



Non-Technical Summary of the Environmental Statement

River Foss Flood Storage Area

York Flood Alleviation Scheme

November 2019

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Quality Assurance

Approvals

Name	Signature	Title	Date	Version
Matt Chapman	M.Chapman	Senior Environmental Project Manager	07/11/2019	

EIA Quality Mark



This Environmental Statement, and the Environmental Impact Assessment (EIA) carried out to identify the significant environmental effects of the proposed development, was undertaken in line with the EIA Quality Mark Commitments.

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Non-Technical Summary

This document is the Non-Technical Summary (NTS) of the Environmental Statement for the York Flood Alleviation Scheme, Foss Upstream Storage Area.

This document includes:

- An overview of the EIA process, its objectives and the scope of the assessment
- A description of the Scheme, including details of site location, why the project is needed and what is proposed
- A summary of the residual effects identified through the EIA process and reported under topic headings covering different aspects of the environment.

1. INTRODUCTION

1.1. Overview

The Foss Flood Storage Area is part of the Environment Agency's York Flood Alleviation Scheme (FAS). We are applying for permission to build a new flood storage area on the River Foss north of Strensall. We will build a reservoir to store water in the event of a flood. The reservoir will not store water under normal weather conditions, but will retain water in high flows to reduce the risk of flooding downstream in Strensall and York.

The land is currently in agricultural use, and most will continue to be farmed following construction.

We have completed an Environmental Impact Assessment (EIA) for these proposals. The EIA helps us to understand the potential environmental impacts on the surrounding environment and local residents. Impacts are considered during construction and during operation when the flood storage area is completed.

1.2. What is an Environmental Impact Assessment?

The Environmental Impact Assessment (EIA) process identifies the key environmental impacts of a development and suggests ways that these impacts can be reduced or avoided. It is required by law for large developments or those with the potential to cause large, combined or multiple impacts. Ryedale District Council and York City Council have considered the draft proposals and decided that an EIA was required. This is primarily because of the potential impacts of the scheme on the protected habitats of the nature reserve at Strensall Common.

The findings from this assessment are reported in a document called an Environmental Statement (ES), which will be made public and available for anyone to review.

1.3. What are the objectives of the EIA?

The Environmental Impact Assessment aims to:

- Identify all the potential impacts of the proposed development
- To assess the significance of those impacts
- To challenge the developer to identify alternative and better ways of constructing or operating the development to avoid or reduce impacts
- To find opportunities to fix (remediate) or compensate for any remaining impacts

1.4. How is the significance of any impact assessed?

All of the potential impacts are given a rating on a 5 point scale from not-significant through from slight to moderate or substantial up to very substantial. The rating depends upon the receptor (the thing that is impacted), and the nature of the effect.

The significance of an impact is illustrated in in figure 1 below:

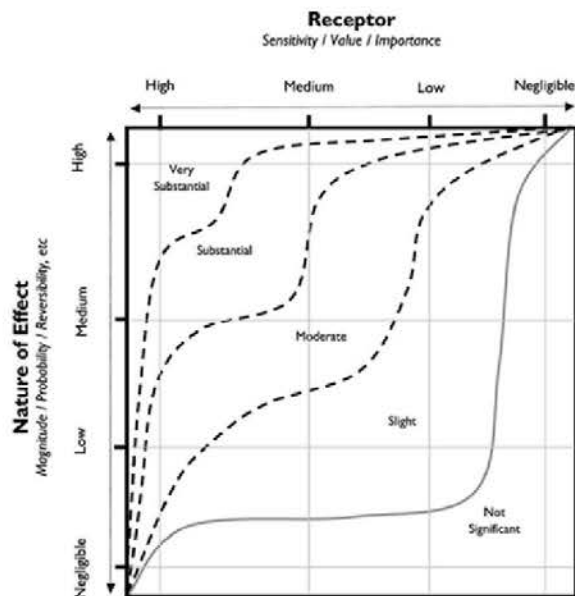


Figure 1 is a graph showing the significance of an effect depending upon the sensitivity of the receptor (the thing that is affected) and the nature of the effect (its magnitude, probability and whether it is permanent or reversible).

1.5. What is a Non-Technical Summary?

The full results of the EIA (baseline information, survey information and technical assessments) are available in the Environmental Statement (ES).

