of pumping regimes, enabling water levels to be raised in some areas without affecting farmland or other land and property elsewhere.





Further work on waterways and drainage will be needed in the future, but the masterplan has the potential to incorporate greater access for leisure boating, together with the retention and potential expansion of angling.

The Great Fen area contains two nationally important sites. Holme Fen is a National Nature Reserve as well as a Site of Special Scientific Interest. These designations apply to Woodwalton Fen which, in addition, is a Ramsar site (a wetland of international importance) and a Special Area of Conservation (a European Union designation). In addition, a network of drains in the middle of the Great Fen is designated as a County Wildlife Site for the variety ditch plants found there. To the south are four County Wildlife Sites, two of which are Ancient Woodland, which means they have been under continuous woodland cover since at least 1600 AD.



"a huge, quiet open space, providing a contrast to the hustle and bustle of city life......

Unique is a word that is used too frequently, but this really is a unique project and landscape."

Sir John Major - Great Fen Patron, 30 November 2007

These various nature conservation designations are of great significance as influences in the masterplanning process. It is essential that proposals in the masterplan ensure that the designated sites are protected and that issues such as changes in drainage regimes and public access are very carefully considered for any potential impacts on existing habitats. Additionally, the creation of new habitats around the two National Nature Reserves opens up the scope for buffer areas to be created and key habitats to be expanded into surrounding areas, increasing their resilience.

One of the major challenges for wildlife conservation in the UK, and globally, is that remaining natural and semi-natural habitats have become fragmented and isolated from one another, and are often too small in extent to survive. A key nature conservation objective is, therefore, to link habitats. Two nature conservation objectives are therefore major influences on the masterplan - to link habitat between Holme Fen and Woodwalton Fen and to create linkage of woodland through natural regeneration of the isolated woodlands to the south of the site.

Although there are isolated pockets of nature conservation interest elsewhere within the Great Fen area, the land is generally intensively farmed and of limited wildlife value. A primary objective of the masterplan is to transform this situation – to greatly increase wildlife and habitat diversity across the whole project area, and to buffer and link the currently isolated designated sites of national and international nature conservation importance.

Holme Fen - aerial view looking south east towards Woodwalton Fen, taken north west of the East Coast Main Line Railway



Woodwalton Fen - aerial view looking south towards Woodwalton



Section 5. People, Communities and Heritage

The Great Fen is going to be a place where people can work, explore, learn and enjoy. The location and characteristics of settlements surrounding the project area and the needs of the people living within them influences how the project develops.

The masterplan for the Great Fen needs to take account of the many influences concerning people, communities and heritage. The vision for the Great Fen is about bringing benefits for people, as much as it is about wildlife. These benefits include opportunities for recreation, relaxation and improving health and well being. There are also economic benefits; the potential to create new jobs related to more environmentally sustainable ways of living; green tourism; high quality local beef production; environmental education; cycle hire; leisure boating and many other activities. These significant potential benefits for local people need to be set against the need to minimise any potential adverse impacts, and the Project Partners are committed to a continued process of public and stakeholder consultation and engagement in order that any issues are addressed through the masterplanning process.

The Great Fen area, although shaped by its physical geography, is nevertheless a man-made landscape. The Fens have been occupied by people for millennia, creating a rich history of occupation. The history of people in the Fens is well known but much remains to be discovered, including archaeological remains within the remaining peat soil.

Today's Great Fen landscape was formed by drainage, agriculture undertaken over the last 150 years. There are individual dwellings and farms within the project area, and the largely high quality soils supports some employment in the agricultural sector. The views of some people who are resident within and immediately adjoining the project area have been explored through stakeholder workshops, and have been taken account of in the masterplanning process. Although the Great Fen Project Partners now own significant parts of the project area, the remainder of the land remains, and is likely to remain, within the current farming regime and ownership for some time ahead (see Landownership Plan on page 13).

One of the key aims of the Great Fen is that it is planned to be economically viable and to bring economic benefits into the subregional and local economies. An important element of this is the promotion of sustainable tourism people visiting the area to enjoy the natural environment, heritage and other assets of the area. The rich social history of the Fens has provided opportunities for the Project Partners to develop significant arts projects, such as classical concerts in Cambridge and Peterborough and the production of artwork by internationally renowned artists.

This broadens the appeal of the project. Additional visitors, whilst bringing economic benefits, will arrive by a number of transport modes, including the car.

A key aspect of the masterplanning process is, therefore, to ensure that the visitors can arrive by sustainable modes of transport as far as possible and that any traffic impacts in surrounding villages are minimised to an acceptable level.

The promotion of the Great Fen as a visitor destination has the potential to bring significant benefits to surrounding villages. For example, an increase in overnight stays could benefit hotels and bed and breakfast establishments. The creation of cycling facilities opens the potential for new cycle hire businesses to be established. There is scope for cafes and other visitor facilities to be supported and to be established as a result of the success of the Great Fen.

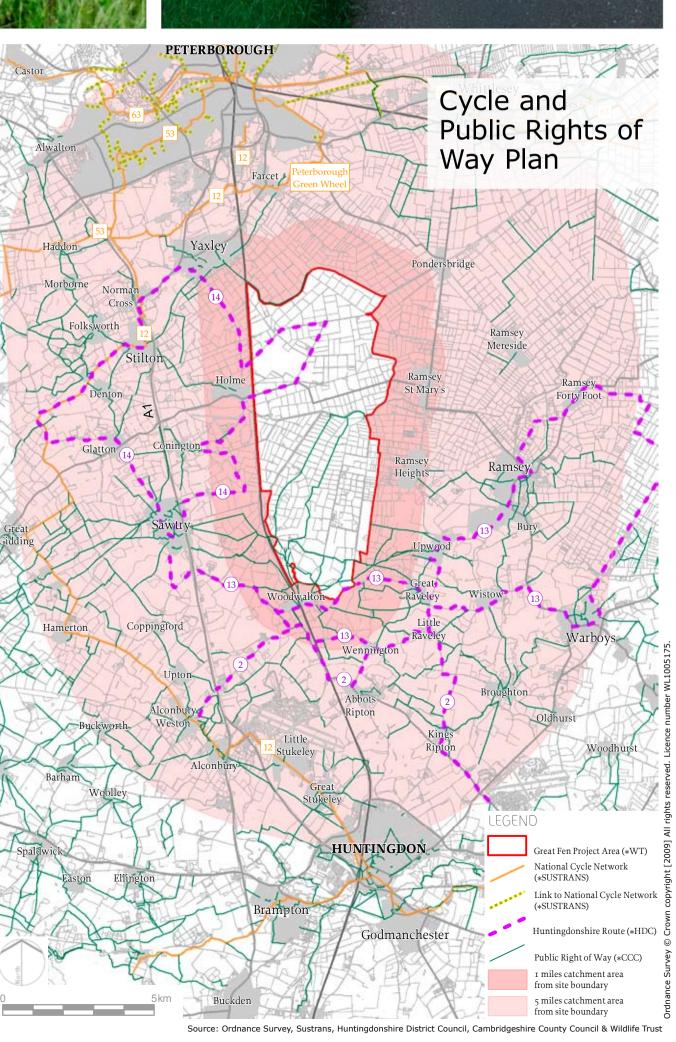
One of the considerations for the masterplan, therefore, is the way in which the Great Fen benefits and integrates with the surrounding villages and other settlements, whilst ensuring that any potential adverse impacts are eliminated or reduced to acceptable levels.





Surrounding the project area are a number of communities, including market towns and villages, and larger populations of Huntingdon and Peterborough – these are shown on the plan opposite. A key influence on the masterplan is the objective of enabling access by people in these communities to and around the Great Fen by footpaths, cycleways, bridleways and, in a limited number of cases, by waterways. Additionally, there will need to be opportunities for people to drive and park in selected locations, from where they can join a network of access routes in order to enjoy the Great Fen.

Within the Great Fen area, there are already some rights of way, especially in the southern half, as shown on plan. In addition to these statutory rights of way, there are a number of tracks and drove roads, which allow access to the land and which, subject to land ownership and control, could form part of the future access network.









The Great Fen is within two miles of the A1, which is just west of the project area. The Atkins Transport Study estimated that 70% of the traffic will come from the west of the project area. Although the Partners have no control over the provision of public transport in the area, they are also continuing to work with community and public transport providers to provide alternative access.

The project partners have worked closely with access specialists, disability organisations, and a wide range of users of all ages, interests and abilities, and will continue to do so through the life of the project. Through involving people throughout the planning process, the partners aim to identify, reduce and remove barriers to access, whether physical and sensory, intellectual, social and cultural, or organisational.

To the north of the project area is Peterborough, a large city which is undergoing continued growth, notably at Hampton and in surrounding areas, including the villages of Yaxley and Farcet to the south west in Huntingdonshire. A southerly expansion of Peterborough, potentially as far as Norman Cross, brings Peterborough even closer to the Great Fen. Peterborough has well established environmental credentials, being the second designated Environment City, and being promoted for the strength of its environmental industries. The Peterborough Green Wheel is a network of footpaths and cycleways surrounding the city, with links to the city centre and greenspaces.

There is potential to link the Green Wheel physically, through footpaths and cycleways, with the Great Fen, introducing considerable benefits to the quality of life of communities within the city.

To the south of the Great Fen is Huntingdon, a market town. With a distance of 9km, the Great Fen is a little too far from Huntingdon for all but the most dedicated long-distance walker, but it is close enough for cyclists and is a short distance away for travel by bus or car. One of the key masterplanning objectives is to maximise potential connections between Huntingdon and the Great Fen, through rolling and attractive countryside. This includes connecting the project area to Sustrans National Cycle Route 12, to the west.

