Cranbrook Drain/Counter Drain Flood Risk Management Strategy

Flood Risk Management Principles and Specification

Environment Agency Submission to Cambridgeshire County Council in Support of Proposals to create a Flood Storage Area at Block Fen
July 2009

Introduction

In 2008 the Environment Agency's Flood Risk Management Strategy for the Cranbrook / Counter Drain was approved and adopted. One important component of the preferred strategy is to investigate and, if possible, develop flood storage over the medium term to replace Welches Dam pumping station. In so doing to provide a more sustainable long term flood risk management solution for the area that can bring wider social and environmental benefits.

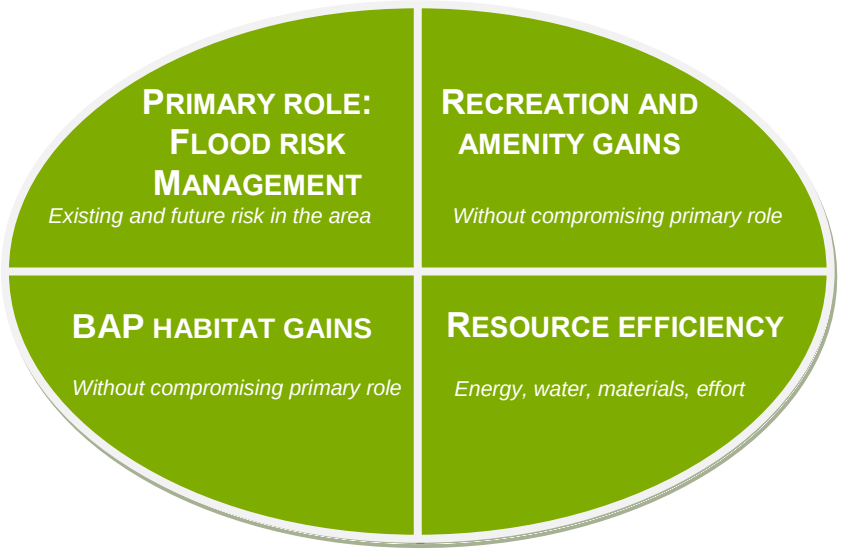
The Cranbrook Drain/Counter Drain is primarily a drainage and flood protection system. As structures within this system are approaching the end of their useful lives a strategic approach is required to safeguard the future of the system. The current standard of flood risk to the 10,550ha catchment is a 1 in 25 chance of flooding in any given year.

This document presents the vision and key principles for flood storage at Block Fen.

Shared vision

Synergies between the Cranbrook / Counter Drain Flood Risk Management Strategy and the Cambridgeshire and Peterborough Minerals and Waste Development Plan were first identified during the development of the Environment Agency's Strategy. There is an opportunity to provide flood storage as one of a range of after-uses following minerals extraction in the Earith/Mepal area at Block Fen. This opportunity was recognised in the Earith / Mepal Area Action Plan and is an important component of the flood risk management strategy.

The Environment Agency's vision is to be able to deliver their primary objective of providing sustainable flood risk management to the Cranbrook Drain catchment in the face of a changing climate whilst also contributing recreational, amenity and biodiversity gains and maximising efficient use of natural resources.



This flood storage scheme accords very well with Defra's Flood and Coastal Erosion Risk Management Strategy 'Making Space for Water' and the Environment Agency's Corporate Strategy 'to create a better place for people and wildlife' and its five themes:

1. Act to reduce climate change and its consequences
2. Protect and improve air, land and water quality
3. Put people and communities at the heart of what we do
4. Work with businesses and the public sector to use resources wisely
5. Be the best we can

In 2009, the Environment Agency established a Project Steering Group to help them to progress the flood storage element of their approved strategy. This comprises Natural England, Cambridgeshire County Council, the Royal Society for the Protection of Birds (RSPB), minerals companies, the Sutton and Mepal Internal Drainage Board (IDB) and the Middle Level Commissioners.

Engagement with these stakeholders has helped the Environment Agency to understand their various aspirations for the area, the challenges the project faces and the multiple benefits that it can deliver. This improved understanding has been used to inform the drafting of a number of key principles for the future design, operation and management of a flood storage area at Block Fen.

Flood Storage Principles

We have developed a set of guiding principles for a flood storage area at Block Fen.

PRIMARY OBJECTIVE To Provide a Sustainable Flood Risk Management Solution for the Cranbrook Drain/Counter Drain Catchment.

In meeting the primary objective the Environment Agency will look to:

PRINCIPLE 1 Provide a sustainable flood risk management solution that is resilient to predicted changes in our climate (e.g. wetter winters with more intense rainfall events and warmer drier summers)

PRINCIPLE 2 Ensure that there are no significant effects of the scheme on the ability of the IDB to manage the surrounding drainage system.