The findings of the ES are then summarised and presented in this Non-Technical Summary. This document is presented as a series of questions and answers about the construction and operation of the proposed flood storage area. Where potential problems are identified, we will explain how we will address them.

2. THE PROPOSED DEVELOPMENT

2.1. What is being built and how will it work?

The Environment Agency is proposing to construct a reservoir to store flood water if water levels in the river Foss become high enough to potentially cause damage downstream in Strensall and York. The reservoir will only fill with water in storm events. It is estimated that this will occur approximately once every 2 years.

The reservoir will have no active moving parts. When flowing normally, water in the Foss will pass without obstruction through an "orifice plate" which is a metal plate with a specific sized hole. During high flows, the river will fill the orifice and water will be held back in the reservoir. As flood waters recede after the storm passes, the stored water will discharge harmlessly back into the Foss through the orifice plate.

The reservoir embankment will be constructed from clay. The majority of the clay will come from pits within the flood storage area. After construction these pits will be developed into ponds, connected to the River Foss to provide valuable wetland habitats to support wildlife.

In addition to constructing the reservoir, some road works will be required. In order to maintain access to all the houses surrounding the flood storage area in the event of a flood, we will raise Ings Lane by around 1 meter along a 200 meter stretch.

Also, a stretch of Lilling Low Lane could be covered with water in the event of a very large flood. This road would become impassable in such an event, but there are alternative routes available. The Environment Agency will reinforce the edges of the road to ensure its structure is not damaged by water in the event of a flood.

Figure 2 attached to the back of this document is a diagram showing all the construction work that will be done, including some cross-sections through the embankment.

2.2. Why is this needed and what benefits will it bring?

During the December 2015 floods, the City of York saw some of the highest river levels on record, and significant impacts were experienced by the local community. York has an extensive history of flooding, dating back to 1263. Recent significant flood events in York have occurred in 1947, 1978, 1982, 2000 and 2015. The overall strategic aims of the Foss FSA are:

- to reduce the risk of flooding to properties and people
- to strengthen the city's ability to cope with flooding by reducing the risk of flooding to infrastructure, transport links, utilities and businesses
- to work collaboratively with other organisations to make an effective contribution to sustainable development and, where possible, create opportunities for economic growth.

The flood storage area will provide a better level of flood protection to approximately 490 properties downstream in Strensall and York.

2.3. Where will it be built?

The storage area will be built north-west of Strensall and north of the Haxby-Walbutt's Water Treatment facility. It will be west of Flaxton and south of West Lilling.

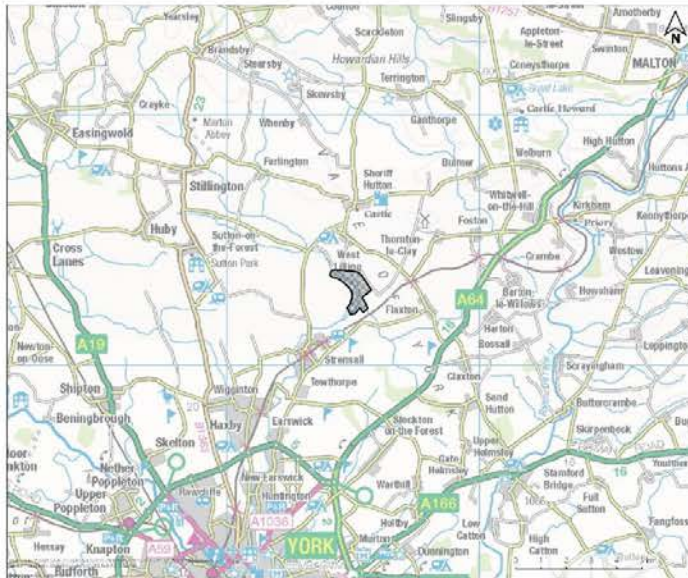


Figure 3. A map showing the location of the proposed flood storage area.

2.4. Why is it being built here?

The Environment Agency developed a long-list of options for reducing the risk of flooding for properties in York. One of the options considered included the construction of flood walls, in the northern parts of the city neighbouring the Foss. In such a densely settled urban area, the construction would have caused a huge amount of disruption for a significant period of time and the walls would have separated the river from people who enjoy it and wildlife that depends upon it.