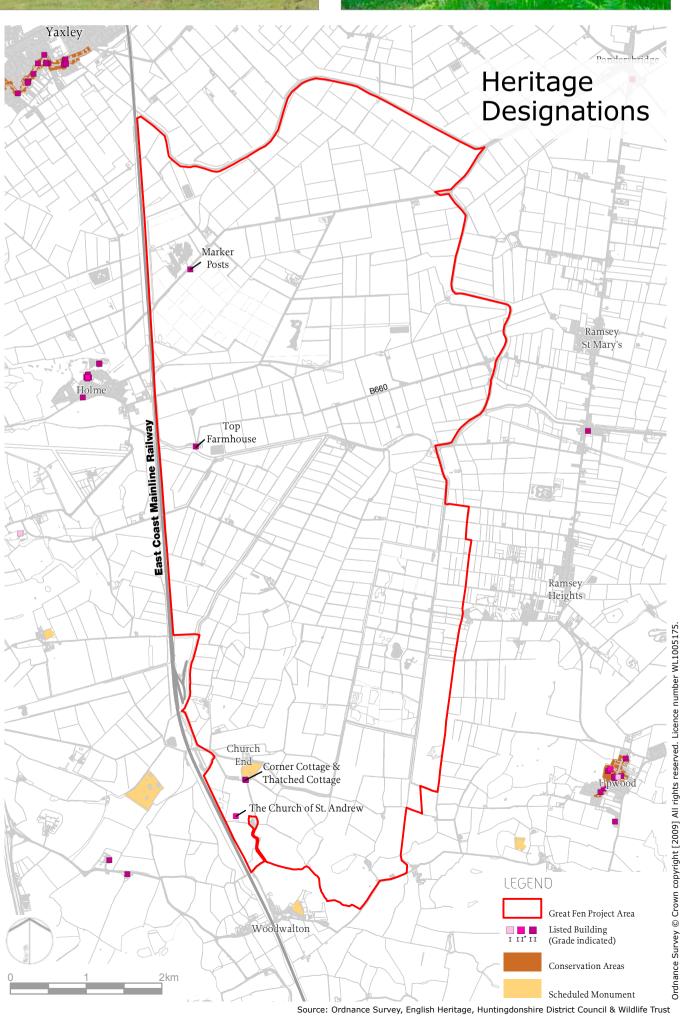




Although the Great Fen area is dominated by agriculture and the two National Nature Reserves, there are a number of features of heritage interest, shown on the plan opposite.

There are four listed structures within the project area – The Holme Fen post (above), Top Farm House, St Andrew's Church (above) and a thatched cottage at Church End. St Andrew's Church is perhaps the most memorable landmark of the project area. There are statutory obligations to protect all these heritage features and their settings, and this needs to be taken account of in the masterplan. Equally, publicly accessible heritage features (St. Andrew's Church and Holme Fen post) should be part of the recreational experience of the Great Fen, and carefully incorporated into the access network as part of the masterplanning.

Beyond the project area there are many other features of heritage interest such as Peterborough Cathedral, Ramsey Abbey, Flag Fen, Ramsey Rural Museum and Peterborough Museum. The Great Fen, together with these existing attractions, will provide many opportunities for heritage tourism.



Section 6. Great Fen Aims and Objectives

The Great Fen will produce social, economic and environmental benefits. These will be underpinned by the need to help mitigate and adapt to climate change.

All of the issues described above have influenced the illustrative masterplan for the Great Fen. These influences range from major global issues, such as sustainable development and climate change, to regional planning considerations, such as integration with Cambridgeshire's Green Infrastructure Strategy, to local considerations such as footpath

links to local communities and the encouragement of a new green local economy.

The Project Partners have determined four key project aims that relate to social, economic and environmental development as well as adapting to, and mitigating, climate change. The aims for the Great Fen are shown on the following pages.

"The Fens stand as one of the most misunderstood, neglected and extraordinary features of the British landscape. Not to mention beautiful......... They are a remarkable part of our (agri)cultural, historical and engineering history. I am very proud to be involved with a new drive to protect, understand and evangelise this unique part of our country."

"In my lifetime, I am sure, that with a bit of help from all of us, flocks of majestic cranes will be gliding down to nest in England's Everglades."

Nigel Merven - Presenter of the BBC series Walking With Dinosaurs and Great Fen Project Partron (quote taken from Peterborough Evening Telegraph 12/08/09 - Stephen Briggs)



Aim 1. Natural and Historic Environment

To create a new resilient fenland landscape which delivers major wildlife and heritage benefits and achieves high standards of sustainability in all respects

- 1.1 Create and sustainably manage a varied mosaic of characteristic fenland and fen-edge habitats, linking Woodwalton and Holme Fen National Nature Reserves.
- 1.2 Significantly contribute to the delivery of UK and Local Biodiversity Action Plan targets for priority habitats and species.
- 1.3 Ensure the project contributes to the delivery of local and regional green infrastructure networks.

- 1.4 Conserve and enhance features of importance to the historic environment.
- 1.5 Ensure that all construction, engineering and land management achieves the highest standards of design in terms of quality, accessibility and sustainability.
- 1.6 Relieve pressure on Woodwalton Fen following severe rainfall by creating supplementary flood water storage arrangements that satisfy operational requirements.









Aim 2. Social

To create an accessible, inspiring and tranquil environment for recreation, education, health and wellbeing

- 2.1 Seek to link the Great Fen to local and national access routes and promote sustainable transport.
- 2.2 Provide a variety of access opportunities for visitors to the Great Fen from local communities and beyond, compatible with the project's natural environment objectives, including circular routes within the Great Fen of different lengths and diversity of experience.
- 2.3 Provide a wide range of compatible recreational and educational activities to inform, inspire and engage people, supporting good health and wellbeing.

- 2.4 Provide, and facilitate others to provide, a range of interpretation, amenities and services appropriate to their location that are accessible to all.
- 2.5 Encourage research opportunities and links to the scientific community to optimise the use of the site for environmental research purposes.
- 2.6 Provide opportunities for learning to help people develop the awareness, knowledge, attitudes, skills and participation that will support the conservation of local heritage.
- 2.7 Engage and inform local communities and inspire them to participate in the conservation of natural and cultural fenland heritage and develop a sense of ownership for the Great Fen.









Aim 3. Economic

To contribute to diversification and development of the local economy, consistent with environmental and social objectives

- 3.1 Support and provide opportunities for local businesses and cultural, educational and recreational activities, consistent with relevant planning policies.
- 3.2 Establish an iconic visitor centre that will act as a hub for visitors to support economic development whilst providing appropriate facilities for the local community.
- 3.3 Forge links with surrounding environmental, cultural, heritage and other attractions to help develop the local tourism-related economy.
- 3.4 Create opportunities for new jobs and income streams through land management and visitor enterprises.
- 3.5 Continue to contribute to water resource management in the Middle Level Drainage System.









Aim 4. Climate Change Adaption and Mitigation

To plan, design and manage the Great Fen to benefit climate change adaption and mitigation

- 4.1 Contribute to the reduction of greenhouse gas emissions through land use and management within the Great Fen.
- 4.2 Provide flood water attenuation to support catchment management objectives during extreme rainfall events and water storage capacity to cope with summer droughts.
- 4.3 Allow for climate change within the design and management of the Great Fen, enabling the range of habitats and species to adapt and change, providing greater resilience.
- 4.4 Seek to minimise the carbon footprint of travel, buildings and other activities.
- 4.5 Provide appropriate educational opportunities to help engage the public with climate change issues and the future impact on the landscape.









Section 7. The Great Fen Masterplan

The Masterplan outlines in broad detail what the Great Fen might look like in the future, including the arrangements of different wildlife habitats, visitor facilities in and around the project area and the main routes providing access for visitors.

The Masterplan is a spatial plan which is used to guide the long term delivery of the Great Fen vision and aims and objectives. It describes what might be achieved on the ground.

Key themes that inform the masterplan include:

- Habitats
- Landscape character and structure
- Land and water management
- Visitor gateways
- Access

These themes, and the way they interact, will strongly influence the visitor experience and are described on the following pages.

Habitats

A wide range of habitats are proposed, creating sequences from open water through reed beds, fens, to wet grasslands and, on the higher fen-edge, drier grasslands with woodlands and hedgerows. This variety of habitats will provide opportunities for a very diverse range of wildlife. A glossary of the habitat type definitions can be found at the end of this report. Open and semiopen habitats are expected to occupy much of the project area. In addition, a range of woodland habitats will form across the Great Fen depending on the water regime.

Habitat management

The grazing of wet and dry grasslands will dominate large parts of the Great Fen and much of the livestock used will provide meat for the market. Other parts of the project area may be grazed with animals that will live year-round in the Great Fen. This grazing will help prevent the natural regeneration of trees and scrub, and will maintain meadow pastures and thus a more open character. Different management regimes and techniques within the Great Fen will provide a range of habitats.

Some areas will be more actively managed to create particular conditions and this may produce a useable product. Good examples include timber and coppice from woodlands, reed harvesting for thatching and hay for winter food or energy generation.

