



ESSEX & SUFFOLK  
WATER



# The Abberton Scheme

[www.eswater.co.uk](http://www.eswater.co.uk)



**The Abberton Scheme**



Abberton Reservoir, summer 2010.

## The Abberton Scheme

Essex & Suffolk Water (ESW) supplies drinking water to 1.8 million people in Essex, north Suffolk and south Norfolk. It has a duty to do this in a way that conserves and enhances the environment.

The Essex supply area includes the major towns of Chelmsford, Brentwood, Witham and Southend-on-Sea and the London boroughs of Havering, Redbridge and Barking & Dagenham.

Demand for water in this area is predicted to rise by around 6% over the next 25 years, almost entirely due to a forecast increase in population. Combine this growth with a typically dry climate, Essex on average receives half the national average rainfall, and the need for a long term and sustainable increase in water resources is clearly apparent.

After many years of planning and consultation, ESW found that enlarging the reservoir at Abberton to capture and store an increased volume of water was the most viable option from an environmental, engineering and economic perspective.

## Abberton Reservoir

Situated in a scenic part of the Essex countryside, Abberton Reservoir, near Colchester, is the largest freshwater body in Essex with 472 hectares covered by water when the reservoir is full. The reservoir was constructed during the 1930s and completed by 1939.

The reservoir is filled with water from local rivers including Layer Brook, Roman River and the river Stour. Abberton Reservoir has developed into one of the most important sites in Britain for wildfowl, particularly as an overwintering habitat.

The reservoir is a Ramsar site (wetland of international importance for birds), a special protection area, (designated under the EU birds directive) and a site of special scientific interest (SSSI), also because of the wildfowl. ESW works in partnership with Natural England, Essex Wildlife Trust and other organisations who support it in making sure this resource is managed in a responsible and sustainable manner.

## The Abberton Scheme

The enlargement of Abberton Reservoir forms a major part of the Abberton Scheme, which is broken down into the three elements:

### The Abberton Reservoir Enhancement

Enlarging the capacity of ESW's existing Abberton Reservoir, to secure additional water resources and improve the reservoir's value for biodiversity.



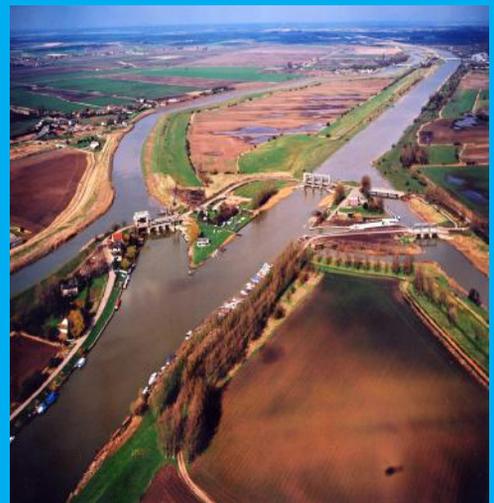
### Transfer Enhancement

Provision for increased transfer of water from Denver to Abberton Reservoir through enhancement of the existing water transfer system.



### Denver Licence Variation

Obtaining additional water to fill the enlarged reservoir, by varying abstraction licences at Denver and Blackdyke, as part of the Ely Ouse to Essex transfer scheme, owned and operated by the Environment Agency.





## Abberton Reservoir Enhancement

The primary element of the Abberton Scheme involves increasing the storage capacity of Abberton Reservoir by 58%. This is achieved by raising the top water level in the main, eastern part of the reservoir by 3.2 metres. This increase, along with a variety of habitat creation and management measures that form part of the scheme, have been designed to improve the value of the reservoir for birds and other wildlife.

The decision to raise the level of the reservoir by this amount was influenced by the desire to minimise the increase in the footprint of the reservoir and the loss of surrounding farmland, while also conserving important habitats in the western and central sections of the reservoir.

