Application for Determination

Parish: Loddon

Reference: BA 2013/0061/FUL Target Date: 21 May 2013

Location: Compartment 22 Right Bank of the River Chet, between

Pyes Mill and Nogdam End

Proposal: Flood defence works consisting of floodbank strengthening,

setback and rollback, soke dyke excavation for material sourcing and riverside piling 'removal' with temporary site

compound and associated engineering works.

Applicant: Environment Agency

Reason for referral: Major application

Recommendation: Approve with conditions

1 Description of Site and Proposal

- 1.1 The application site is in Compartment 22 and extends along a 4.2 kilometre length of floodbank on the south side of the River Chet from Pyes Mill to Nogdam End. Attached as Appendix 1 is a plan showing the extent of the application site.
- 1.2 As the application is supported with an Environmental Statement, its provisions are summarised in a non technical summary. This non technical summary is attached as Appendix 2.
- 1.3 Compartment 22 is extensive and protected by floodbanks on the Rivers Yare and Waveney, plus the New Cut (as well as the River Chet). In total these defences protect 2375 ha of land, much of which is drained grazing marsh / grassland.
- 1.4 In the application site the existing defences comprise a continuous earth floodbank (with a narrow crest and steep rear face) with erosion protection in the form of piling or a narrow vegetated rond. The existing banks have been rated by BESL as less than 15% in good condition, 33% in average condition and over 52% in poor condition. Erosion protection is provided by a combination of measures with 33% rond and 67% piling (measuring some 2.8km). The piling is 77% timber and 23% steel with BESL indicating that most piling is in poor condition above the water line with capping and / or tie rods failing.

- 1.5 Within the application site are two County Wildlife Sites (Loddon Common CWS and Old Hall Carr and Marshes CWS). Outside the site to the north is the Hardley Flood Site of Special Scientific Interest (SSSI).
- 1.6 In terms of heritage interest, the application site is outside any Conservation Area, has no Listed Buildings and the Environmental Statement identifies few archaeological features. However outside the application site, there are a number of areas where archaeological interest has been identified.
- 1.7 Discussions have been on-going for many years regarding flood defence proposals on the south bank of the River Chet. Following extensive preapplication consultation, the planning application submitted proposes the following works:

Proposed Works	Length (m)
<u>Floodbank</u>	
Maintain	264
Rollback	3819
Setback	130
Piling	
Removal	2834

- 1.8 All material for new flood defences is to be sourced from either the excavation of new soke dykes or from new shallow scrapes at Loddon Common some 2.0km to the west of Pyes MIII. No importation of clay material is proposed.
- 1.9 The application indicates all piles will be 'removed' and erosion protection provided in a more sustainable manner. The application proposes that rather than removing the piles; following the rollback of floodbanks the piling (once wailing and tie rods are cut off) will be driven to below bed level and to a minimum of 1.5 metres below mean low spring level.
- 1.10 Following concerns expressed by Broads Authority officers, BESL have agreed to undertake a trial to identify any adverse impacts as a result of the proposals to drive piles to bed level (and BESL are in the process of identifying the most suitable location(s) for the trial). The trial will drive one length of timber and one length of steel so that any differences can be identified. Subject to planning permission, BESL have indicated that rollback should be completed in 2013 and this would then allow the piles in the trial section(s) to be driven in Spring 2014. A method statement for the whole process including monitoring is to be provided by BESL and they have already made a commitment to fully remove the piles if there is a problem with the proposed technique.
- 1.11 The proposed works will result in the following change to habitat as outlined below:

Habitat	Net Change (ha)
Rond	+ 1.68
Bank	+ 0.73
Folding	+ 2.54
Soke dyke	+ 3.62
Marsh dyke	- 0.23
Permanent grass	- 0.13
Extensive grassland	- 5.36
Wet grassland	- 3.63

- 1.12 Grazing marsh is identified as a BAP priority habitat. BESL have indicated in this case that in view of its biodiversity value, they propose to create some 9.23 ha of replacement habitat to ensure no net loss of important grazing marsh.
- 1.13 The existing floodbank currently does not form a public right of way. The River Chet is well used for recreation purposes but the application site contains no moorings (either public or private).
- 1.14 Two site compounds are proposed firstly at Riverside Farm and also on marshes at Nogdam End. Should planning consent be granted, BESL propose to start works in Spring 2013 and earthworks and pile removal would be undertaken over a two year period.

2 Planning History

2.1	BA/2012/0139/FUL	Emergency piling removal and floodbank rollback (Compartment 22) - retrospective	Approved July 2012
	BA 2011/0405/FUL	Flood improvement works (Compartment 20)	Approved March 2012
	BA/2008/0315/FUL	Flood improvement works – pile removal (Compartments 21 and 22)	Approved November 2008
	BA/2007/0150/FUL	Provision of first time defences at Chedgrave & Loddon	Approved October 2007
	2005/0646/F	Flood improvement works (Compartment 21)	Approved July 2005
	E97/04/0975/F	Maintenance works Nogdam to Loddon (Compartment 22)	Approved September 2004

Flood improvement works	Approved September
Nogdam End to confluence	2004
with River Yare	
(Compartment 22)	

3 Consultations

<u>Loddon Parish Council</u> – General support subject to

- The standard of protection provided being at least 1 in 10
- Navigability of the River Chet being maintained to at least the current standard
- Future maintenance of the flood defences being the responsibility of the Environment Agency

The Parish Council reserve the right to reconsider its support for the scheme if local landowners express strong objections.

<u>Chedgrave Parish Council</u> – No comment.

Hales -w- Heckingham Parish Council - Awaited.

<u>Langley –w- Hardley Parish Council</u> – Approved as it is already underway. However, a number of concerns were raised:

- The frequency of overtopping has not been confirmed
- The details regarding the use of dredgings to form the top of the defences has still not been agreed with the Broads Authority, eg quantity required
- The continued navigability of the River Chet has not been confirmed
- Maintenance is still unclear

Broads Society – The Broads Society submit the following comments:

- We <u>object</u> to the work being carried out without a Public Right of Way being created. Bearing in mind that so much public money is being spent the public, should derive some benefit. It is our view that the work will give benefit to the landowners and they should be prepared to grant a Right of Way.
- We are concerned to note that, instead of completely removing the old piling, it is intended, as described on page 20 of the Environmental Statement, to cut the piles and drive them to a lower level; the drawings show them as being driven to a level with a minimum of 1.5m below MLWS with the walings removed. We wish to point out that, if dredging is carried out as intended and/or erosion takes place, these unprotected piles could present a hazard to vessels in the event of a very low tide. We therefore object unless they have adequate suitable marking, with a condition that the marking is maintained as long as the piles remain in situ.
- The re-profiled bank should be satisfactorily marked until there is good vegetation growth.
- We request a condition that no work takes place on Sundays or Public

Holidays.