The flood storage area was considered to be a less disruptive and less intrusive option, offering better value for money. It is also better for the environment by helping to connect the wildlife to the river on which it depends.

We selected this location because it offers the opportunity to store the required amount of water on open farmland.

2.5. When will it be built?

We will start preparing the site for construction after we get planning permission. If all goes well, we hope this will be in early 2020. The main construction phase will be completed in 2021 but additional landscaping work will be required afterwards. Landscaping will make sure that the grass has established correctly along the embankment and that trees, shrubs and other planted material has become established.

2.6. What will it look like?

The reservoir will consist of an embankment 1.65 kilometres long and 3.85 metres high at its highest point. It will be adjacent to the river and have a concrete control structure containing the orifice which controls the flows. The embankment will reduce in height as it tapers into higher ground in the landscape surrounding the river. The average height of the embankment will be 2.5 metres.

The embankment will be covered with grass and will be fenced off so it will not be accessible to the public. It will be visible from Lilling Low Lane to the east of the Foss and

from the Foss Walk, Centenary Way and Ebor Way footpaths, and a small number of houses and farms nearby. Figure 2 shows the main features of the proposals.

Part of the southern section of the embankment has been designed to act as an emergency spillway, to allow water to spill out from the reservoir if it becomes full following extreme rainstorm. This section is made from reinforced concrete, but constructed with regular holes that will allow grass to grow through. This means that from a distance, it will just look like grass

2.7. Will other water courses be affected?

The embankment starts 174 metres upstream of the point where the Foss joins with Black Dike. Flows from Black Dike will not be captured in the storage area. Land drains in the storage area will be diverted into ponds and will flow into the Foss.

Some land drains immediately outside of the flood storage area may be fuller for longer, but only in extreme flood events in which they would be overwhelmed anyway. Watercourses above the flood storage area will not be affected by the storage area.

2.8. Who has been told about this development?

The Environment Agency has consulted with a wide range of stakeholders in developing these plans.

Ryedale District Council, City of York Council and North Yorkshire County Council all responded to an initial consultation on the proposals in 2018.

The River Foss in the area where the reservoir will be built is classified as an "Ordinary Watercourse" and is the responsibility of the Foss Internal Drainage Board (IDB), a member of York Consortium of Drainage Boards. The IDB responded to the consultation with specific requirements to incorporate into the final design.

We have organised public drop-in events in Strensall, Sheriff Hutton and Huntington Road in York. A first round of public drop-ins were held in December 2018 to get feedback on early designs for the scheme. A second round of drop-ins were held in October and November 2019 to present a more developed design.

Information about the project has also been available from the Environment Agency's drop-in centre at The York Flood Hub on Wellington Row in the centre of York.

We have held meetings with Parish Councils at Lillings Ambo, Strensall, Towthorpe and Flaxton to explain the aims of the scheme and how it will work, and to address concerns and incorporate changes where possible into the design.

Natural England, Strensall Camp, and Yorkshire Wildlife Trust have all been consulted on the proposals and the potential impacts of the scheme on the protected habitats of the nature reserve at Strensall Common.

A Statement of Community Involvement has been included with the planning application. This gives details of all the responses from stakeholders and how we have responded to these or addressed the issues raised in the design of the scheme.

3. ENVIRONMENTAL IMPACTS

3.1. What is the existing environment like in and around the site?

The proposed development crosses the river Foss, with embankments and the flood storage area extending up both banks into neighbouring fields where they link into higher ground. The area is predominantly agricultural but contains the river Foss and the drainage channel of Black Dike which offer river and bank-side habitats. There are small areas of woodland and a number of small ponds nearby and Strensall Common is located approximately 180 metres to the south east of the proposed development.

3.2. What are the main issues examined in the Environmental Statement?

The Environmental Statement has been prepared to focus on the main aspects of the environment that could be affected by these proposals. These impacts are described in the following environmental topics:

- Biodiversity and Nature Conservation
- Minerals and material resources
- Water Environment and Flood Risk
- Cumulative effects

3.3. How could the proposals affect biodiversity and nature conservation?

We have tried to avoid or reduce impacts to wildlife wherever possible. Where impacts are unavoidable we have planned the development to enable wildlife to recover and thrive in future.

Strensall Common is designated as a Site of Special Scientific Interest (SSSI) and internationally recognised as a Special Area of Conservation (SAC) for its ecological value. It provides a mosaic of wet and dry heathland which supports wildlife including several rare moths and bugs.