As well as raising the main dam the reservoir enlargement involves:

- **Building a number of smaller col (earth) dams around the edge of the reservoir.**
- **Relocating the Essex Wildlife Trust Visitor Centre to a larger site.**
- **Diverting a 1.8 kilometre section of the B1026 and modifying the B1026 causeway.**
- **Enhancement of public access routes and improved parking provision along the B1026.**
- **Construction and refurbishment of a number of pumping stations.**



## Transfer Enhancement

Water is brought from Norfolk to ESW's reservoirs at Abberton and Hanningfield through a number of large pipelines, man made water courses and by using existing rivers.

In order to fill the enlarged Abberton Reservoir, additional water needs to be transferred to the reservoir. To do this, the existing transfer system is upgraded as part of the scheme.

This upgrade involves the installation of two new underground pipelines. Each pipeline is approximately 15 kilometres long and 1.2 metres in diameter.

The first pipeline runs entirely by gravity parallel to the upper reaches of the river Stour, from Kirtling Green in Suffolk to Wixoe on the Essex/Suffolk border, where on completion of the scheme the additional water will be put into the river Stour.

The second pipeline runs from Wormingford, Essex, where the additional water will be abstracted from the river and transferred to Abberton Reservoir.

At the head of this second pipeline, a new pumping station built on the banks of the river Stour at Wormingford will pump water two kilometres south, to a break tank at the highpoint on the pipeline from where it will flow by gravity to Abberton Reservoir.

Due to current pumping and storage constraints, ESW cannot always fully utilise water during high flow conditions in the river Stour. The enlarged reservoir and the additional intake from the river Stour at Wormingford allows ESW to abstract and store additional water from the river Stour when water is available during these peak flow conditions which usually occur during the winter.

Detailed pipeline route maps can be seen on our website [www.eswater.co.uk](http://www.eswater.co.uk).



New pipeline installation.





## Denver Licence Variation

Essex is the driest county in the UK. During a dry year, insufficient water is available from within Essex to meet customer demand.

Since the 1970s, Essex has relied on transfers of water from the Ely Ouse in Norfolk to fill its reservoirs, during very dry periods.

The Environment Agency currently transfers water from Denver in Norfolk to Essex when it is needed to fill Abberton and Hanningfield reservoirs. This is carried out through the operation of the Ely Ouse to Essex Transfer Scheme (EOETS). Under the scheme, surplus water which would otherwise flow into the Wash, is transferred to Essex.