NCC Highways – The proposed access routes are predominantly unclassified single track roads with minimum passing spaces. However, generally the horizontal and vertical alignment is such that there is good level of forward visibility. Daily traffic flows are unlikely to relatively low and the characteristics of the road and surrounding environment are likely to constrain traffic speeds. Furthermore the choice of this route takes construction traffic away from alternate routes which would pass through the residential areas of Loddon and Thurlton.

Having assessed the proposed traffic movements and vehicle types associated with the works, I do not consider that the choice of access route is unsatisfactory.

Accordingly in highway terms I have no objection to the proposals subject to the imposition of the following conditions on any grant of permission your Authority is minded to grant.

Prior to the commencement of any works a Construction Traffic Management Plan and Access Route which shall incorporate adequate provision for addressing any abnormal wear and tear to the highway shall be submitted to and approved in writing with the Local Planning Authority in consultation with Norfolk County Council Highway Authority together with proposals to control and manage construction traffic using the 'Construction Traffic Access Route' and to ensure no other local roads are used by construction traffic.

For the duration of the construction period all traffic associated with the construction of the development will comply with the Construction Traffic Management Plan and use only the 'Construction Traffic Access Route' and no other local roads unless approved in writing with the Local Planning Authority in consultation with the Highway Authority.

<u>Environment Agency</u> – We have no objection to the proposed flood defence works, for the following reasons. The works will mainly involve floodbank rollback which involves moving the crest of the floodbank away from the river's edge, some floodbank strengthening and some piling removal. The proposal does not change the defence level.

Hydraulic modelling has been undertaken to examine the effects of the proposed defences on water levels elsewhere. The modelling shows that the water levels on the right floodplain slightly reduced by up to 45mm and levels on the left floodplain slightly increased by up to 18mm in the 1 in 20 year tidal flood event. This can be considered to be insignificant. As the proposed works will reduce the risk of flooding to the land within the compartment, and will not increase flood risk elsewhere, we have no objection to the planning application.

Based on the information provided, the proposed development of the site would appear to pose a low risk to controlled waters with regard to land

contamination. However, if, during development, contamination not previously identified is found to be present at the site, that may pose a risk to controlled waters, then no further development (unless otherwise agreed in writing with the local planning authority) should be carried out until the developer has submitted and agreed a remediation strategy with the local planning authority detailing how this unsuspected contamination will be dealt with. The remediation strategy should be implemented as agreed. Under the terms of the Water Resources Act 1991, and the Anglian Region Land Drainage and Sea Defence Byelaws, prior written Flood Defence Consent from the Environment Agency is required for any proposed works or structures, in, under, over or within nine metres of the top of the bank of the River Yare, designated a 'main river' or within nine metres of the defences.

<u>Internal Drainage Board</u> – Awaited.

<u>Natural England</u> – The application site is adjacent to Hardley Flood SSSI, which is a component of Broadlands SPA, Ramsar. We appreciate that work will not take place in the most sensitive areas of the site during January and February, or during long periods of cold weather. However we have concerns about disturbance to wintering birds during other months in the winter (note that December could also strictly be classed as a peak month).

We therefore consider it important that the Ecological Clerk of Works is able to periodically review the effects of the works on wintering birds and to alter the works accordingly if necessary. If this advice is taken into account, we are happy for the works to proceed, providing all details are undertaken in strict accordance with the details submitted. We also consider that the Broads SAC is unlikely to be adversely affected by these works. The application site is adjacent to Hardley Flood SSSI. We note that disturbance to qualifying species of this site (Gadwall, Pochard, Shoveler and Bittern) has been considered but that only standard protected species mitigation has been included in relation to breeding birds, rather than any mitigation relating to specific species, nesting periods and locations. There is also little mention of other breeding bird species that are supported by the SSSI (but are not interest features of either the SSSI or SPA). These include Common Tern, Grasshopper Warbler, Cetti's Warbler, Reed Warbler and Jack Snipe, as well as several species of duck that nest in the reedbeds. These species are important when considering effects to the integrity of the SSSI.

We would therefore expect that the site should be assessed to ascertain any particularly sensitive nesting areas/breeding periods for specific species prior to the commencement of works, which should then inform mitigation proposals where necessary. Providing this is given further consideration prior to the commencement of works, we have no objection to these works in relation to the SSSI.

We understand that 9.35ha of grazing marsh will be permanently lost as a

result of this application. Whilst this constitutes a fairly large loss of BAP habitat, we understand that the overall net biodiversity gain from the project as a whole will ensure no adverse residual impact on the Broads designated sites, particularly when considered with the Environment Agency's scheme to create compensatory replacement BAP habitat in the Broads. We are therefore satisfied that the proposed operations will be beneficial to the long-term integrity of the sites and the wider catchment. In our view all the necessary protected species surveys have been completed and the Environmental Statement contains appropriate recommendations for mitigation where necessary. Providing all mitigation is carried out in accordance with the details as submitted, we have no concerns to raise regarding protected species.

RSPB –Awaited.

NCC Historic Environment Service – The site of a Middle Saxon to medieval settlement is located close to the western end of the proposed works and medieval pottery has been recorded elsewhere along the route. Examination of aerial imagery shows an earthwork feature that may relate to a palaeo-channel leading into the River Chet to the north of Beach Grove Farm. Consequently there is potential for previously unrecorded heritage assets with archaeological interest to be present within the area of the proposed works and that their significance could be affected. If planning permission is granted, we ask that this be subject to a programme of archaeological work in accordance with *National Planning Policy Framework* para. 135. We suggest that the following three conditions are imposed:-

- A) No groundworks shall take place until an archaeological written scheme of investigation has been submitted to and approved by the local planning authority in writing. The scheme shall include an assessment of significance and research questions; and 1) The programme and methodology of site investigation and recording, 2) The programme for post investigation assessment, 3) Provision to be made for analysis of the site investigation and recording, 4) Provision to be made for publication and dissemination of the analysis and records of the site investigation, 5) Provision to be made for archive deposition of the analysis and records of the site investigation and 6) Nomination of a competent person or persons/organization to undertake the works set out within the written scheme of investigation.
- B) No development shall take place other than in accordance with the written scheme of investigation approved under condition (A). and.
- C) The post investigation assessment should be completed in accordance with the programme set out in the archaeological written scheme of investigation approved under condition (A), and provision for the analysis, publication and dissemination of the results and archive

deposition should be secured within six months of the completion of the fieldwork.