Recent surveys and historic records have shown that otter and water vole have populations living in Black Dike and the River Foss. Both species are protected by law and it is an offence to knowingly disturb them or key parts of their habitat.

The populations can fluctuate dramatically so further surveys will be conducted before construction starts and measures will be put in place to protect them, including:

- Moving any resident populations. If required, this would require a licence from Natural England to ensure it is done correctly.
- Cutting back vegetation to prevent voles from settling in working areas.

Bats have been considered but surveys have not found resident populations, although a single tree in the construction area has potential to provide a suitable site for roosting but this will not be affected by the construction.

Surveys have been carried out for reptiles and amphibians including Great Crested Newts. There are no Great Crested Newts currently living in the construction area but additional checks will be carried out before construction starts.

The site supports a thriving population of skylarks and other birds. We will do pre-construction checks to ensure that no existing nests will be disturbed and we will manage vegetation throughout the construction period to discourage birds from nesting in areas where they could be harmed.

A length of hedgerow and a number of trees will need to be removed in order to carry out the necessary road raising. This work will be done outside of the nesting season. We will replace any hedgerows lost during construction and position new hedgerows to improve the connections between important areas of habitat on the site and in the surrounding landscape

The line of the embankment has been designed to minimise the loss of woodland and ponds in the area.

We will dig the clay out of pits called "borrow pits." Any clay or soil that we can't use will be put back in to partly fill the pits but they will still be deep enough to become ponds. The ponds will be shaped and planted to support wildlife including wading birds. Reeds will be planted around the ponds to help improve the quality of the water entering the river Foss.

Once we start digging for clay, the pits will probably fill with water which we will need to be pump out. We won't pump this water straight into the river, because it will contain a lot of sediment. We will create some additional ponds to allow sediment to fall out of the water before it enters the Foss.

3.4. Are there any general precautions you will take to protect or support wildlife?

We will use the following precautions in order to protect wildlife:

- Scattered trees will be planted to create a network for bats and provide nesting habitats for birds.
- We will develop a plan to manage the site to support existing habitats and to offer a home to other rare species of wildlife.
- We have found some invasive non-native species. These can be harmful to the natural wildlife from the UK so we will work to kill and clear these from the site during the first 5 years following construction.
- We will use of pollution prevention and control measures during construction to prevent spills of fuel and oil from machines or other chemicals into the environment.

3.5. In general will this development be good for wildlife?

We believe that the answer to this question is yes.

The River Foss has been changed by humans over centuries, straightening it and narrowing it in order to improve drainage for agriculture. The river is also polluted with fertilisers and other chemicals used in farming, and some farming methods allow rainwater to wash soil into the river. All this soil and fertiliser means that a lot of wildlife that you might expect to find in this river is either not there, or is struggling to survive.

As land has been cleared and fields made bigger for modern farming machines, the space and habitats available to support wildlife has been reduced and separated.

This project will not fix these problems completely but it is an important step towards improving them to help wildlife in the Foss and the surrounding area.

3.6. What impact will these proposals have on local mineral reserves?

We need approximately 115,000 cubic meters of clay to construct the embankment of the flood storage area. In order to ensure the reservoir meets current safety standards for reservoirs, it is important that the clay used is structurally sound, and free from contaminants such as sand and will provide a barrier to the water that could be held.

We are fortunate that clay of the correct standard is available from within the storage area. The particular clay that we need arrived on the site during a previous Ice Age. It is buried below layers of soil and clay that have been brought to the site by rivers and through centuries of vegetation growth following the Ice Ages.

We have selected places on the site where we know that the clay is of good quality and relatively close to the surface so we can extract it more easily. Once the good clay has been dug out, it will be checked and stored, before being built into the embankment. Soil is also required to make a top layer to cover the clay core of the embankment, in order to grow a layer of grass. This will help to bind the surface together and prevent the embankment from being washed away by falling rain or drying out and cracking in the summer sun.

The clay that we want to use has been used historically for brick production, and has been surveyed and protected for that use. We now use many fewer bricks for construction but the protections over the clay still remain. North Yorkshire County Council is the local authority which manages the protection of clay and other important minerals. They will assess this application and how we plan to repair the site after we have removed the clay we need.