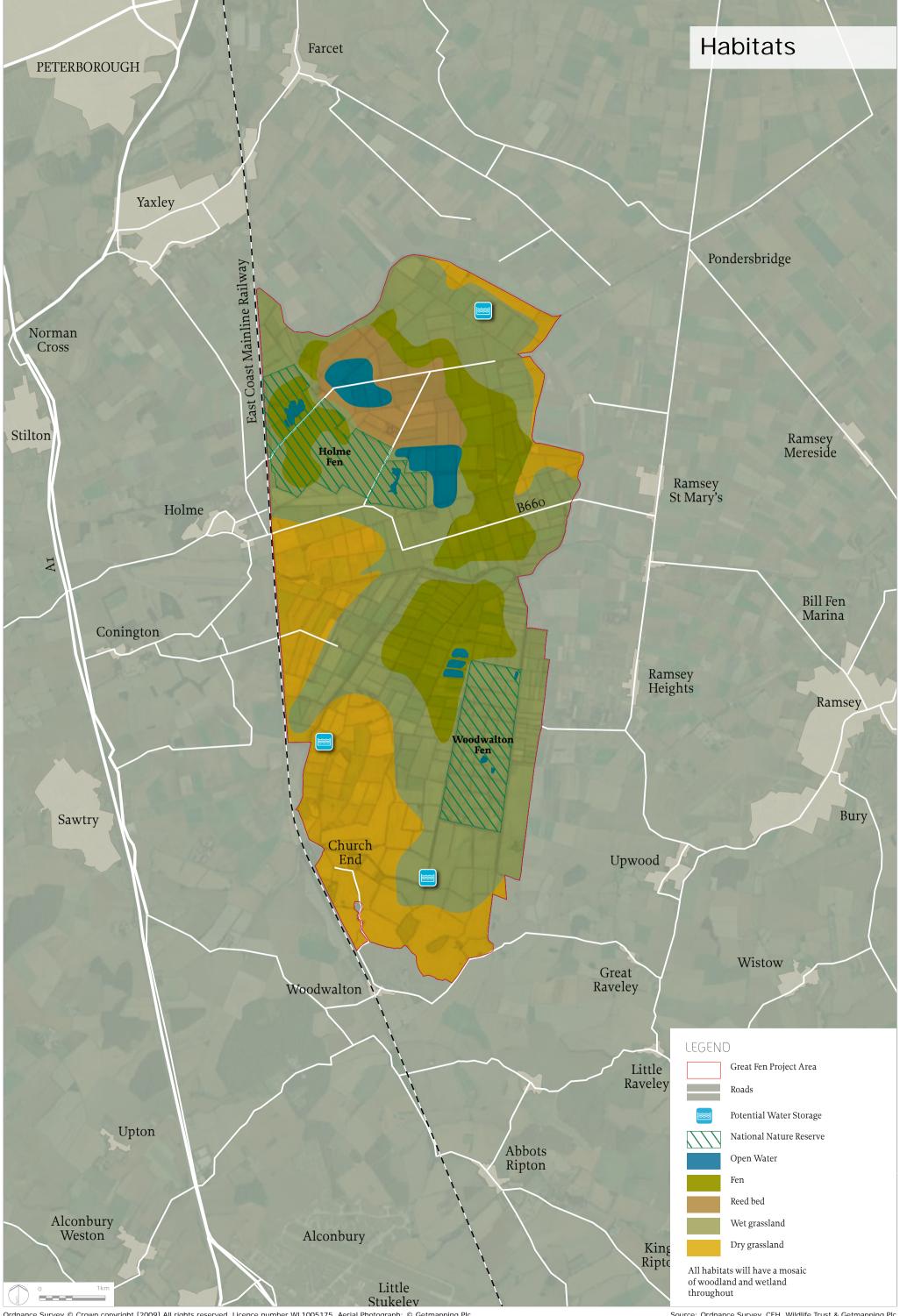
Timescale

Landscapes are dynamic. At the Great Fen in particular, natural processes will mean that habitats will change over time. In particular, scrub and trees may become established in some areas that will have once been entirely open land. These natural processes will be allowed to develop in some areas, but managed and controlled elsewhere.

Landscape character and structure

The landscape concept for the Great Fen is closely related to the habitat plans. The landscape concept is concerned with the way people experience the land, primarily visually but also through the other senses the sound of birdsong or rustling reeds, the smell of cut wood and the feel and sensation of different plant species. The character of the landscape will be greatly influenced by the different habitats and the way the land is managed. The experience of walking on a boardwalk through reed-beds will be quite different to cycling on a causeway across broad open pastures or exploring ancient woodlands.

The habitat types are explained and illustrated on the following pages.



Habitats

Open water - lakes, ponds and ditches



- Gunddanna

With the raising of water tables will come a whole range of new open water habitats to complement those of Holme Fen and Woodwalton Fen. Perhaps some of the most spectacular of these will be new, large shallow lakes or meres in the northern part of the project area close to Holme Fen National Nature Reserve.

These new meres will provide valuable habitat for wintering birds, breeding birds, invertebrates, fish and plants. The open water habitat that will develop in the meres is a UK Biodiversity Action Plan (BAP) priority habitat type.

These water bodies may be as large as one kilometre across and are likely to support a range of aquatic plants. Reeds, other emergent vegetation and aquatic plants such as yellow water-lily will develop around their margins. The meres are likely over time to support a diversity of fish including pike, rudd, perch, tench and common eel. In the vegetated margins smaller fish such as sticklebacks will thrive among the reed stems and other aquatic vegetation.

The fish of the meres will provide food for otters and birds such as kingfisher, grey heron, bittern and great crested grebe. The flooded reed edges of the meres, ditches and small water bodies will provide breeding habitat for water beetles, dragonflies, damselflies, frogs, toads and newts including great crested newt which is a UK BAP priority species.

The large expanses of water are likely to support a wide variety of breeding waterfowl including commoner species such as little grebe, great crested grebe, tufted duck, pochard, mallard and coot, but rarer breeding species such as garganey may also be attracted to the new meres. Large water bodies are also likely to attract large numbers of winter waterfowl including for example, widgeon, teal, gadwall, and shoveler as well as other rarer species on passage such as the spectacular osprey.

Otter and water vole are both UK BAP priority species and the new wetland habitats of the Great Fen will provide extensive habitat for these much loved aquatic mammals. Most species of bat in the UK are attracted to wetlands to forage, but daubenton's bat and the soprano pipistrelle are perhaps most closely associated with open water habitats and both these species should flourish in the new extensive wetlands.

Throughout the Great Fen area there will be a myriad of ditches, drainage channels and small ponds. Some of these will be remnants of the existing ditch and drain system, whilst others will be newly formed drainage channels, purposefully dug ponds and ephemeral water bodies that develop in natural depressions. The ditches will form an intricate network of linear habitats providing valuable homes for water voles, otters, fish, breeding waterfowl, amphibians and invertebrates such as dragonflies and water beetles and relatively uncommon plants including the carnivorous bladderwort and the scarce water violet, both which occur in the ditches at Woodwalton Fen.

New ponds will provide habitats for frogs, toads and newts, including the great crested newt. Ponds are also a UK BAP priority habitat type and there is great potential to create a wide variety for ponds from large permanent water bodies to small seasonal pools.

The wetland habitats of the Great Fen will provide excellent habitat for grass snake that feeds largely on amphibians and lays its eggs in rotting vegetation such as the accumulated dead stems of common reed.

Image reference - Opposite page

1. Open water fringed by birch
2. Kingfisher watching over the water from a stand of reeds
3. Scarce Chaser dragon fly
4. Grey heron stalking
5. Mere fringed with reed and other emergent vegetation
6. Water vole
7. Great crested newt
8. Coot
9. Ditches forming linear habitats



















Reedbed



At the shallower margins of the meres tall emergent vegetation typically growing to 2 to 3 metres in height will fringe the open water. For the most part this vegetation will be dominated by common reed and large parts will remain permanently wet with reed standing in up to 1 metre of water. Reedbed is a UK BAP priority habitat and the Great Fen has the potential to accommodate one of the largest stands of common reed in the UK.

Reed stands in permanent standing water tend to be dominated by just common reed, but in shallower areas and areas where the water table may fall below the surface during the summer months a range of other fen species occur creating more diverse community which will grade into other wet fen communities, wet woodland and wet grassland habitats.

Paths through reed stands have restricted views, giving a sense of being lost within a wild landscape, but they can also be focal points for seeing and experiencing wildlife. These edges provide valuable diversity in terms of sunny glades or flower rich grass margins that provide foraging sites for butterflies and dragonflies and a variety of other invertebrates. Within the reedbed landscape there are also likely to be areas of higher ground that may become colonised by isolated trees and shrubs or clumps and small copses of willows and alder which will add another vertical dimension.

The variety of plants within the reedbed will be determined by subtle differences in water depth and fluctuation throughout the year, soil characteristics and management. In richer areas the reedbed can support many colourful tall herb fen plants including yellow flag, purple

loosestrife, meadowsweet, angelica, hemp agrimony and cyperus sedge that compete with the common reed. In the more open structure of these reedbeds the ground flora can support smaller plants such as water mint, gypsywort, marsh bedstraw, lousewort and forget-me-nots. Rarer plants of this part of the reedbed habitat include the marsh sow thistle.

The forest of millions of reed stems will provide ample nesting habitat for typical bird species of reedbeds such as reed warbler, sedge warbler, whitethroat and cuckoo. Reed bunting is a UK BAP priority species and it will also benefit from the new reed bed and fen habitats as will grasshopper warbler with its distinctive and evocative, evening reeling call.

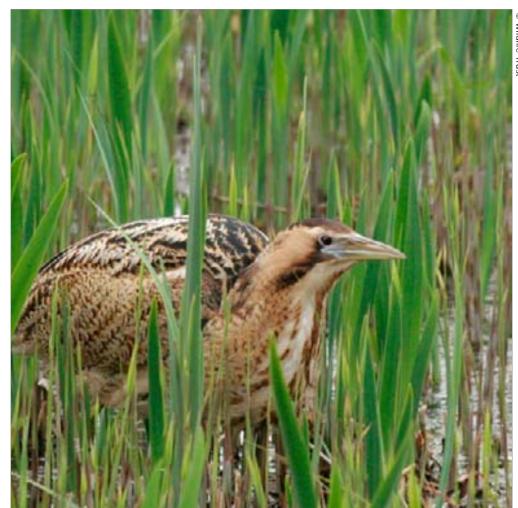
The large expanse of reedbed is also likely to attract breeding pairs of the rare bittern which typically have home ranges of 10 to 20 ha of reedbed. This is a specialist of the reedbed habitat a UK BAP priority species. Other less common breeding birds likely to colonise the Great Fen include Cetti's warbler and bearded tit.