In this instance the programme of archaeological work will comprise the monitoring of groundworks for the development under archaeological supervision and control for which a brief will be supplied by Norfolk County Council Historic Environment Service. It would also be prudent to carry out an auger survey across the possible palaeochannel to establish the nature of this feature and the deposits that it contains prior to any groundworks on this section.

SNC Environmental Protection Officer - Awaited

Norfolk and Suffolk Boating Association –The Norfolk and Suffolk Boating Association (NSBA) thanks the Broads Authority for the opportunity to comment on this application.

The piling on the true right section of Compartment 22 between Nogdam End and Pye's Mill has been deteriorating over the past 10 years or so, with consequent piling failures in a number of places which have created hazards to navigation. The poor condition of the piling has also prevented dredging of the full width of the channel in the above section in case it precipitated major piling failures and consequent bank collapse. The NSBA, together with the Broads Hire Boat Federation, has been pressing the Environment Agency and BESL for some time to tackle the 'piling problem'. If the proposed work is not done:

- Piling failure will become more frequent; more hazardous and disruptive to navigation; and more expensive to rectify than the comprehensive scheme proposed
- Larger craft will continue to find it difficult to proceed to and from Loddon and Chedgrave, to the commercial detriment of the various boatyards and retail businesses in those places.

The grant of planning permission in respect of the above application, subject to the conditions referred to below, would be wholly consistent with Development Management Policy DP13 (Bank erosion) and core Strategy Policy CS3 (Navigation) and would not be inconsistent with any other Development Management Policy or Core Strategy Policy.

The NSBA supports the application subject to the following provisos.

- That the grant of planning permission should be subject to conditions imposed in accordance with Core Strategy Policy CS3, that construction work involving the use of the river is carried on outside the main boating season (i.e. Carried out in November and March) and that such work is adequately marked and buoyed so as not to be a hazard to navigation.
- Although the NSBA appreciates the explanation for driving the piles below bed level, rather than removing them, and has no objection to such pile driving in itself, it does have concerns about the depth to which the heads of the piles are driven down. It is not clear from the planning application that the piles will be driven down below the dredging depth for

the Chet under the Authority's Sediment Management Strategy, so there is no risk that the heads of the piles being revealed by scoring or bank erosion. There should be a condition that pile removal method be trialled and proved to avoid these consequences before it is generally adopted. In addition, by a condition or otherwise, the Authority should secure that the Environment Agency would remove the piles if they become a problem in the future. Such a condition or other measures would be consistent with Core strategy Policy CS3

4 Representations

4.1 The Navigation Committee considered this matter at their meeting on 28 February 2012. The draft Committee minute states:

Officers were of the view that the application should be supported in principle and approved subject to the satisfactory outcome of a trial to ensure that the methodology proposed for driving the piles into the bed would not result in navigation hazards, the terms of which should be agreed with Broads Authority officers. A satisfactory mitigation statement detailing what would happen if the trial was unsuccessful and conditions covering submission of a method statement, erosion monitoring and appropriate channel markings as with other applications would also be required. Once complete, it should be possible to carry out full dredging of the whole river channel of the River Chet in line with the appropriate specifications and this was to be welcomed.

Members welcomed the proposals for the increased level of flood protection as well as the fact that there would not be any more onerous requirements on the landowner than those of others whose properties had been subjected to the drainage schemes. The Committee concurred with the officer comments and considered that the proposals should be supported provided appropriate conditions as proposed were attached to any planning consent.

4.2 Correspondence has been received from Savills on behalf of the Raveningham Estate (who owns in excess of half the length of the riverbank affected by the application). They are 'in general terms very supportive of the work that is being proposed..... and the sooner the application can be approved, the sooner the work can start. They do also highlight the following

There is only one issue about which we would like to make you aware as we believe the planning application that has been submitted is somewhat misleading. This relates to the Nog Dam which is effectively a crosswall running from Ferry Road at Nogdam End westward to join the River Chet bank. The dam is lower than the proposed height of the improved River Chet bank. The Nog Dam will therefore not contain any flooding in compartment 22 to that compartment (i.e. the Heckingham Marshes and the marshes running up to Loddon). If there is an overtopping event, then

the water will also eventually overtop the Nog Dam and, potentially, flood the Norton, Thurlton and Thorpe Marshes all the way down to Haddiscoe. All the more important therefore for the River Chet bank to be properly repaired as is being proposed.

5 Planning Policy

5.1 The following policies have been assessed for consistency with the National Planning Policy Framework (NPPF) and have been found to be consistent and can therefore be afforded full weight in the consideration and determination of this application.

Broads Core Strategy

Core Strategy (Adopted_Sept_2007).pdf

Policy CS3 – Navigation;

Policy CS4 – Creation of New Resources;

Policy CS6 – Historic and Cultural Environment.

Broads Authority Development Management Policies DPD

DMP_DPD - Adoption_version.pdf

Policy DP1 - Natural environment;

Policy DP11 - Access on land

5.2 The following policies have been assessed for consistency with the NPPF and have been found to lack full consistency with its provisions and therefore those aspects of the NPPF may need to be given some weight in consideration and determination of the application.

Broads Authority Development Management Policies DPD

Policy DP5 – Historic Environment Policy DP28 – Amenity

5.3 The following policy has been assessed as being in conflict with the NPPF because the detailed policy content, which is specific to the Broads, is not reflected in the NPPF. No weight can be given to this policy in the consideration and determination of the application.

Broads Authority Development Management Policies DPD

Policy DP13 – Bank protection

The NPPF represents a material consideration in determining applications. It highlights a presumption in favour of sustainable development. In relation to this application, the provisions of the following paragraphs are relevant. http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf

Para 109 - highlights the planning system should protect and enhance

valued landscape; and

Para 115 - recognises great weight should be given to conserving landscape and scenic beauty in the Broads;

Para 118 - highlights local planning authorities should aim to conserve and enhance biodiversity interest, ensuring protection of SPA, SAC's and Ramsar sites; and

Para 132 –recognises the care required associated with the impact of a proposed development on the significance of a designated heritage asset.