PRINCIPLE 3 Minimise future operational and maintenance costs (e.g. pumping) through careful design.

PRINCIPLE 4 Provide a water resource for local irrigators.

PRINCIPLE 5 Minimise the disruption to other land users and uses within the flood storage area through careful design (e.g. focussing of high return period flood events into defined parts of the wider storage area).

PRINCIPLE 6 Provide appropriate compensation to landowners, where required, for disruption caused by infrequent high return flood events.

PRINCIPLE 7 Explore the potential for providing inert waste storage where it can be accommodated in the design and where it is in accordance with the Cambridgeshire and Peterborough Minerals and Waste Plan.

PRINCIPLE 8 Promote recreational after-uses where there will be no detriment to the primary objective of flood storage and other land users.

PRINCIPLE 9 Maximise benefits to biodiversity where they don't conflict with the primary objective (e.g. providing water to and avoiding flooding of the habitat restoration area; reducing the volume of water pumped into the Ouse Washes SPA and Ramsar site).

PRINCIPLE 10 Actively engage with stakeholders as the proposals for the area develop.

PRINCIPLE 11 Ensure proposals comply with the Objectives and principles outlined in the Agency's Strategic Environmental Assessment for the Welches Dam Flood Risk Management Strategy.

What we are proposing

Following the extraction of minerals from the area the Environment Agency's vision is to utilise the restored land for storage of flood events. During periods of non-flooding the land would be available for various land uses which would be flood tolerant. During times of flood the land would be inundated to varying depths depending on the intensity of the flood event.

The current proposals for land restoration following the minerals extraction is for low level restoration to agricultural use. However, it is understood that the Master Plan is suggesting that the existing restoration proposals be re-visited and that the land restoration proposals compliment the habitat creation areas, giving more holistic restoration for the entire area.

The Environment Agency's proposals for flood storage do not preclude land restoration in line with the current proposals and it is likely that some or all of the following would be required to enable the use of this land for flood storage based on these proposals:

- Clay lining, or similar impermeable lining of the low level areas to prevent seepage, both into and out of the flood storage area.
- Pumping to evacuate flood waters to the receiving watercourses following flood events.
- Acceptance by future land owners of flooding of restored land (for less frequent events) to varying depths, although compensated through Agency flood easements.
- Potential bunds to contain flooding of restored land.

The Environment Agency would seek to modify, where possible, the land restoration proposals to encourage a holistic and sustainable land and flood management system and to reduce the future costs and environmental impacts, and which would compliment land restoration proposals outside of the main flood storage area.

The Environment Agency propose to undertake detailed investigations and Environmental Impact Assessments into the mechanisms of flood risk management in order to work closely with the minerals extraction companies to develop their restoration proposals in detail and in line with the primary objective of flood storage and the principles for flood storage outlined above. Detailed hydrological studies are planned which will determine the extent, if any, of bunding and clay lining required. The purpose of the detailed hydrological assessment is also to help determine the most appropriate land restoration option to be pursued.

Characteristics of the flood storage area

The following provides a list of specific items that will need to be satisfied in order to meet the primary objective to provide a long term sustainable flood risk management solution at Block Fen:

1. Sustain the current standard of flood protection of 1 in 25 year statistical return period event
2. Provide 10.8 million cubic metres of flood storage capacity, equivalent of two 1 in 25 year statistical return period flood events in succession;
3. Serve the same area as is currently served by Welches Dam pumping station.
4. A phased restoration of land to bring flood storage on-line as land is released over the 50 year minerals extraction programme.
5. Where practicable maximise the number and areas of lakes provided through restoration to maximise the available flood storage volume contained within the lakes, thereby reducing frequency of flooding on the remaining restored land.
6. Where possible provide continuity of the drainage of the area with the surrounding IDB system to reduce ongoing drainage and pumping costs associated with the restoration of the site.

Future management of the flood storage area

The Environment Agency will be responsible for the setting the operating rules for the flood storage area, including the levels at which water is stored and removed from the area. The Environment Agency will also be responsible for ensuring that the area is operated and maintained in accordance with the operating rules.

It is envisaged that the day to day management, in line with the operating rules, could be undertaken either by Internal Drainage Boards (IDBs) or the Environment Agency's operations teams.

The cost of running the area will be kept in line with the existing local precept arrangement for the operation and maintenance of Welches Dam pumping station, which is part funded by the IDBs and the Environment Agency.

The Environment Agency does not seek to own the land. In line with other similar assets, the land is likely to be owned by other landowners who are compensated, through flooding easements, for the flooding of the land. In addition the Environment Agency will retain the right to inspect and repair assets on the land as required, also through the agreement of easements with landowners.