

## Frequently asked questions

March 2021

### Ouse Washes bank raising – demountable flood barrier

#### **Why do we need a barrier at Welney Wash Road?**

As part of the Section 10 bank raising work undertaken to comply with the Reservoirs Act 1975, we must deploy a robust barrier on the Welney Wash Road/A1101 where it intersects the Middle Level Barrier Bank.

The Welney Wash Road crosses the Ouse Washes Flood Storage Reservoir and creates a low point in the Middle Level Barrier Bank. This low point increases the flood risk to the local community and the chance of a breach in the bank if water levels were to overtop it.

Historically, when the Washes is flooded and the water level at the Delph River reached a predetermined level, we created a temporary flood barrier across it using large sandbags. The last time we created such a barrier was in the winter of 2012/13.

Installing large sandbags is costly in terms of labour and waste (we cannot reuse them). We have sourced a more robust and easily deployable demountable barrier to protect Welney from flooding which we will store at our Ely depot.

#### **What will we be doing?**

We will build a short textured concrete support wall either side of the road for the temporary barrier to join. We will also install a concrete slab across the road for the barrier to be attached to whilst it's in use.

This is a vital part of our long-term investment in refurbishing and maintaining the Ouse Washes Flood Storage Reservoir and protecting surrounding properties.

We have agreed the detailed design of the demountable barrier, abutment walls and foundation with the Reservoir Engineer and the Norfolk County Council highways team.

#### **When will we do the work?**

Our assented working window for this project, agreed with Natural England, is between 15 July and 31 October each year. We are now planning to do the demountable flood barrier works during the summer of 2022.

We held a consultation last year (2020) and asked the communities to provide us with their preferred time to do the works which includes closing the Welney Wash Road for a 6-7 weeks. The majority of respondents chose the June to August period emphasising that they would prefer the road to close while the schools are closed too.

Since closing the consultation in September we have had some wet weather which prevented us from finishing the bank raising programme of 2020. We found ourselves with the dilemma of how we can finish the bank raising and also follow the majority of respondents preferred time period for the road closure.

We have to finish the bank works before we can start the works on the demountable flood barrier at the Welney Wash Road. The reason is because Welney and the haul road is the only way to bring material in for bank raising and there isn't enough room for deliveries and the works on the Welney Wash Road to be done at the same time.

There are utilities located in the road where we need to build the foundation and walls. We have liaised with the utility companies to agree what work needs to be done by them ahead of our work.

## **How long will it take to do the barrier work?**

The works will take approximately 14 weeks to construct which includes:

- 8 weeks approximately to construct the walls and this work will take place using traffic lights
- 6-7 weeks to construct the road slab and we will need to close the road to do this

Before we start the barrier works, we will apply for the road closure to Norfolk County Council, which can take up to 12 weeks for approval.

Before the road closure is removed, we will install the barrier as a trial and training exercise and to provide an opportunity for the local community to see it in action.

We will provide more details of these arrangements in due course once the contractor has produced the Traffic Management Plan.

## **Why is the road closure necessary?**

A road closure is necessary due to the excavation depth and the number of services buried under the road which we need to work around.

We need to build the formwork/temporary mould, install the reinforcement, cast the concrete and wait for it to set which can take up to 28 days. We will need all the available road space to do this.

## Have you investigated ways to reduce the length of the road closure?

We are working to reduce the length of the road closure. This includes:

- Designing the concrete mix for the slab to minimise the time it takes to set fully. This will be weather dependant, but we are aiming to reduce the 28-days mentioned above
- A full road closure will make it safer and quicker for our team to construct the walls and slab
- Finishing the bank raising works before we start on the barrier works will make it safer and quicker for our team to work

Other options we have considered are explained below.

## Will you be using temporary traffic management for as much of the work as possible?

The works will take approximately 14 weeks to construct which includes:

- 8 weeks approximately to construct the walls, kerbing and footpath adjustments and this work will take place using 2-way traffic lights enabling traffic access of the Welney Wash Road.
- 6-7 weeks to construct the road slab and associated surfacing; we will need to close the road to do this and provide a diversion route

## Why would the concrete slab take 28 days to set?

Concrete is a mix of water, sand, aggregates (gravel size stones) and cement. When mixed together these four materials form a pourable mix. Chemical reactions start occurring which lead to the mix getting harder and harder over time and ultimately result in the concrete becoming strong enough to bear loads.

The ratios at which each of the four materials is added to the mix determines the final strength of the concrete, which is normally measured after 28 days.

We have designed the concrete mix for the slab to minimise the time it takes to set fully. This will be weather dependant, but we are aiming to reduce the 28-days.

## Can the concrete slab be made off site and installed using a crane?

The concrete slab of the demountable barrier will span across the road. The slab will weigh in excess of 30 tonnes. The reach of the crane required would mean extensive temporary modifications to the road.

Due to the size of the crane required a road closure would still be needed. Additionally, we would have to modify the road to take the loadings of the crane and slab which would be equal to the amount of time it will take to build the slab on site.

## **Can you cast the concrete slab in two sections to keep one lane open?**

There isn't enough road width to cast the slab in two sections, allow one-lane traffic and allow enough space for a safe working area all at the same time. Similarly, to the above question we would need extensive temporary road modifications.

## **Will traffic run on the concrete slab or will it have asphalt over it?**

The concrete slab will be covered with asphalt, except for a 400mm wide strip across the road where the vertical barrier posts will be fixed directly to the concrete foundation when it is deployed. This will not be detectable by vehicles travelling over it.