6 Assessment

- Based on the application proposals, site specific considerations and planning policy principles, it is considered that the main issues relate to:
 - Impact on water levels / standard of protection;
 - Impact on habitat and ecological interest;
 - Impact on recreation;
 - Highway considerations;
 - Other factors.

6.2 Impact on water levels / Standard of protection

- 6.2.1 The works proposed in this compartment will compliment other flood defence works undertaken nearby on both sides of the River Chet and also on the Rivers Yare and Waveney. The proposed scheme will provide enhanced protection for the area with floodbanks widened and raised to a consistent 'uniform' level that will provide protection to at least a 1 in 10 year event standard and to reduce the risk of breach on occasion when subject to overtopping. The Environment Agency, as consultee on this application, has confirmed that the proposal will reduce the risk of flooding to land elsewhere in the compartment, protecting the Broads landscape character, ecological features, business and heritage value.
- 6.2.2 Hydrological modelling has been undertaken and demonstrated that the works proposed in this compartment (and in combination with works already undertaken upstream and downstream) will not result in any significant or unacceptable increase in water levels. The floodbanks will also continue to maintained, until 2021 by BESL and after this date maintenance responsibility will pass to the Environment Agency.
- 6.2.3 In view of the above, it is considered that the scheme will reduce risk of flooding of land (using sustainable flood defence techniques), consistent with the aims of development plan policy and NPPF advice which seeks to protect and enhance the valued Broads landscape and character.
- 6.3 Impact on Habitat and Ecological Interest
- 6.3.1 The application site contains two County Wildlife sites but is outside any SSSI, although the Hardley Flood SSSI (which is a component of the Broads SAC and Broadland SPA and Ramsar sites) is located on the north

- bank of the River Chet. The area is important for wintering and a wide range of breeding species and Natural England has highlighted the importance of monitoring the impact of works on wintering birds.
- 6.3.2 Natural England has highlighted issues associated with potential disturbance to birds as a result of construction activity. To address impact, particularly during nesting / breeding periods, they have recommended that a site assessment be undertaken to identify locations of sensitive nesting activity so that a more detailed mitigation plan can be produced and implemented. It is considered that this approach can be addressed by a planning condition to ensure working practices do not unacceptably impact on ecological interest in important bird breeding and nesting periods.
- 6.3.3 The proposal to provide a more sustainable form of flood defence will result in a significant change in habitat in the compartment with the loss of over 9 ha of grassland / grazing marsh area (to be replaced by a combination of rond, sokedyke, folding and floodbank). This will create new habitat of some bio-diversity interest (but not of the same high ecological value as long established grazing marsh).
- 6.3.4 As grazing marsh is a BAP priority habitat, the wet and extensive grassland lost as a result of the proposed works is to be replaced to meet the regional target for replacement habitat (for example by conversion of arable field) to ensure no net loss of grazing marsh. This approach to replacement of habitat to be lost is welcomed and supported by the view of Natural England.
- 6.2.5 In view of the above, it is considered that the scheme will accord with the conservation management and sustainable development aims of the NPPF, Policy DP1 of the Development Management Policies DPD and Core Strategy Policy CS4.

6.4 Impact on Recreation

- 6.4.1 The River Chet offers important access by water to Loddon and Chedgrave and their associated facilities for visitors (both boatyards and services within the two parishes). However, within the application site there is no private or public mooring and no public right of way (with the Wherryman's Way following paths and minor roads some 300 500 metres to the south). In contrast, the opposite northern bank of the River Chet forms a public right of way, is regularly used by anglers and includes an area of Broads 24 hour mooring close to Chedgrave Common.
- 6.4.2 The application proposes rollback and strengthening of the floodbank; techniques used elsewhere locally (including on the River Chet). In rollback areas, piling will no longer be require for erosion protection purposes and BESL propose to 'remove' once rollback floodbanks establish (and this would be the subject of a separate planning application).
- 6.4.3 This application differs from similar proposals approved as piling is not

proposed to be removed but driven into the river (at a minimum level some 1.5 metres below mean low spring water). BESL propose this technique due to poor ground conditions and have indicated that there would be significant benefits for long term bank stability by the use of the technique of driving piles into the river bed in this case.

- 6.4.4 In previous applications for pile removal, the removal was only agreed following a trial of this technique to assess any adverse impact on navigation interests (notably as a result of siltation). It is considered that this new technique of pile driving (rather than complete removal) may also have the potential for adverse impact (such as piling not being capable of being safely or successfully driven, change in siltation or creating other navigation or dredging hazards). Therefore before this technique is used in the whole of the application site, it is considered appropriate that:
 - A full method statement, detailing the manner in which the work will be undertaken, is submitted and approved by the Authority;
 - A trial takes place (on both wooden and steel piles) to demonstrate whether this technique can be successful used in the River Chet following floodbank rollback; and
 - A mitigation strategy is submitted detailing how piling will be removed and / or other action take place, should pile driving in part or all of the application prove unsuccessful or lead to unacceptable harm to navigation interests.
- 6.4.5 In relation to other issues, the Navigation Committee considered that conditions, including detailing timing works and erosion monitoring / remediation, are required to limit impact on navigation interests. This view is shared by Planning Officers and therefore in a similar manner to previous flood defence planning applications in the Broads, should approval be forthcoming it is considered that the following conditions are justified and necessary to be imposed.
 - Pile driving timing to be agreed;
 - Navigation / channel / hazard markers to be installed, including linked to roll back and pile 'removal', etc;
 - Erosion protection details to be agreed prior to works being undertaken;
 - Phasing of works to be agreed (to avoid any water based works during peak season);
 - Erosion monitoring to accord with the agreed specification.
- 6.4.6 At present the southern bank of the River Chet does not form any public right of way. The Broads Society has raised similar concerns to those raised in Compartment 19 regarding the use of public monies to finance flood defence improvements without securing their use as an extension to the network of public rights of way.
- 6.4.7 It is considered that the improved floodbank to be created would be capable of use by walkers. However, this would need to be subject to negotiations with landowners to achieve public access on to floodbanks. As in Compartment 19, it is not considered reasonable to require BESL to secure

new footpath routes as part of this application. However, it is welcomed that this BESL work may facilitate improvements should these be negotiated with the relevant landowners to enhance access in the Broads and that the flood defence works will offer an opportunity to use them to extend the rights of way network close to the river (especially as the design of floodbank improvements and their crest width should offer wider and more consistent level surface).