The clay we need for this development is only a small proportion of the clay resource available in the surrounding land, so we do not consider that removal and use of this clay is a significant negative impact.

Other important minerals including sand and gravel are also present, buried in the ground across the site. Some of these will become unavailable for future extraction if they are under the embankment areas dedicated to supporting wildlife.

The clay pits are called "borrow pits" because we will take out the clay we need but will partially re-fill the pits with any unsuitable material. The remaining pits will become ponds, connected to the river Foss. These will create new habitat for fish and other species that live in water, and for wading birds. These ponds will stay wet all year round but the depth of water will change.

We may need to use some clay from a nearby quarry in order to start the construction work early as it may take some time to prepare the borrow pits.

3.7. How will these proposals affect the water environment and the risk of flooding?

Rivers in the UK are protected by the Water Environment legislation and also receive international protection. The River Foss and Black Dike both receive this protection. They have specific objectives to improve the river ecology.

By installing the concrete control structure and changing the way the river behaves in flood conditions we could be making the river ecology worse. We will also be diverting a section of Black Dike and installing hard surfaces to ensure the river does not undermine the reservoir embankment. This could also harm the river ecology.

However, the two rivers are not currently in a healthy condition so there are other things we can do to improve them through this scheme. Every few years, machines are used to dig out the soft, silty bed of the river. This has removed the gravel that normally provides good habitat for fish, it has made the river banks very steep so they can collapse into the river, and it slows down flows in the river causing more silt to build up so more digging is required every few years.

We will change the profile of the rivers in and close to the Flood Storage Area to be more like a natural river, eroding in some areas and depositing in others and it will continue to change and improve naturally over time.

In order to comply with the legislation and to improve the condition of the river overall, we will do the following:

- We will create ponds to capture and reduce the amount of soil and sediment entering the river after it rains.
- We will plant reed-beds in the ponds that reduce the amount of fertiliser and other chemicals that can run off farm-land and into the river.
- We will change the banks of the rivers and how they are managed, making the banks less steep but the bed of the river narrower and more varied.
- Rivers naturally flood over into their flood-plain after a large storm. The storage area will allow the river to behave in a natural way but safely and without risk to people and houses, which will help to support wildlife that has evolved to live along river banks
- The agricultural land that remains in the flood storage area may have to be farmed differently to ensure soil and agricultural chemicals such as fertiliser or animal slurry cannot get washed into the river in a flood. There are separate farming rules to protect the river environment and prevent this source of pollution.

By doing all these, we believe that this scheme will improve the ecology of these rivers.

3.8. What are cumulative effects and how have they been assessed?

Cumulative effects have to be considered in an Environmental Impact Assessment. These can happen when a receptor such as a person, animal or plant is affected by 2 or more impacts. In this case, only one cumulative effect has been identified with 2 potential effects that could affect ground nesting birds.

Firstly, we could affect birds by restricting their potential nesting sites. This is important to ensure we don't disturb birds or their nests during the construction work.

Secondly, ground nesting birds could be affected in a flood event as flood water spreads across the storage area. These effects were considered to be a slight negative but the new habitat will be created for birds and other species, including ground-nesting birds so the long term situation on the site should provide better habitat.

3.9. Are there any other environmental issues not considered in the Environmental Statement?

It is important that the full range of impacts are considered in our application for planning consent. We have assessed a few topics and included them in the planning application, even though they are not included in the Environmental Statement.

These additional topics include:

- Landscape effects

- Visual Impacts
- Archaeology
- Traffic and transport

Detail on each of these topics is available in each of the specialist reports. The planning application also contains results from all of the surveys that we have conducted. The surveys have uncovered a lot of detailed information on subjects like the ecology, archaeology and ground conditions across the site.

4. What happens next?

The Environmental Statement has been submitted to City of York Council and Ryedale District Council along with the other documents that make up the planning application.

The two councils will publicise the application through their respective planning portals. Each council will send the application to statutory consultees and other specific interest groups. These groups have been identified as having particular importance, expertise or interest in reviewing this type of application

These groups would include North Yorkshire County Council as Local Highways Authority and Highways Agency and Natural England for their expertise regarding farming and wildlife.