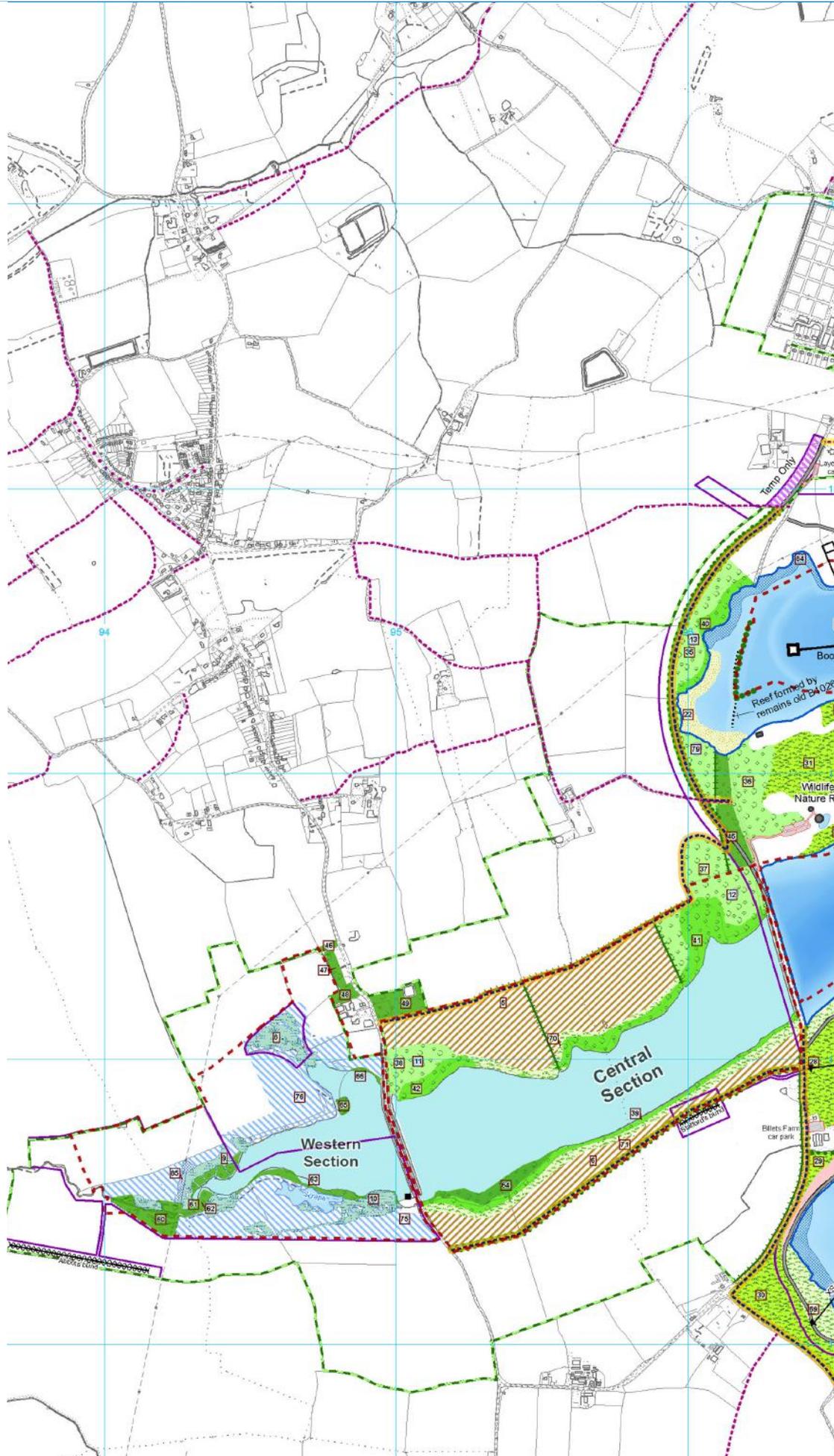
By varying the Environment Agency's abstraction licences at Denver and Blackdyke in Norfolk, which control the amount of water transferred to Essex, the additional water needed to fill the enlarged Abberton Reservoir is provided.