6.4.8 In view of the above, it is considered that the proposal will not unacceptably impact on navigation or other recreational interests or access to water and subject to the suggested conditions will provide the necessary control to meet the aims of policy CS3 of the Core Strategy DPD.

6.5 <u>Highway Considerations</u>

- 6.5.1 In this case there is no need for the importation of clay onto the site (as sufficient material can be sourced from new soke dykes and from a new scrape adjacent to the improved banks for the works).
- 6.5.2 Therefore traffic movements associated with the proposal will be limited (once plant and machinery arrives on the site at the start of the project). The application shows access to the site from Ferry Road without passing through any residential areas of Loddon and the Highway Authority have raised no objection to the proposal, subject to a standard condition regarding repair to the access route resulting from construction traffic.
- 6.5.3 Based on the above and subject to the suggested condition, the proposal will meet the highway safety aims of policy DP11 of the Development Management Policies DPD.

6.6 Other Considerations

- 6.6.1 The compartment has some heritage and archaeological interest. NCC Historic Environment Service consider archaeological / heritage interest can be safeguarded with the imposition of a planning condition to protect and record archaeological interest. It is considered with the imposition of the condition that the aims of Core Strategy policy CS6 will be met, along with policy DP5 of the Development Management Policies DPD when considered in conjunction with NPPF advice.
- 6.6.2 The application site has only a limited number of properties close by.

 However given the quiet nature of the area, as suggested by the Broads
 Society, it is considered appropriate to seek to impose a restriction on hours
 of working to limit impact on the amenities of local residents and visitors.
- 6.6.3 The proposed works will have an impact on the landscape as a result of the construction activities and the appearance of bare floodbanks. This will only be short term and experience has demonstrated that banks re-vegetate during the first growing season after BESL complete works. Therefore it is considered that there will be no long term unacceptable impact on the

landscape appearance of the area as a result of completed works, consistent with the aims of NPPF advice.

7 Conclusion

7.1 It is considered that the proposed works will provide enhanced flood defence protecting land; nature conservation management interest; preserving recreational opportunities and safeguarding landscape value. Subject to the conditions outlined below, the scheme is acceptable and meets the key tests of 'saved' policies in the Broads Core Strategy and the Development Management Policies DPD plus NPPF advice.

8 Recommendation

- 8.1 Subject to no other substantive representation/comment being raised, this planning application be approved subject to the following conditions.
 - 1. Standard time limit condition
 - 2. Submitted plans / details
 - 3. Landscape/planting
 - 4. PD rights removed (pile removal)
 - 5. Erosion monitoring / remediation
 - 6. Ecological review
 - 7. Archaeological investigation
 - 8. Site access / delivery route / timing of importation
 - 9. Navigation / channel / hazard markers
 - 10. Hours of working
 - 11. Phasing of works to flood banks
 - 12. Detail of works to piling
 - 13. Erosion protection details to be agreed with Broads Authority
- 8.2 The following informative be specified on the decision notice of the planning application:
 - The permission shall be granted in the context of the Memorandum of Understanding between the Broads Authority and the Environment Agency on 25 April 2003.
 - Works may need separate consents under the Water Resources Act and Land Drainage by-Laws for flood defence consent.

9 Reasons for Recommendation

- 9.1 The proposal is accompanied by an Environmental Statement which outlines the proposal and the impacts on the area.
- 9.2 The application is accompanied by evidence that demonstrates that the proposal will not have a significant impact on water levels and will protect people, property and land interests.
- 9.3 The ecological interest of the area will be safeguarded by measures required by planning condition associated with the proposal and will not

have an unacceptable impact on bird activity in the area. The enhanced flood defences will deliver greater protection to a wide area of extensive areas grazing marsh. Furthermore it is considered that the proposal to create replacement BAP habitat (off site) will satisfactorily off-set the loss of over 9 ha extensive and wet grassland areas. It is considered that these factors will deliver clear benefits and mitigation, ensuring the proposal meets the tests of DP1 of the Development Management Policies DPD and Core Strategy Policy CS4.

- 9.4 The proposal has potential to impact on the River Chet and its important link from Loddon and Chedgrave to the River Yare. As techniques associated with 'pile removal' are new, it is necessary to place strict controls on this aspect of the application to safeguard navigation interests. However subject to planning conditions, the land and water based recreational interest will be protected as require by policies DP11 of the Development Management Policies DPD or Core Strategy Policy CS3.
- 9.5 Heritage, visual and residential amenity plus highway safety will be safeguarded as a result of sympathetic design, re-vegetation and working hours as promoted by necessary planning condition.
- 9.6 Therefore the application is considered to meet the requirements of the Broads Core Strategy DPD and Development Management Policies DPD policies, and would not materially conflict with other policies in the Development Plan Documents. The proposal is considered to represent an appropriate design of development associated with flood defence work in this location.

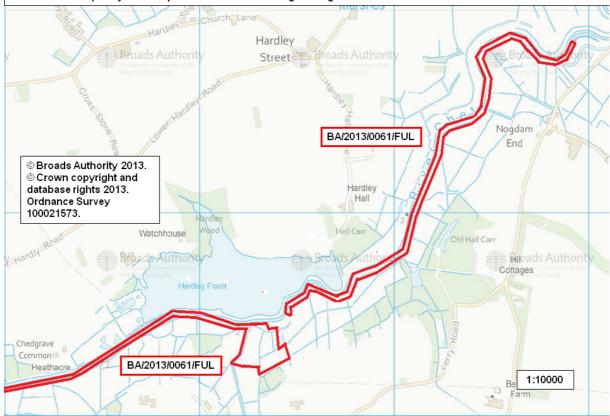
Background Papers: BA 2013/0061/FUL

Author: Andy Scales
Date of report: 11 April 2013

Appendices: APPENDIX 1 – Location Plan

APPENDIX 2 – Environmental Statement – Non technical summary

BA/2013/0061/FUL - Comp 22, The Right Bank Of The River Chet, Between Pyes Mill And Nogdam End, Loddon Flood defence works consisting of floodbank rollback, soke dyke excavation for material sourcing and riverside piling removal with temporary site compound and associated engineering works.