Reedbeds are important habitats for invertebrates with 700 invertebrate species recorded from them (RSPB 1996). Many species are very rare and are classified as Red Data Book species, others are commoner but restricted to reedbeds.

Apart from otter the main mammals likely to benefit from new expanses of reed are bats that will forage for insects and the harvest mouse that is known to make its nests in among the reed stems.

Image reference - Opposite page

- 1. Bittern stalking
- ^{2.} Purple loosestrife
- 3. Angelica
- 4. Water mint and Gypsywort
- Reed stands and coppiced willow along ditch
- 6. Reeds fringing open water
- 7. Muntjac amoungst reedbed















Fen



Away from the lowest lying parts of the Great Fen area, where it is predicted there will be permanent standing water, the water table is likely to fluctuate throughout the year and between years. At times the water table will fall below the soil surface for a period in mid-summer, otherwise the soils are likely to be waterlogged for much of the rest of year. Here stands of common reed along ditches and around ponds will merge into lower growing fen communities dominated by sedges, or other wetland plants.

Some of these communities will be dominated by single species whilst in other parts of the Great Fen the fen communities will be rich in plants Species such as common reed, purple small-reed and various sedges will create a tall, grassy appearance, within which a range of flowering plants will grow, such as meadowrue, yellow loosestrife, greater bird's foot trefoil and hemp agrimony. It is likely that the boundary between fen and reedbed, fen and wet grassland and fen and wet woodland will often be blurred as one habitat type gives way to another. In other places the boundary may be sharp and clearly delineated by a path or ditch or a change in land management practice such as grazing or reed and sedge cutting. This variety of gradation between habitats will create a sense of a wild, intricate and dynamic landscape.

Image reference

1. Sedge cut and heaped
2. Lower growing fen plant communities
3. Pintail
4. Greater Tussock sedge growing up to 1m high









Bog



Areas of acid peat and remain at Woodwalton Fen and Holme Fen and this gives rise to Peat bog, a special king of habitat more commonly pound in north west of the UK. At Holme Fen there is also an area where the relic bog remains. Where deeper peat soils remain rewetting may lead to the colonisation of plants and animals more characteristic of recovering bog such as cross-leaved heath, ling heather, bog myrtle, tormentil and purple moor grass and even some bog mosses.

Although these areas may be small they will add significant additional diversity to the Great Fen providing a glimpse of the past landscape of the Great Fen area and a possible view of what might develop in the future. These acid peat bog communities are a UK BAP priority habitat type and support a characteristic suite of plants and animals many of which are restricted to this habitat type.



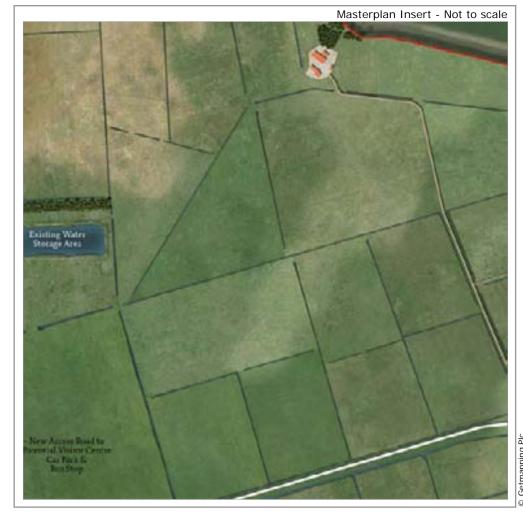




Image reference

- 1. Acid bog and birch trees
- ². Rewetting of peat soils
- 3. Colourful bog mosses

Seasonally wet grassland and marsh



Large parts of the Great Fen area, which are flooded in the winter but dry out later in the year, will support marsh and seasonally wet grassland. This open grassland landscape will be crossed by ditches with water at or just below the soil surface for much of the year with strips of emergent aquatic and fen vegetation along their banks giving away their presence in the fields. The ditches will provide boundaries to fields and safe crossing points will be marked by gates and short sections of fence.

The open sky may be punctuated by occasional trees and shrubs along ditches and paths and in small unmanaged wetter corners of fields. The grassland areas will support a variety of pasture grassland, tall herb and fen meadow communities with areas of rush, and tussocky grassland, bare ground following winter flooding and permanent low grazed pasture.

The grassland communities will merge with fen communities and the intermediary habitat, where sedges and grasses jointly form a significant part of the sward, may provide habitat for the rare fen violet which grows at just 3 sites in the UK including Woodwalton Fen. It is also a UK BAP priority species. The diversity of plants within the wet grassland habitats will be influenced by the hydrology, soil reaction and nutrient status. However, colourful plants of wet grassland that may occur include marsh thistle, ragged robin, marsh marigold, lady's smock, yellow flag, and meadow sweet.

Much of the grassland is likely to be grazed and parts managed as fen meadow with grazing taking place once the hay as been cut and removed. The open low structure of grazed wet grassland will provide nesting habitat for waders such as snipe, lapwing, redshank and curlew, all of which have suffered large declines over the last 60 years due to agricultural intensification. The grassland in drier areas will provide habitat for brown hare, a UK BAP priority species and a variety of small mammals, which in turn will attract birds of prey such as the barn owl, short-eared owl and long-eared owl and other predators such as stoat and weasel.







Image reference

- 1. Boxing brown hares
- 2. Rare fen voilet
- Seasonally wet grassland used for grazing

2

3

Woodland and scrub



Over time many wetland habitats proceed through a series of changes from open water through swamp and fen vegetation to eventually woodland habitats. Wet woodland associated with fenland habitat is rare and stands are usually small or fragmented. For this reason wet woodland is a UK BAP priority habitat.

The Great Fen will not support extensive blocks of new wet woodland as significant stands occur at Holme Fen and Woodwalton Fen. However, over time small stands of scrub and woodland dominated by alder, and willow species will develop. Some of this may be an extension to the existing woodland at Holme Fen but elsewhere there will be small wooded areas creating a patchwork of scrub and woodland habitat within a larger open water, fen and wet grassland landscape. Although wet woodland will not cover extensive areas of the Great Fen it will be an important component of the fenland landscape providing habitat for nesting birds such as long-eared owl, roosting habitat for bats and dead wood habitat for invertebrates.







Image reference

- Coppice willow marking ditch lines
- Fen
- 3. Birch woodland at Holme 4. Patchwork of scrub and



The fenland edge, a dry grassland and woodland mosaic



The Great Fen area not only encompasses land at or below sea level that will be returned to fenland habitats, but also land that rises above the former fenland area creating a natural edge to the fenland landscape. These areas are located in the southern part of the Great Fen area on Oxford Clay and are predominantly 2 to 8 metres above sea level, although the highest land rises up to 24 metres. Peat is absent from the higher ground which supports clayey soils that can become seasonally waterlogged. There are three ancient woodland sites on this higher land, but otherwise the land is dominated by arable fields and hedges

Although not fenland these areas support wildlife in the form of ancient woodland and hedgerows. There is the potential to enhance this landscape for biodiversity through the expansion of native woodland cover, the replanting or enhancement through supplementary planting of hedgerows and the creation of meadows and pasture to diversify the landscape.









Image reference

- Higher undulating land with pockets of ancient woodland and hedgerows
- New native planting to enhance existing and create new hedgerows

- Meadow pasture Patchwork of native

Landscape character and structure

The landscape experience of the Great Fen will be strongly influenced by perceptions of scale and enclosure

Wide, open spaces are a natural component of the Fens and will dominate the Great Fen Area.

In some places, however, the scale will be more intimate, with enclosed woodland or reed beds restricting the view.

Trees can be used to frame views, provide enclosure and screen development. Blocks and belts of trees can be used to control sequences of views as visitors move through the landscape, or arrive at a visitor facility.

The masterplan brings together the habitat proposals with the landscape vision to create a completely integrated plan.











Land and water management

Farming is the predominant land use of the Great Fen at the present time. The landscape and habitat vision for the Great Fen will take decades to achieve, partly because arable farming is expected to remain in parts of the Great Fen for many years. Elsewhere restoration has started and approximately 1000 hectares of land will be under conservation management by the end of 2013.

The proposed land management approach will be less intensive and more traditional in character. Grazing will dominate, with other activities such as hay cutting and reed harvesting also taking place. These lower intensity regimes will have a number of major advantages. Firstly, they will be compatible with the wildlife conservation objectives for the Great Fen. Traditional, low intensity management will create lightly grazed pastures which are ideal habitats for a range of fenland plants and animals.

Secondly, traditional farming landscapes are much loved by people. The presence of grazing animals provides a visitor experience which is generally not possible to find elsewhere in the Fens.

Water management will continue in the Great Fen area. Existing ditches and drains will be used to move water around and water levels will be raised where new wetlands are being created. Elsewhere, such as around private properties, water levels will remain low in order to protect land and buildings. In some circumstances it may be necessary to remove water from the project area using existing pumps.

The partners are investigating how the project area can be used to better protect land and property from the threat of flooding. Climate change is likely to result in a greater frequency of flood events as the weather gets stormier.