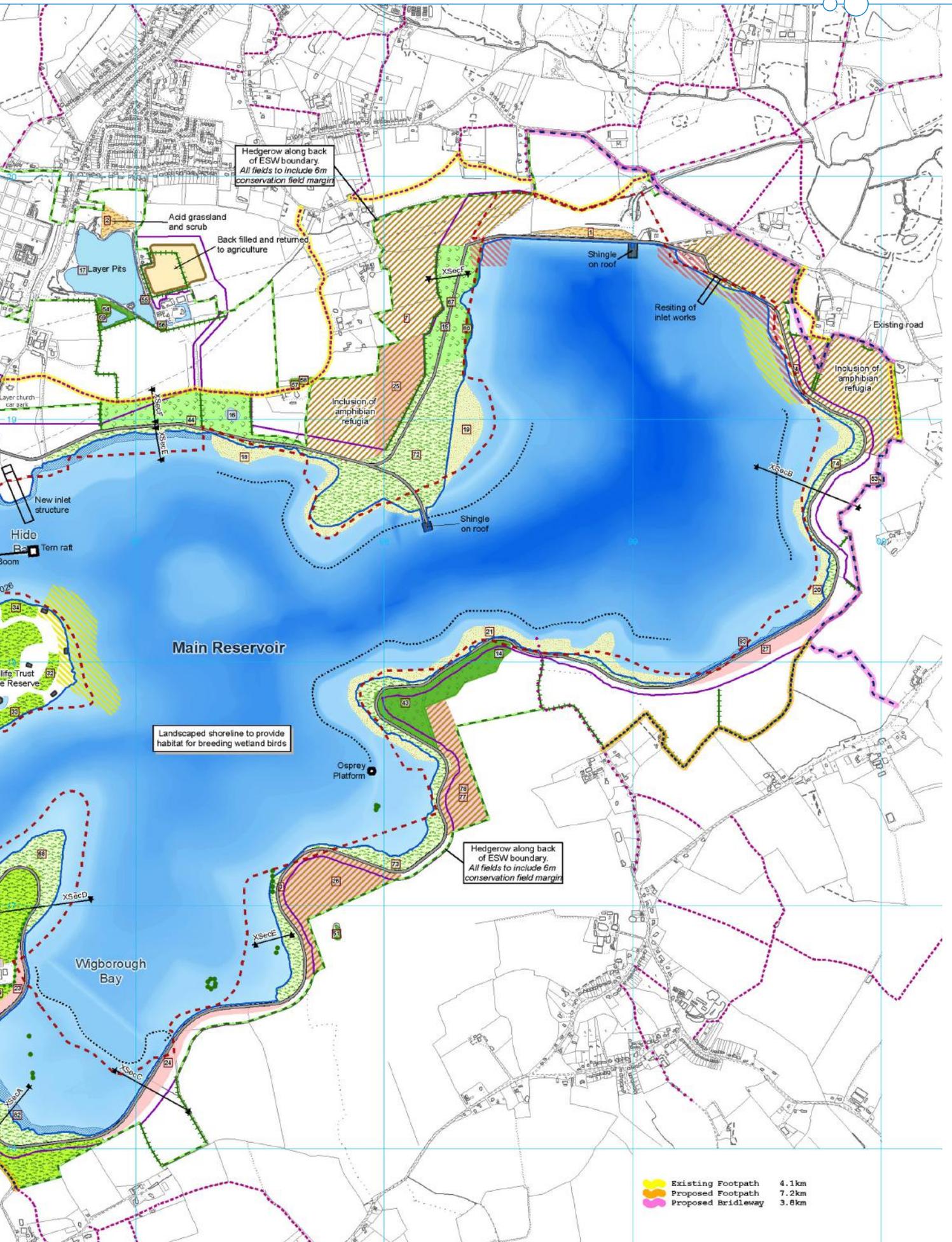
Denver complex.

**Key**

-  Proposed Water Level
-  SSSI/SPA boundary
-  Acid grassland
-  Building
-  Farmland bird habitat
-  Lagoon
-  Borrow Pit
-  Pond
-  Reedbed
-  Marginal and emergent vegetation
-  Reptile habitat
-  Rough grassland
-  Woods (T1)
-  Woods (T2)
-  Existing woodland
-  Waterfowl habitat
-  Wet grassland
-  Geo mat
-  OSA
-  Trees retained for Osprey nesting (indicative positions only)
-  Water control gate
-  ESW boundary hedge (22.5km)
-  Forestry scheme hedge (12.2km)
-  Reefs
-  Proposed roads
-  Cross Section Lines
-  Construction Zone
-  Public Rights of Way
-  Footpath
-  Bridleway
-  Other Public Access
-  Other route with public access
-  Proposed permissive access
-  Permissive footpath
-  Permissive bridleway



Indicative map of enlarged Abberton Reservoir.



## Wildlife at Abberton

The enhancement of Abberton Reservoir has been designed to provide significant positive effects for biodiversity.