Broadland Environmental Services Ltd Compartment 22

Flood alleviation improvements for Pyes Mill to Nogdam End

River Chet

Environmental Statement Non-Technical Summary

February 2013

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Contents Amendment Record

Report Number: WNCHET/ NTS/001/

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Signed
1	0	Final	18 th February 2013	J M Halls

Introduction

Broadland Environmental Services Limited (BESL) is working on behalf of the Environment Agency to carry out a programme of improvement and maintenance works to the flood defences in Broadland. This work forms part of the Broadland Flood Alleviation Project (BFAP), a long-term 20-year programme of sustainable flood defence improvements in the area.

As part of this project BESL has prepared a scheme for flood defence improvements to a 4.2km stretch of floodbank along the River Chet between Pyes Mill (Loddon) and Nogdam End. This area represents part of "Compartment 22" of the BFAP. The flood defences protect approximately 100ha of low-lying land, the majority of which is agricultural marshes. There are a small number of residential properties that lie within or on slightly raised ground close to the compartment boundary.

The proposed improvement works need planning permission from the Broads Authority. To comply with planning legislation BESL has prepared an Environmental Statement in order to inform the public and decision-makers of the likely environmental effects of this scheme. This shorter report has been prepared as part of the Environmental Statement as a non-technical summary.

Need for the scheme

The standard of protection provided by floodbanks along the Broadland rivers is continually reducing because of settlement, deterioration over time, insufficient maintenance in the past and sea level rise. This makes the banks more vulnerable to erosion and at risk of breaching at times of high level flood events. Such breaches can cause widespread uncontrolled flooding which can have serious implications for the agricultural and wildlife value of the marshes. This situation is exacerbated along the Chet because most of it has a piled edge and the piling is starting to fail.

These proposals represent the final phase of works to a large compartment that extends from the south side of the Chet, along the Yare and Haddiscoe Cut and down the Waveney to The Waveney River Centre. Improvement works for these other areas were undertaken in three phases between 2003 and 2007. A large maintenance scheme was also undertaken on the Compartment 22 Chet floodbanks (those which are the subject of this application) in 2005 to provide continued protection for this area whilst a long-term flood defence solution was agreed.

Public consultation issues

As part of the planning and design process BESL has worked closely with the landowners that will be affected by, but also benefit from, the proposed scheme. There was some concern from landowners initially because the early designs showed a lower but wider bank, which would have meant that the marshes would be

subject to more frequent flooding. They were also concerned about arrangements for future maintenance. Depending on the timing and duration of flooding this could adversely affect the management and therefore reduce the economic value of the land. Subsequently, following further detailed investigation work and the input of a geotechnical specialist, the design was modified. This has meant that although the height of the bank will be lower than present along some sections, it will be at a uniform level that is still above the peak high water levels under normal weather conditions. When levels are above the 'normal' peak, usually caused by weather events causing a tidal surge, the banks will overtop in a controlled manner which is what they are meant to do. However, the wider bank will be more resistant to breach. The banks will continue to be maintained by BESL for the remainder of the contract through to 2021, after which the Environment Agency will assume direct responsibility.

The Broads Authority officers made a number of observations about the proposals, mostly relating to the potential impacts on navigation during the works and after the piling is removed. BESL has responded in writing to these observations and these will be considered at the BA's Navigation Committee on. The 28th February 2013.

Natural England advised that because of the proximity of Hardley Flood Site of Special Scientific Interest (SSSI), a Habitats Regulations Assessment would need to be completed. They also recommended that mitigation for breeding birds and a protected species assessment be included.

Full details of the issues raised by the consultation exercise are reported in the Environmental Statement that has been submitted with the planning application.

The proposed scheme

The proposals (Figure 2) comprise:

- 130m of floodbank setback;
- 3819m of floodbank rollback;
- 264m of maintain floodbank; and
- 2834m of piling removal

The landowner of the marshes at Pyes Mill is proposing to create a small mooring cut along a 40m length of bank that coincides with the first section of improvement works. These works would be undertaken together subject to the mooring cut receiving a separate planning consent.

Setback involves building a distinct new floodbank at least 10m inland from the existing bank. There is one location along the Chet where it is feasible to construct a setback bank.

Rollback involves moving the crest of the floodbank away from the river's edge but without constructing a distinct new bank. Once this has consolidated the old bank is lowered with the material used to raise the rollback bank to its final height and/or is placed on the rear face for future crest raising.

Piling removal will be undertaken once the rollback and setback banks have settled and consolidated. This aspect of the scheme is likely to take up to six months and will be programmed for the period November to March. The process will involve lowering the old bank and removing a wedge of material from immediately behind the piles. The topsoil from the front edge, containing reed and sedge rhizomes, will be stripped and stored carefully so that once the new rond and channel edge has been formed it can be placed back on top. Any walings and tie rods will be removed from the piling and then the damaged tops of any cut off. The piles will then be driven to below bed level, to a minimum of 1.5m below mean low water spring level. In other compartment the piling has been extracted but in this case, due to the poor ground conditions, calculations have shown that there is a significant benefit for long-term bank stability of driving the piles.

Construction material will be obtained primarily from the excavation of new soke dykes with some enlargement of existing soke dykes. Along one 200m length near Loddon Common material will be sourced from an adjoining area of marsh as part of a biodiversity enhancement to create scrapes.

Programme

The new banks will be constructed between April and October and then left to settle over the winter period. Vegetation clearance along the bank and dyke margins will be undertaken in February 2013 to discourage nesting birds and as the first stage of mitigation for water voles. The removal of the old bank and piling will be undertaken once the new banks are consolidated. The earliest that this is likely to begin is September 2014 and will take approximately 5 to 6 months to complete.

Land use and local community

The proposed works will maintain protection of the agricultural land that lies within the compartment. There will be a permanent loss of approximately 9.35ha of grazing marsh due to the need to excavate material and construct rollback and setback banks. The loss of productive agricultural land is regrettable but is small compared to the extent of land that will be afforded greater protection from the impacts of flooding were there to be a major breach. Furthermore, the works are only cost effective if the material is sourced locally from the adjoining marshes. There would also be a significant environmental impact of having to import huge quantities of clay to site via the local road network.