## **Will the services under the concrete slab be accessible in case of emergency?**

The concrete foundation will sit above an existing telecoms cable and a drinking water pipe. We have made provisions in the design to allow access to these services after the construction of the foundation by installing ducts around the cable/pipe that will allow the utility companies to pull them out either side of the concrete foundation if necessary.

## **Can you work at night and bridge over the day for traffic to get through?**

When programming the work, we considered many options, including working for 24-hour shifts and only at night. The 24-hour shifts would not work, particularly as the nightshift would create noise from breaking the asphalt.

The noise and lighting equipment we need for night working would be disruptive. We would disturb local residents and wildlife by lights and noise; lights needed for operating at night and noise generated from operators communicating, breaking the asphalt and running generator for powering tower lights.

We considered a bridging option, but the excavation would be too wide to span with a bridging plate.

## **Can you work outside the bank works working window to build the barrier?**

We will need to gain assent in advance from Natural England to do the works outside the current working window, including using artificial lighting.

The Ouse Washes is considered to be the largest area of washland in the UK. In winter, the site attracts vast numbers of ducks and swans returning from Iceland, and in the spring hundreds of snipe, lapwing and redshank use the area to breed. As a result, the Ouse Washes is afforded a high level of protection having

Special Protection Area, Ramsar, and Special Area of Conservation designations.

The annual presence of breeding and overwintering birds is such that we are only able to work between 15 July and 31 October; any proposal to work outside of this period would require a Habitats Regulations Assessment to be prepared and submitted to Natural England, demonstrating that any works would not result in negative impacts on the interest features of the sites (i.e. the habitats and species for which the site has been designated).

Working during the winter months when the Washes is flooded would potentially make it very difficult for us to demonstrate that disturbance to the overwintering birds would not occur; this is primarily due to the requirement for artificial lighting as a result of low light levels and reduced daylight hours.

There are also many other health and safety issues associated with working in this location when the Washes is flooded, and this has ultimately led us to identify late spring and summer as the optimum period within which to undertake the works.

## **Can you work on the barrier construction when the road is already flooded and impassable?**

We considered this, but there are more disadvantages than there are advantages:

- It would be dangerous for the contractors to be working when the water levels are high in the Washes
- The road doesn't always flood in the winter so it's very difficult to plan for
- We only have a fairly short warning when the road is going to flood compared to the amount of time the contractor needs to obtain the appropriate consents and mobilise equipment, labour and materials
- As the contractors are not on site during the winter it will take them longer to deploy their resources from working on other locations
- The works will take longer as the days are shorter (fewer daylight hours).
- When the temperature is colder it affects how quickly the concrete sets (it takes longer)
- We would need to gain assent in advance from Natural England to do the works in the winter, including using artificial lighting
- Formal road closure needs 12 weeks advanced notice, even if the road is flooded and had to close.

## **Can you do the work at the height of the Covid-19 when more people are working from home and not affected by the road closure?**

Although the pandemic presented a unique opportunity with less traffic on the roads we are following a programme and sequence of works and we were not able to start work on the flood barrier until we have completed the bank raising at Welney.

We also wanted to give communities the opportunity to voice their preference in the timings of the barrier construction. That would not have been possible if we had changed our programme of work to deliver it during the pandemic.

## **What are the benefits of the demountable barrier at Welney?**

- Stronger, reliable, stable and a more robust method of flood protection
- Easier and quicker to deploy than sandbags – it will only take approximately 45 minutes to install
- Solely for use at Welney
- Acceptable to the Reservoir Engineer
- No risk of running out of sandbags in flood conditions
- No waste

We engaged early with Norfolk County Council Highways department and the West Norfolk & Kings Lynn Emergency Planner to successfully obtain their agreement to this method.

## **Why are you not using sandbags anymore?**

- They cannot be reused resulting in a lot of waste that we need to dispose of
- They take a long time to install – using up valuable resources who could be working elsewhere
- They are cumbersome to install; they are heavy, and they require lifting operations and manual handling
- They are not kept in storage ready for use – we would have to pre order them and if the circumstances change, we wouldn't be using them

## **What are you doing to minimise the disruption to local businesses?**

Early engagement and collaboration with all local business, including feedback from the survey results.

All communications and social media will state business open as usual.

Advance signage and clear 'named businesses open as usual' and diversion signage.

## **Will landowners still have access to their land on the washes?**

Access from Welney to the land in the Washes will not be available to landowners during the road closure. Landowners will need to follow the diversion route to access the land.

## **I live in Welney and didn't know anything about this project. Why have we not received letters through the door about the consultation?**

Last year (2020) is the only year we haven't conducted door to door surveys/letter drops due to Covid-19.

Communication for the consultation has been heavily dependent on engagement via local contacts, press releases, EA and local social media accounts, newsletters and the project noticeboards.

We have held public drop in events yearly in Welney since 2017, at either the Lamb & Flag or The William Marshall Centre. At all of these events we have displayed Welney Barrier material and information. At the most recent event in November 2019 we showcased the final plans for the Welney Barrier and asked for local opinion. All these events were advertised locally, in the papers, and invitations were delivered door to door in Welney.

As in previous years we have continued to communicate and engage through the Parish Council who help us to communicate to the local community. We also use the Welney News, Social Media and the project noticeboard that is located by the old parish hall.

We have a database of contacts for those who would like to be keep up to date with progress. If you would like to be added to the database, please contact our Public Liaison Officer.

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