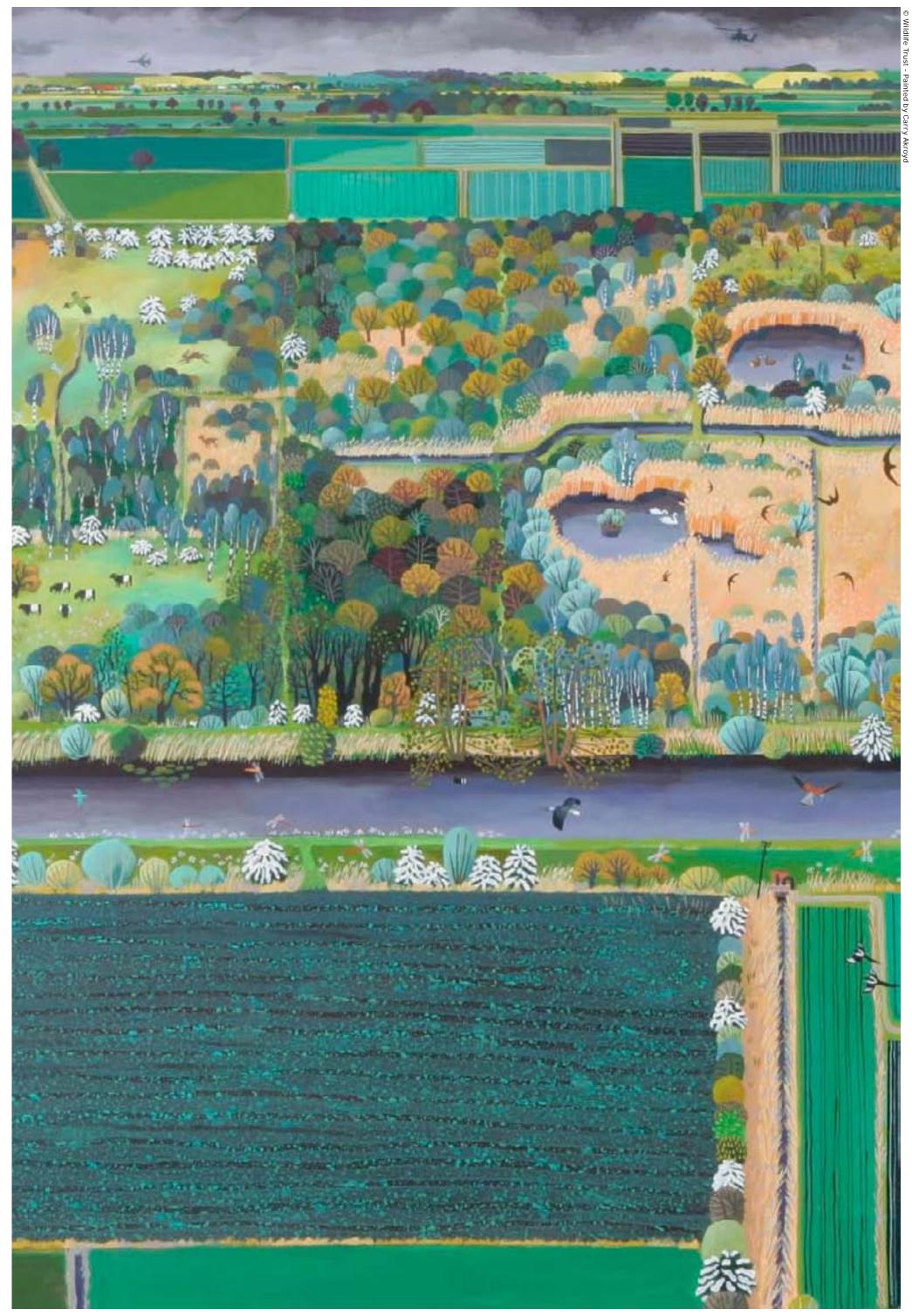
Woodwalton Fen, which is used to store floodwater now, will not be able to provide adequate protection in the future. The partners are therefore seeking alternative storage locations elsewhere in the project area and are currently considering sites in the south, middle and north. These sites could be used to temporarily store flood water whenever needed, as well as retaining some water for the management of wildlife habitats. It is likely that these will require engineering works such embankments and spillways and will therefore have an impact on the masterplan. New embankments may provide opportunities for public access, providing elevated views over the project area. Investigations into the management of floodwater will continue through 2010 and will be incorporated in to future masterplan revisions.







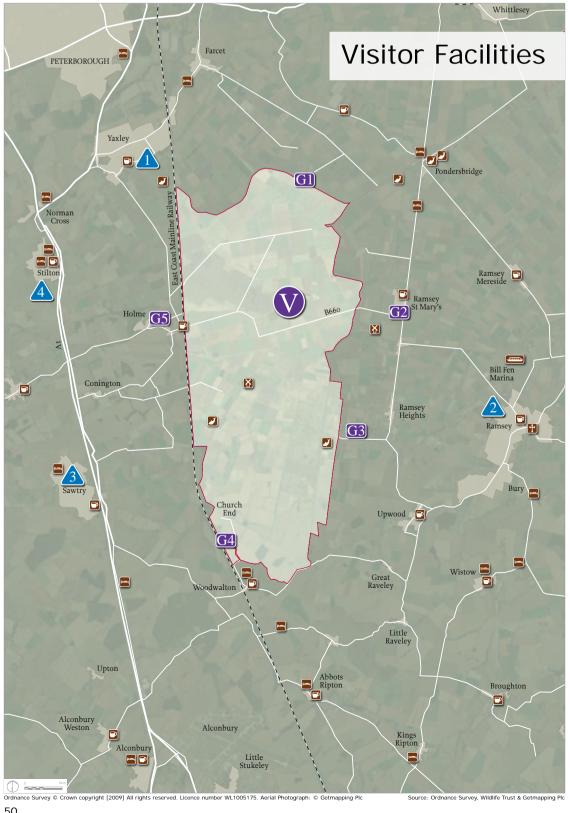




Visitor gateways

The Great Fen is in a rural location, and does not directly adjoin the larger settlements. People will arrive in a variety of travel modes such as by foot, cycle, horse, boat, bus and car. The way they arrive at the Great Fen is an important part of the visitor experience, and has been a key consideration in the masterplan. The Gateways are the places where people first arrive at, or can find information or facilities related to, the Great Fen.

















The Visitor Centre:

The primary hub of the Great Fen for visitors will be a proposed new visitor centre. The visitor centre will provide a range of facilities for visitors and the local community, along with interpretive material and information about the Great Fen. Toilets, a cafe and other facilities are anticipated. The exact facilities to be provided within the visitor centre will be decided in the future.

It is intended that the visitor centre will be designed to the highest standards of sustainability, with a minimal carbon footprint and using materials and construction methods which are exemplar. It will be designed to be a visually striking structure, a stunning piece of architecture in its own right.

The centre will provide drama to the sense of arrival and a visual reference point in the landscape. The visitor centre will cater for local people who choose to drive to the centre of the Great Fen as well as the majority of visitors who come from further away.

Visitor Gateways:

There will be a number of gateways on the boundaries of the Great Fen, situated on the primary strategic routes, and providing basic facilities such as information, shelter and toilets.

These visitor gateways will cater for people who either walk or cycle from Peterborough, Huntingdon, Ramsey and the villages surrounding the Great Fen. Some of the visitor gateways could incorporate small parking areas, suitable for local day to day use. Each gateway will have its own character and facilities, to be specified and designed at a later stage.

The Ramsey Heights gateway differs from the others in that it exists to provide education services to local schools and communities, as well as a range of habitats accessible to all.

Village Based Facilities:

These are facilities within some of the surrounding villages, which could offer support for the Great Fen. Opportunities include tourist information, interpretation, cafes, cycle hire and potentially some form of "park and ride".

Detailed proposals have not been made at this stage and it is anticipated that any village based facilities will be developed in close consultation with local communities and managed by local businesses.

Access

The Great Fen is connected to surrounding areas and communities by roads, bus routes, navigable waterways, cycleways, bridleways and footpaths. These connections are however, limited as large portions of the surrounding area and parts of the project area are not currently accessible to the public.

The Project Partners must balance the preservation conservation and restoration requirements of existing with proposed habitats and the access needs of visitors to the Great Fen. To achieve this the level of access proposed within the project area has been defined as a series of 'Access Zones' (shown opposite). The plan illustrates the greater level/intensity of access in Zone 6 - Ramsey Heights Countryside Classrooms and Zone 5 - Visitor centre area. The level of access decreases in other areas of the site to only seasonal access on designated routes in Zone 2 at Woodwalton Fen and very limited access in the quiet areas of Wilderness in Zone 1.

The primary vehicular access through the Great Fen is the B660. This road will be retained on its current alignment, with an access road to a car park and bus turning facility at the visitor centre. Elsewhere, a primary network of footpaths, cycle ways and bridleways is planned, providing connections to surrounding communities.

Access to and through the Great Fen is also possible through navigable waterways, with links to the wider network of navigable routes within East Anglia via Ramsey.

Access to the Great Fen by bus is also anticipated through the introduction of new routes which will be planned in the future. The partners will continue to work with local community transport and public transport providers and a green travel plan will be developed to encourage sustainable means of access to, and movement around the Great Fen.