There will be some disruption to farming close to the works corridor during construction. BESL will provide landowners with appropriate compensation for both temporary and permanent effects. Any land, including access tracks and roads damaged by the construction process, will be returned to their original state upon completion of the works.

During construction there will be some noise disturbance and visual impact to nearby residents and visitors (see below for impacts on informal recreation). The contractor will operate a Project Management Plan that contains provisions for minimising disturbance to neighbours and the public through ensuring routes are adequately signed, speed limits are adhered to and public information boards are provided at access routes. The working period will be limited to Monday to Friday (07.00-18.00) and Saturday mornings (07.00-13.00) with no Sunday or Bank Holiday working.

Following completion of the scheme there will be long-term benefits for land use and the local community through the reduced risk of widespread, uncontrolled flooding that would occur if the banks were not maintained. This could also result in changes in the range of water levels in the river at Loddon and Chedgrave, which could affect the businesses there.

Ecology and nature conservation

The Broadland river corridors and marshes support a large variety of species, some of which are nationally rare. Surveys are therefore undertaken to identify any important habitats and species that need to be considered as part of both the scheme design and how the construction work is undertaken. Signs of water voles and otters were noted while the range of habitats provides suitable nesting conditions for many species of **birds** including lapwing on the marshes at Nogdam and sedge warblers in the reedy margins either side of the bank. A small number of grass snakes were recorded but the banks are generally unsuitable for lizards, adders and slow worms. The only notable plants found within the works corridor were marsh sow-thistle and marsh mallow. The dykes within the proposed working corridor do not support interesting plant communities though there are a number of rare aquatic beetles and molluscs. There is a good variety of habitats within the compartment including fen meadow, unimproved grassland, woodland and swamp. There are two County Wildlife Sites (Loddon Common and Old Hall Carr) within the compartment whilst Hardley Flood Site of Special Scientific Interest (SSSI) is located on the opposite side of the river.

The main potential impacts of the construction works on habitats and species are:

- risk of killing or injuring protected species including water vole and grass snake;
- · disturbance to breeding birds or destruction of active nests;

- disturbance to winter birds during the piling removal (notably those using Hardley Flood); and
- loss of vegetation, including notable species, on the floodbank, folding, and within dykes

These impacts will be avoided or reduced through scheme design and adoption of mitigation measures that have been successfully used on previous schemes e.g. discouraging nesting birds within the working corridor by cutting vegetation before the bird breeding season begins; vegetation cutting and sustained water-drawn down to displace water voles; programming of works to avoid working opposite Hardley Flood at the most vulnerable time.

Because Hardley Flood SSSI is part of three internationally designated areas (Broads Special Area of Conservation, Broadland Special Protection Area and Broadland Ramsar site) the Environment Agency and Broads Authority need to assess whether or not the scheme will have a significant effect on the species and/or habitats for which the international sites have been designated. The Environment Agency has concluded that there will be no significant effect but this will need to be ratified by Natural England and considered separately by the Broads Authority. The information to support this conclusion has been submitted with the planning application.

The net changes in habitats that will result from implementation of the scheme are listed in the table below.

Habitat	Net chang e (ha)
Rond ¹	+1.68
Bank	+0.73
Folding ²	+2.54
Soke dyke	+3.61
Marsh Dyke	-0.23
Permanent grass (Tier 1)	-0.13
Extensive grassland (Tier 2)	-5.36
Wet grassland (Tier 3)	-3.63

² Area between the rear of the floodbank and the soke dyke which runs parallel to it. Usually unmanaged though sometimes foldings are grazed.

¹ Area in front of floodbank which is usually above the average water level but will flood on high tides. Typically has a cover of reeds and other emergent vegetation.

Grazing marsh is a national and local Biodiversity Action Plan priority habitat. As part of targets set by the Department for Environment, Food and Rural Affairs (DEFRA), the Environment Agency must aim to avoid any overall loss of BAP habitat as a direct result of flood defence works. In terms of the Broadland Project the only means of cost effectively delivering the maintenance and improvement works to the flood banks is to source the material from the marshes. Consequently there will always be a reduction in the area of grazing marsh following the implementation of individual schemes. However, this reduction has to be considered against the fact that the losses are very small compared to the much larger area of grazing marsh, and associated wildlife that will benefit from improved protection afforded by the works.

Nevertheless, the Environment Agency intend to create replacement habitat (e.g. conversion of arable fields) to ensure that overall there will be no net loss of grazing marsh. The improvement of poor quality grazing marsh is also being undertaken as an option given the limited amount of arable land in the Broads. To date, 78ha of poor quality grazing marsh has been improved at Upton Marshes and Oulton Marshes, working with Norfolk Wildlife Trust and Suffolk Wildlife Trust respectively. Additionally 19ha of grazing marsh has been created from former arable (set aside) land at Horsey and 10.5ha of wet grassland for breeding waders at Tunstall Marshes. If there is difficulty with meeting the targets locally then alternative sites will be sought within the Anglian region.

Hydraulic modelling has been undertaken to examine the effects that the works could have on the SSSI during high tide and flood events. This has shown that there will be no significant changes to the regime within Hardley Flood (see Water Environment below).

Following completion of the scheme BESL will evaluate the success of the ecological mitigation measures by undertaking monitoring over a 3-year period.

Landscape and visual effects

There will be no significant long-term changes in local views or on the overall landscape character. The proposals will result in an increase in the extent of water as a result of the much wider soke dykes. However, open dykes are a feature of this landscape and the colonisation by reed and aquatic plants will soon soften the appearance of them. A wide ledge or 'berm' will be constructed to encourage reed growth, thereby limiting the extent of open water. Piling removal and re-grading of the old bank will create a natural edge to the river. The ongoing protection of a nationally valued and sensitive landscape from the effects of flooding, were the defences not to be maintained, is considered to be a major beneficial impact.

The most significant visual intrusion will be during the construction stage when there will be large areas of bare ground and working machinery next to the river. This will

be most apparent to users of the river and the floodbank footpath on the opposite side of the river.

On immediate completion of the works there will still be some visual impact due to the bare soil on the floodbanks and the widened soke dykes. However, grass will generally establish within one growing season and reeds will also have grown in the soke dykes, helping to blend the affected area back into the landscape, which will ultimately benefit from improved long-term protection.