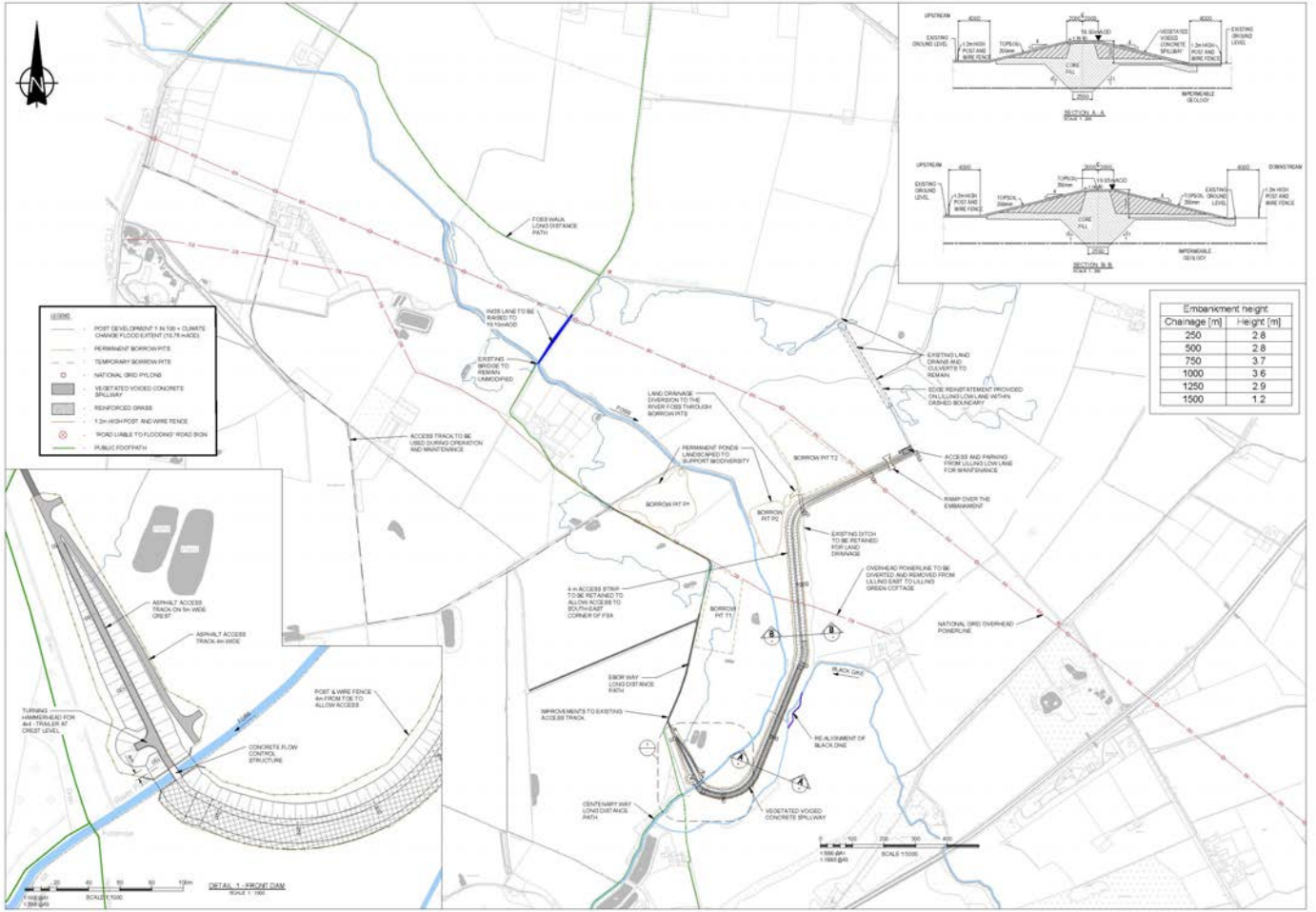
Specialists from the councils will comment on the chapters of the Environmental Statement and the additional topics such as archaeology.

Members of the public can make comments on the application through the planning portals.

The Planning Officers from each council will collect all the responses to the application and will present these in a report to their Planning Committee. The report will also present the Officer's recommendation stating whether the application is acceptable within planning policy and guidance.

The Planning Committee is made up from elected councillors, and they will decide whether the application is acceptable. This process should be completed within 16 weeks.

If we get the planning permission that we are seeking in time, we will start constructing the Flood Storage Area in Spring 2020.



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