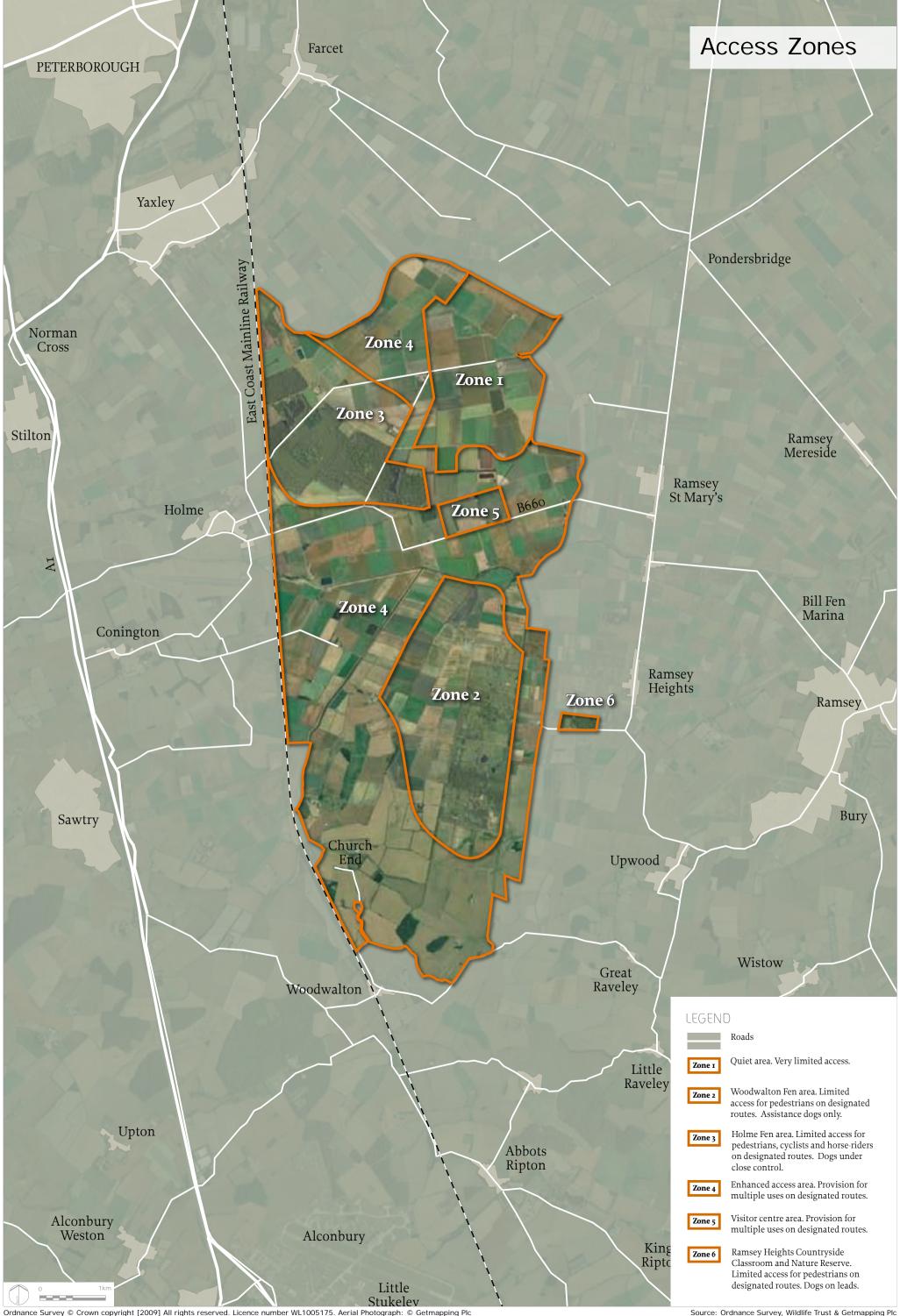
Dog walking will be managed in the Great Fen. Whilst access for people with dogs will be available across much of the area, dogs will continue to be excluded from Woodwalton Fen to minimise disturbance to wildlife. Dogs will be required to be kept under control but specific areas will be provided where dogs can be off leads.

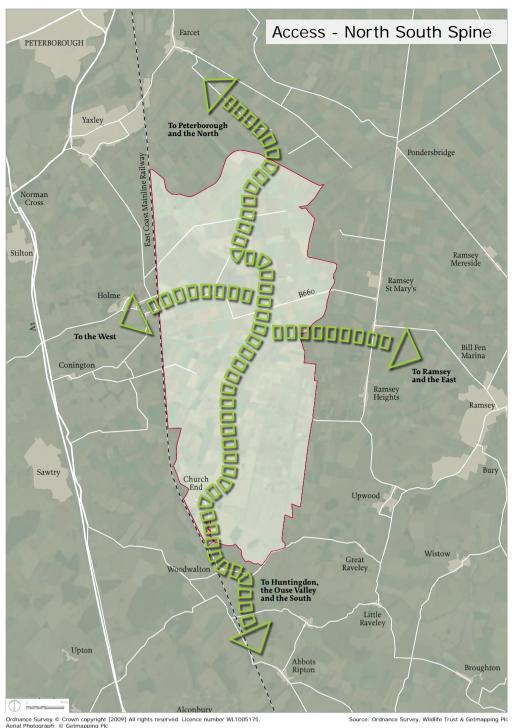














Footpaths:

The primary footpath network has been planned to create a long distance spine route connecting Peterborough and the settlements to the north with Huntingdon to the south. Linked to this are footpath connections to each of the villages which surround the Great Fen. The primary footpath routes within the site create circular routes linked to the visitor centre and visitor gateways.

LEGEND Great Fen Project Area Roads North/south spine and east/west link: long distance cycle

and pedestrian

Great Fen

routes through the

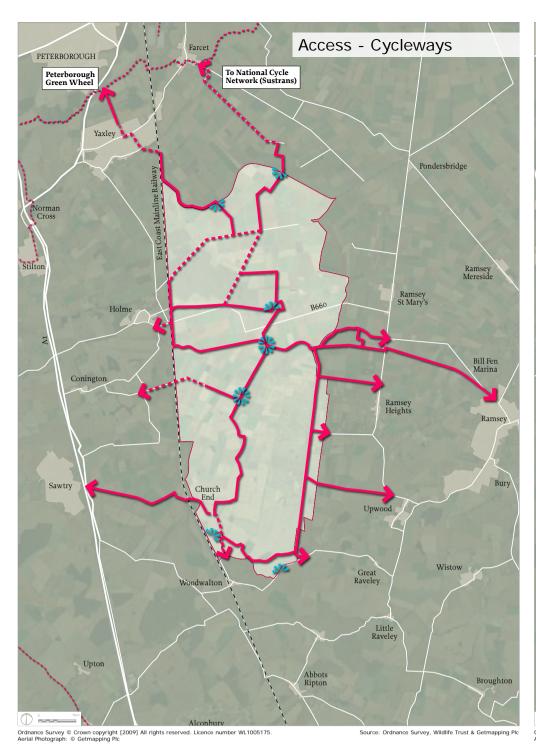
Within the visitor centre, further footpaths will be created to give finer grained access to the varied Great Fen landscape and points of interest. There will be some footpaths which will be shared with other users, and also network of footpaths which will be pedestrian only.

Dogs will be welcome to much of the Great Fen. In order to manage potential conflicts between dogs and wildlife or other users land will be zoned into areas where dogs can be walked without a lead, where they should be on leads and places where dogs will not be allowed.











Cycleways:

The cycleway network follows the primary footpath routes, ensuring the north-south spine links to villages and circular routes. The Great Fen cycleway network will be connected to the National Cycle Network to the west and Peterborough's Green Wheel to the north. These connections will link the Great Fen to not only local villages but larger settlements further afield.



Bridleways:

A network of new bridleways is proposed on higher land to the south of the Great Fen area, as well as northwards past the visitor centre and on towards Peterborough and the Green Wheel. Access by horse to the visitor centre and land surrounding it will be restricted to avoid conflicts with other users.

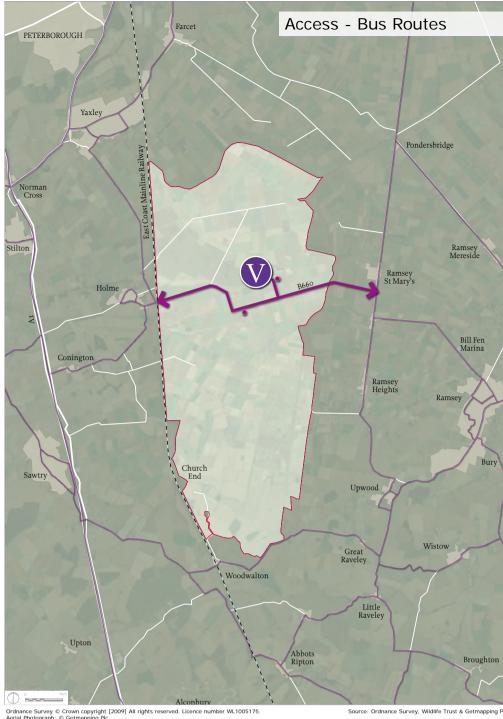
The provision of new footpaths, cycleways and bridleways can only be achieved by working in partnership with other landowners, local communities and organisations. This is particularly true for links outside of the project area.











Waterways:

Access to the Great Fen from the wider network of navigable waterways is possible for larger leisure craft. New moorings and turning points should be provided to improve the provision of facilities for boat users and these should link with other modes of transport and the visitor centre if possible. A series of smaller waterways are proposed in the vicinity of the visitor centre, with smaller craft, potentially for hire, used to explore the Great Fen and enhance the visitor experience, as well as generate economic activity.



Mooring

Trains:

The two nearest train stations are Huntingdon and Peterborough. A bus service runs from Peterborough that passes key gateways on the southern boundary

Great Fen Project Area Roads Potential Bus Route Potential Bus Stops Existing Bus Routes

Buses:

There are currently no bus routes running directly into the Great Fen area. Two very limited bus services run close to the site and pass key gateways on the southern boundary near Woodwalton and close to the western boundary at Holme.

There is potential for the existing routes to be extended slightly, new bus stops provided, and the frequency of service increased, thus creating opportunities for busbased access to key arrival points at the Great Fen.

A new bus route and bus stop could be provided on the B660 at the vehicular access to the visitor centre car park. Alternatively, the service could be extended to create a small loop into the site, dropping visitors at the visitor centre car park









With the development of the Great Fen, significantly more visits are expected to the area, and a Green Travel Plan will need to identify new opportunities, bringing people from surrounding settlements to the visitor gateways and visitor centre.

It is proposed that the visitor centre will be developed as the main point of arrival for visitors outside the local area. Further bus-based transport to the Great Fen includes potentially dedicated shuttle bus services from surrounding towns, with further pickup points in the villages. These will provide a fast service for people in Peterborough, Huntingdon and Ramsey, for example, giving secure and frequent access to the Great Fen, encouraging people to travel by bus rather than by private car, and opening up opportunities to visit the Great Fen for people who do not have access to cars or for whom walking and cycling are not practical options.