Water environment

A key requirement of the Project is that during extreme high water levels (typically caused by tidal surges) the pattern of over-topping of floodbanks in the whole system should remain the same as that which existed in 1995 i.e. the relative height of banks between different compartments should remain the same. A hydraulic model has been developed to examine the effects on flooding patterns and river flows as a result of undertaking improvements so that design levels can be modified as required. The model has been used to examine the effects of this scheme together with others already completed and planned in other parts of the Yare valley. In this case it also examines how the flows into and out of Hardley Flood effect river levels. The model has been run for normal high water levels (i.e. without any tidal surge and/or high levels of rainwater coming in from the catchment) as well as major flood events i.e. those with a 1 in 20 year probability of occurring. The results for the normal high water levels demonstrate no changes in levels within Hardley Flood, upstream to Loddon and Chedgrave and downstream to the Yare. For the surge event the figures are mostly within modelling error (i.e. + or - <1cm). There are several points where the predicted changes are an increase of 1.8cm (north bank either side of Hardley Flood) or a decrease in 4.5cm along two points on the south bank. These figures are not absolute but indicative of the scale of any relative changes that there would be. They are small and insignificant in the context of a major flood event.

Construction work carries a risk of polluting watercourses and groundwater should there be an accident or spillage. Standard pollution prevention methods will be used to minimise the risk of an incident occurring that could affect the water environment. If an incident does occur (e.g. fuel spillage) then emergency procedures are in put place to deal with and report it. All contractors are briefed and trained about what to do in an emergency and have access to spill kits and booms. Soke dykes and marsh dykes will have clay bunds constructed at appropriate locations to keep the working area completely separate from the majority of the marsh network and avoid impacts on water quality and/or levels.

Archaeology and cultural heritage

Norfolk County Council's Historic Environment Record shows that there are a number of recorded features and finds of archaeological interest located within the compartment. Most of these relate to possible Roman, Saxon and medieval settlements. None of these features are within the working corridor. The finds include a medieval jug (on the floodbank near Loddon Common) and a medieval coin.

Because the works involve the excavation of material down to 2m there is the potential for buried artefacts to be uncovered. In a wet, peaty environment such features could include timber remains as have been discovered during work in other compartments. It is important that if anything is uncovered then it is properly preserved and recorded. The Project therefore employs and archaeologist to undertake an inspection of all areas of material sourcing once topsoil stripping has been completed so that any uncovered remains can be assessed. No excavation works will take place until the archaeologist has signed-off a particular area. Plant operators are briefed about the need to look out for any remains or artefacts and to stop work and report anything that they uncover.

The details of any additional requirements as part of an 'archaeological watching brief' will be agreed with Norfolk Landscape Archaeology as part of a planning condition.

Recreation and navigation

Broadland provides valuable opportunities for recreation and it is estimated that the area attracts more than 7 million visitors each year (Broads Plan 2011). Many of the recreational opportunities are water-based such as sailing and boating but land-based activities, including angling, walking and cycling, are also popular.

The River Chet is an important part of the Broads' navigable waterways. Several boatyards operate at Chedgrave and there are both private and free moorings at Loddon from where people can access the local shops and other amenities. There are additional free 24-hour moorings at Pye's Mill and on the north bank of the river adjacent to Chedgrave Common. There will be no direct impact on waterway users or any of the moorings. Although the earthworks will take place between April and October all activities will be behind the existing bank. There will be some noise and visual disturbance to users of the waterway but these are not considered to be significant and are unlikely to lead to people not using the river. A maintenance scheme was undertaken on large parts of the compartment 22 bank in 2005 and improvement works to the north bank in 2005 and 2006 without causing any significant impacts.

Once the new banks have consolidated there will be a need to remove the old bank and piling. This operation could take up to six months so will be programmed for November to March to avoid the main boating season. Most of the work will be undertaken from the land but there will be a need for a wherry and safety boat in the river so there will be localised width restrictions during this period. The timing and working methods used will be controlled by the Broads Authority through the imposition of planning conditions and the need for the contractor to apply for a Works Licence.

Much of the piling within the compartment is in poor condition and some is starting to fail. This poses a direct risk to boats and could also lead to sections of bank slumping into the navigable channel. A 100m length of failed piling had to be removed, and the bank rolled back, near Nogdam in 2012. The proposed works will remove these hazards and also allow the Broads Authority to dredge the full length of the river. This represents a positive benefit to users and local businesses.

BESL is working closely with a local landowner who would like to create a small mooring cut downstream of the Pye's Mill 24-hour moorings. The design of the rollback bank has taken account of this potentials scheme, which will be subject to a separate planning application.

There are no public footpaths along the floodbank in compartment 22. A footpath, which forms part of the Wherryman's Way Long Distance Path, runs along the opposite bank so the works will be visible to users. It is not considered that the work will detract from people's enjoyment of the footpath route; indeed it may add to the interest of their walk.

The north bank is also used for informal angling, especially from the start of the season in mid-June and throughout the summer. There will therefore be some visual and/or noise disturbance to anglers during the works. However, these are not considered significant given that the works will be confined to only one or two discrete locations at any one time and that alternative locations exist along the Chet and Yare.

Conclusions

Flood defence improvement works comprising a combination of bank rollback and setback ,combined with subsequent piling removal, have been identified as the most appropriate solutions to provide ongoing protection to the low-lying marshes between Nogdam and Loddon. Continuing with a maintenance-only regime is not sustainable and does not give landowners, businesses and the Broads Authority the ability and confidence to plan for the future.

Without these works the piling will continue to deteriorate and eventually fail, increasing the risk to river users and the potential for the bank to slump into the channel. A failure in the flood defences would also lead to regular, widespread

flooding of the marshes which would affect the ecology and economic value of the land.

There will be some unavoidable impacts on people and the environment during the construction period but these can be successfully mitigated at the time so that there will be no significant effects. The implementation of recommended mitigation measures, directed by an Environmental Action Plan, and completion of the scheme will ensure that the social, economic and environmental benefits of the scheme are delivered.

Further information

The Environmental Statement and associated planning drawings will be available to view, by prior arrangement, at the Broads Authority Offices, Yare House, 62-64 Thorpe Road, Norwich. Tel. 01603 610734.

Alternatively, for those with access to the Internet, visit the Broads Authority's planning web pages http://www.broads-authority.gov.uk/planning/public-access.html from where a link can be selected to the "Application Search" page. Select the "Advanced" tab and enter PP-02327472 under Planning Portal reference. All of the documentation including consultation responses will be available under the "Documents" tab.