Six hectares of wetland habitat were created at the western section of the reservoir in 2008, prior to construction work starting on the main section of the reservoir. Designed as a refuge for waterfowl that may be displaced as a result of construction activities on the main reservoir, it has matured and now provides valuable habitat for waterfowl. It is also home to a healthy population of water vole which thrives in the diverse aquatic vegetation. The lagoons will remain a permanent feature of the site and will be managed to deliver maximum biodiversity.

The design of the enlarged reservoir enhances the habitat available for waterfowl for which the reservoir is designated a nationally and internationally important site:



- For dabbling waterfowl, shallow water provides a feeding habitat and is therefore crucial. Removing the concrete edge and re-profiling the shoreline with a more natural finish will create almost 200 hectares of shallow water and perched lagoons once the new top water level of the reservoir is achieved. The ecological benefits arising from these shoreline works are already apparent with waders and water fowl such as gadwall and teal utilising these newly created areas.
- Creation of the shallow water habitat with natural edges allows submerged and emergent aquatic plants to establish along the shoreline, providing food and shelter for the nationally and internationally important bird populations that use the site.
- Creation of terrestrial habitat to establish a network of hedgerows surrounding the reservoir. Species such as bats, other small mammals and birds use hedgerows for foraging and navigation.
- Ponds, woodland and grassland habitat are also being created as part of the scheme and will benefit species such as great crested newt, reptiles, terrestrial and aquatic invertebrates.





Western section, 2012.



B1026 causeway over Abberton Reservoir.



Access and recreational opportunities are being enhanced as part of the scheme.

## The Abberton Scheme



## Access and recreation

As well as improving the site for wildlife, the scheme also provides enhanced public access to the reservoir and its surroundings for quiet enjoyment by all members of the community.

The completed scheme will see the network of permissive footpaths, cycle routes and bridleways near the reservoir increase from around four kilometres to 16 kilometres, including a circular walk around the central section of the reservoir.

The Essex Wildlife Trust Visitor Centre is also relocated to a significantly larger site which forms part of a new nature reserve with woodland walks, bird hides, ponds, a playground area and viewing mound.



Views from around the new Essex Wildlife Trust Visitor Centre.

# Consultation, investigation, communication

Large scale projects, such as the Abberton Scheme, need years of investigation and planning. During the beginning stages of investigation in the early 1990s, the company considered 250 potential sites for a new reservoir to be built. Following extensive engineering and environmental investigations, increasing the storage volume of Abberton Reservoir was identified as the preferred option.

It is essential that the environment and local community are protected before, during and after construction. A large amount of work to assess any effects of the scheme was completed during the application stages of the scheme.

Those immediately affected by the Abberton Reservoir plans have been consulted over a number of years. A more widespread communications programme was introduced in the autumn of 2005, by which time ESW's proposals were being finalised and the timings for the project becoming clearer.

ESW has worked with parish councils, local communities and other interested parties throughout the planning and construction phases of the scheme.

Information sessions, displays, newsletters, media contact, website, updates and public meetings have all been used as part of the company's communications plan.



Consultation events during the planning stage of the scheme.



## Timescales

**2007**

Planning application submitted in December.

**2009**

Positive decision received in February.

**2009**

Carillion appointed contractor for reservoir enlargement.

**2010**

Construction started January.

**2011 - 2012**

Pipeline construction.

**2010 - 2013**

Reservoir enlargement.

**2014**

Enlarged reservoir in use.



Abberton at sunset,

## Contact us

If you would like any further information about the Abberton Scheme, you can contact Essex & Suffolk Water by:

Telephone  
(9.00am until 5.00pm, Monday to Friday):  
**01268 664 862.**

Out of hours:  
**0845 782 0999.**

Email:  
**[abberton@eswater.co.uk](mailto:abberton@eswater.co.uk)**

Or you can write to us:  
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Further information and latest news about the Abberton Scheme can also be found at:  
**[www.eswater.co.uk/abberton](http://www.eswater.co.uk/abberton)**.