The planning of enhanced bus services, integrated with the arrival points of the Great Fen, will be a priority for future development of the project.

Cars and parking:

The masterplan is designed so that the majority of people accessing the Great Fen by car would arrive at the visitor centre, off the B660. People would drive via the existing road network, arriving at the visitor centre via a junction on the B660 from either the west or east. The route from the east is relatively unconstrained, although along generally minor roads. From the west, however, drivers will cross the East Coast Main Line railway immediately to the east of Holme. The level crossing at this point will introduce delays for vehicular traffic. This is unavoidable; a gradeseparated bridge crossing at Holme is unlikely to be financially realistic, and it would have significant adverse visual impacts on both the village and the Great Fen. However, it may be possible to work with Network Rail to reduce duration of periods when the crossing gates are closed and this should be pursued.

For visitors travelling from further afield, it is expected that the visitor centre will be the primary arrival point. While efforts will be made to provide access to the visitor centre by sustainable means a visitors' car park will be required.

The new access from the B660 is will need to meet appropriate highway standards.

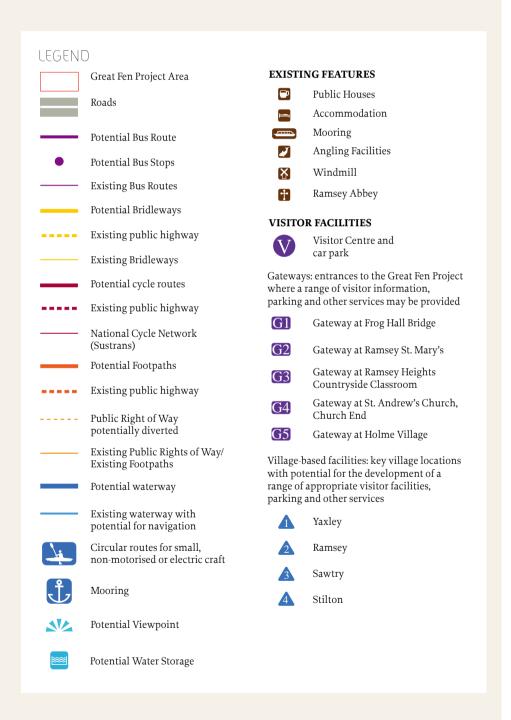
More local and regular users of the Great Fen arriving by car have the option of using either the visitor centre car park or the small number of car parks which are proposed at the visitor gateways. These are likely to be informal and relatively small in scale, serving primarily local people and perhaps regular visitors from further afield. Further work in the future will decide on which of the visitor gateways will incorporate car parking facilities.

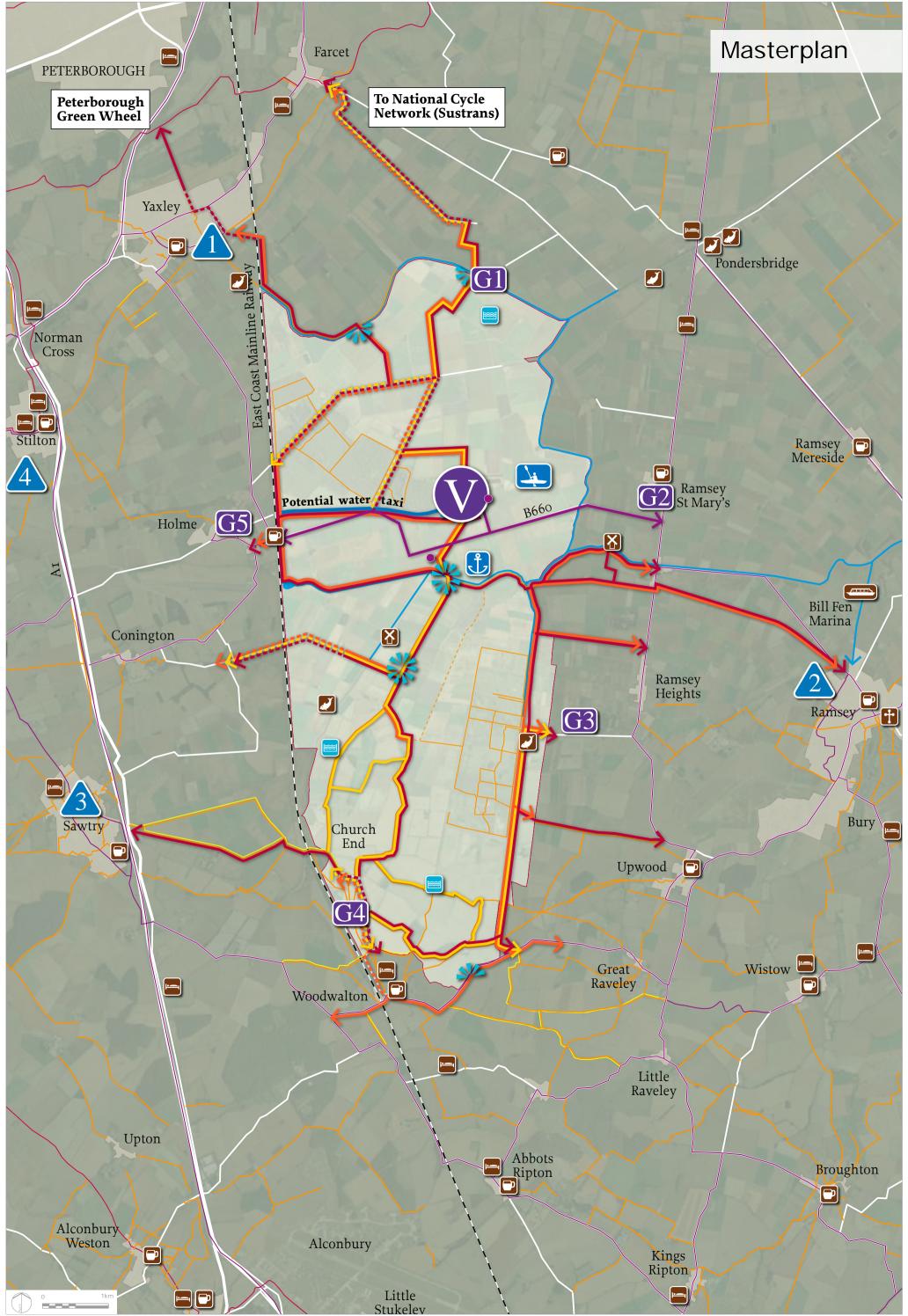
The Great Fen Masterplan Map

The masterplan map shows how the different modes of access are integrated with each other and how they link to local communities, village-based facilities and the future Great Fen visitor centre.

The maps on previous pages have been combined to create the single masterplan map seen opposite. It reveals the scope and complexity of access the partners intend to provide as the project develops. As described in earlier sections, access to and around the Great Fen can only be achieved with the support and involvement of local landowners and in continued consultation with providers and users.

The partners will bring forward detailed plans for access at the appropriate time. Site-specific investigations of access may result in different routes from those shown here. In particular access to and around the visitor centre may change significantly as plans for the building and surrounding landscape are developed.





Section 8. The Heart of the Great Fen: The Visitor Centre and Surrounding Landscape

A visitor centre at the heart of the project area will be the focus of many people's experiences of the Great Fen, providing inspiring views as well as a range of facilities for learning, recreation and comfort.

The masterplan proposes a distinct visitor focus centred on an iconic new visitor centre that will be set in a landscape which illustrates the special character of the Great Fen. The visitor centre itself has yet to be designed, but the vision is for a building serving a wide range of visitor and community needs with the potential to be a gateway to the Fens as a whole. It will be designed to be architecturally dramatic and distinctive, but integrated with its landscape setting.

Location:

The visitor centre, car park and associated facilities are to be located in the vicinity of New Decoy Farm, in the centre of the project area, north of the B660. A number of studies have been undertaken to assess the need for and the location of a new visitor centre. They have concluded that the project needs, in addition to a diverse range of visitor arrival gateways and facilities, a single focus in the form of a visitor centre and primary arrival point.

The Great Fen Project Partners have concluded that New Decoy Farm is the best location for a visitor centre. It has easy access for public transport and cars and the surrounding landscape has the potential for different habitats to be created, including open water. Open water adjoining or close to the visitor centre, surrounded by reed beds, with wet meadows and fringing trees and woodland can all be created within this area to create the ideal setting for a new visitor centre building, attracting wetland birds and other wildlife for people to enjoy. The proximity of existing trees and woodland such as at Holme Fen provide an immediate sense of enclosure and a fine setting for the visitor facilities.

This location is also well situated in relation to orientation and the sun. The ideal visitor centre will have views over water, looking northwards to avoid glare. Thus, a visitor centre needs to be located on the southern margin of an area of open water if the visitor centre is to maximise its potential as a building in a dramatic fenland landscape. This is the best site within the Great Fen from the point of view of access, orientation and habitat restoration. This central hub lies on the primary footpathcycleway spine through the Great Fen, and where routes converge from other directions. The location, just to the north of the B660 will provide convenient access by public transport and car and is only a short distance from the navigable waterway.

The Arrival Experience:

The visitor centre location and the associated car park and access routes have been designed to create a dramatic and memorable arrival experience, whether on foot, cycle, boat, bus or car. The arrival experience will be heightened by a carefully designed access sequence, views and habitats. The visitor centre location will be separate from the car park to ensure that the final approach to the visitor centre is always by foot or cycle (with the exception of disabled access, services and other special users, where special provision will be made).

This means that the approach to the visitor centre is, from each direction, through a beautifully designed fenland landscape, where views to the visitor centre unfold, enhancing the sense of drama.

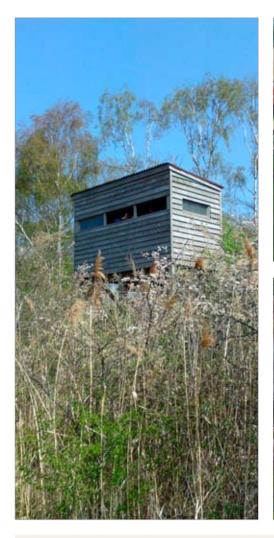
Visitors travelling by car arrive from either the east or west on the B660. A new, engineered junction is proposed for the access drive from the B660 to the visitor centre bus stop and car park. The approach is fringed by reed-filled water bodies, with reed beds and sedge, making way for wet grassland and scrub beyond. There are occasional glimpsed views to the visitor centre, set amongst wet woodland and reed beds. Some 500m after leaving the road, the visitor arrives at a car park, fringed with willow scrub. Here, there are information points and perhaps cycle hire and other facilities. Visitors then walk westwards on a causeway, again fringed with pollarded willows, towards the visitor centre. There are reed beds to the south and wet grazing meadows to the north, followed by views across open water to the north. The visitor centre then comes into view, well separated from the car park.. It sits, isolated, in its own fenland setting, extending out from the existing causeway into a newly created water body to the north.

The car park is left behind, screened by trees, and further tree planting screens the B660. On arriving at the visitor centre, all of the key fenland habitats can be seen, defining the essence of the Great Fen. Similar arrival sequences will be possible for other modes of transport. Buses will arrive in a similar way to cars, at the visitor centre car park.

People arriving by foot or cycle will arrive at the visitor centre through a similar sequence of landscape experiences, from the west along the B660, New Dyke or via the old railway track through Holme Fen, and from the south along the main arrival drive.

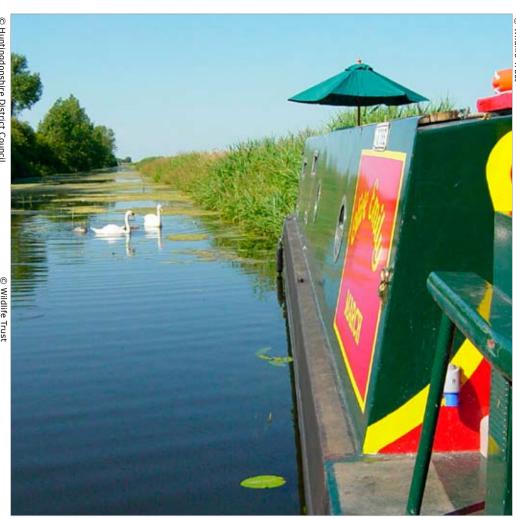












People arriving by foot or cycle from the east could choose to enter the site through the Exhibition Bridge gateway along the B660, past reeds beds on either side of the road or along New Dyke to an existing bridge crossing at Charterhouse Farm. Here there would be clear panoramic views across the Great Fen and key views to the visitor centre. The arrival sequence would continue onto the B660 and along the main arrival drive.

From the north, arrival would be by foot or cycle only. There are two choices of entry into the Great Fen from the north, one via a new bridge from Yaxley Fen to the north west and the other across an existing bridge at Frog Hall which links to Farcet. Both of these routes would arrive at the visitor centre through a landscape that will, over time, be transformed into new wetland wildlife habitat. These fields will be full of reeds and sedge and new water bodies, reflecting the former Whittlesey Mere, the largest lake outside Cumbria, prior to its drainage in the 1800s.

From the south beyond the B660, people would arrive by foot or cycle. Visitors entering the site from this direction would travel along the main north-south spine route taking in the full range of habitats and landscape character from the higher and drier land to the south through the wetter areas close to Woodwalton Fen, across New Dyke and the B660 to the newly formed habitats around the visitor centre.

The Visitor Centre Landscape Setting:

The landscape surrounding the visitor centre represents a summation of the Great Fen experience. Every fenland habitat type and landscape character can be experienced in the surrounding area – open water, reed beds, fen, wet meadows, scrub and small areas of wet woodland. Only the drier habitats to be found to the south of the Great Fen will be missing in this area. A network of paths, boardwalks and waterways will give access to the area for people on foot and by non-motorised or electric boats, which could be for hire in the vicinity of the visitor centre, enabling people to explore the fenland landscapes within the immediate area of the visitor centre. Viewpoints and hides are positioned to enable people to view the diverse range of wildlife which will become established, and which will be especially prominent on the open water areas.

The Visitor Centre:

Plans for the visitor centre are still being developed, and will be the subject of further consultations. It is anticipated, however, that the visitor centre will provide a range of facilities for recreation visitors, education groups and people from local communities. It is planned that, architecturally, the visitor centre will be highly distinctive in form and character, representing a true focus for the Great Fen. It will be a striking visual reference point and will be designed to the highest standards of sustainability possible. It will further enhance the arrival experience, drawing people through the building and opening up views as a series of framed 'windows' and, once through the building, as open panoramas. The Great Fen visitor centre will be an experience in its own right, a special building closely related to the surrounding landscape, so that building and landscape are designed together, in mutual harmony.





"There was a strong feeling from many consultees across the groups that the new visitor facilities should provide unique and inspiring experiences."

Stakeholder Comments taken from the Great Fen Masterplan Consultation 2009 Phase 1 Report - Visitor Experiences Section



Section 9. The Next Steps

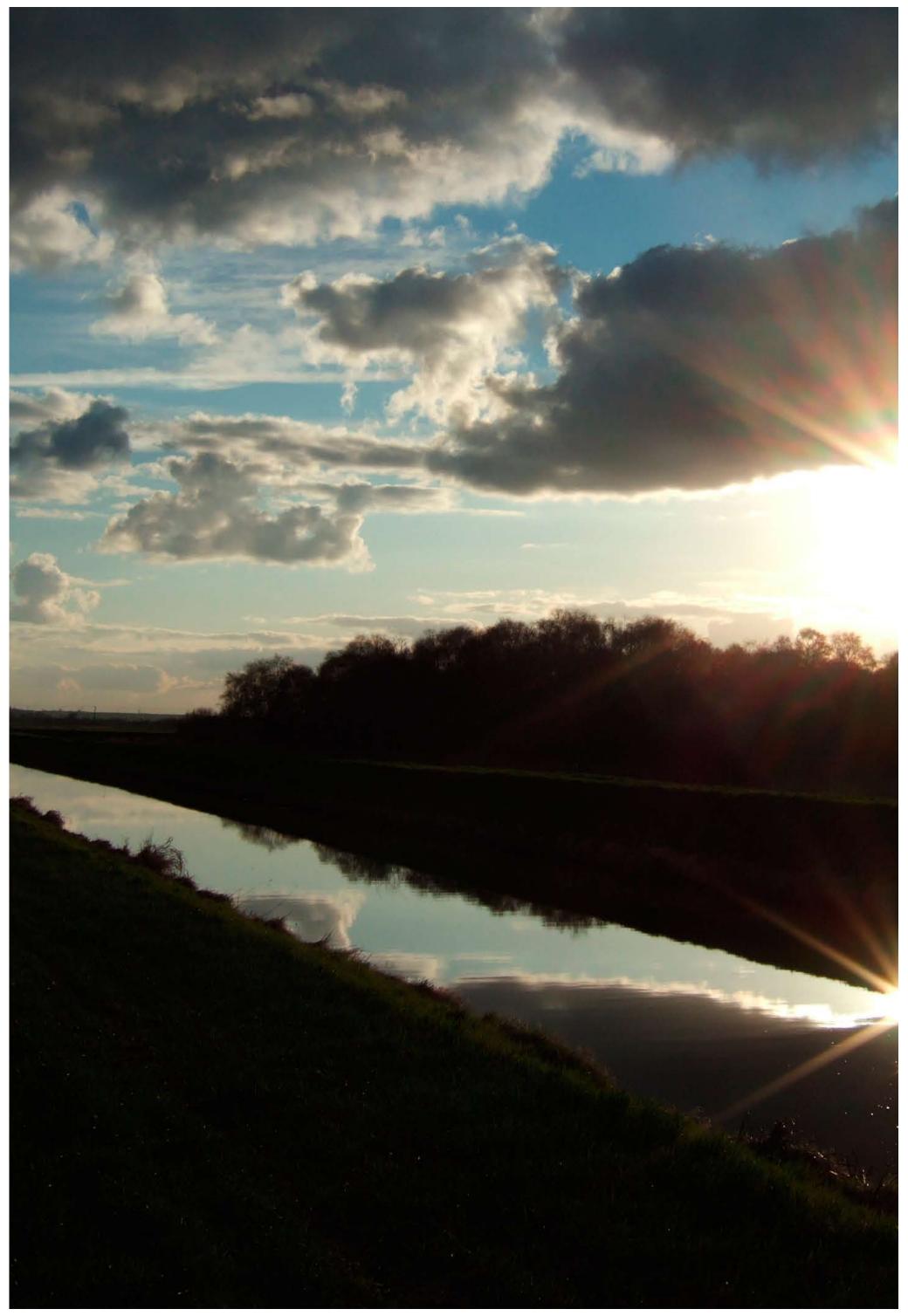
The masterplan will be used to guide the partners' work and to provide information for individuals and organisations that may wish to help the partners deliver the project's vision. The masterplan will be reviewed periodically as the project develops and in response to changes of national, regional and local policy.

The Project Partners are working on an Action Plan which will set out what the partners will seek to achieve between 2010 and 2015. This should be available to the public from summer 2010.

In addition to the Action Plan the partners will establish a Stakeholder Forum to enable interested parties to meet with the Project Partners on a regular basis and discuss progress and explore opportunities.

"One can seldom find space in our busy and crowded world, but the Great Fen Project delivers that in triplicate: space, tranquillity and the sheer beauty of the landscape and its native habitat. We should treasure this, alongside encouraging more people – young and old – to enjoy the experience, thus improving the local economy through tourism."

Sir John Major - Great Fen Patron, October 2008



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