Clarke & Simpson

Chartered Surveyors

My Ref: SEW
Your Ref: EN010012
Interested Party ref # 20028085

The Planning Inspectorate
National Infrastructure Planning
Temple Quay House
2 the Square
Bristol
BS1 6PN

Attention Sizewell C Case Team

Dear Sirs

The Sizewell C Project – Notification of wish to attend Accompanied Site Inspections (ASI) Issue Specific Hearing (ISH) and the Compulsory Acquisitions Hearing (CAH) re the inclusion of 'additional land' Change 11 at Pakenham

1. I write on behalf of Ms Dyball, Ms Hall and SR Whitwell & Co (#20028085), owners and farmers of 42 acres of grass meadow land at Pakenham, near Bury St Edmunds
2. The above interested party would like to invite the ExA to a **site inspection** of the land at Pakenham that was added to the DCO application in Jan 2021. This Pakenham land has been identified in addition to other land at Pakenham and some parcels of land at Benhall and Halesworth upon which to re-create fen meadow to compensate for the loss of 0.7ha of coastal SSSI fen meadow. It is important that the inspectorate visit the land at Pakenham in West Suffolk to understand the situation on the ground.
3. The proposals as understood, will destroy the livestock enterprise on the farm and so affect the livelihood and wellbeing of Charles Whitwell the livestock farmer. We therefore request a **Compulsory Acquisition Hearing**.

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4. The proposals will permanently damage an existing ecological valuable habitat, change a large area of the **hydrology** of the land which will have a detrimental effect on 100's of acres of farmland, and possibly cause an imbalance on the ecology of the local SSSI – we therefore wish to speak at an **Issue Specific Hearing**

5. We do not believe that the ExA can confirm that this proposed acquisition over 40 miles away from the development

   a) is necessary in West Suffolk (we know EDF could have acquired other suitable parcels of land that have been on the open market over recent years, and we believe other suitable sites can be found)

   b) is practical, feasible and will deliver the fen meadow as required (note Natural England's' comments about the difficulties in re-creating fen meadow)

   c) needs the amount of land identified

   d) is the most appropriate site for this mitigation; EDF must show their search data in the Waveney Valley and Suffolk Coastal

   e) will not have a negative effect on the surrounding farmland, the local Watermill, the summer abstraction rights from the central soak ditch or other users of the water supply in this region.

We examine the above points in further detail…

Livelihood, wellbeing of the farmer and the hydrological implications :-

The meadows provide the summer grazing for the cattle enterprise on the farm.

The farmer lives at Manor Farmhouse (1) (**see map below**) during the winter months the cattle are housed in the shed at Manor Farmyard (2) and in the summer months the cattle are herded to the meadows as shown along the tracks (3) as shown. There are some cattle handling facilities as indicated (4). The cattle take their drinking water from the central soak ditch (5). This soak ditch takes the drainage water from the surrounding arable fields * and the wood. The river Black Bourne is above the level of the fields. The central soak ditch flows northwards towards Pakenham Water Mill and Grimstone End - the soak ditch flows into the river beyond the Mill pond.

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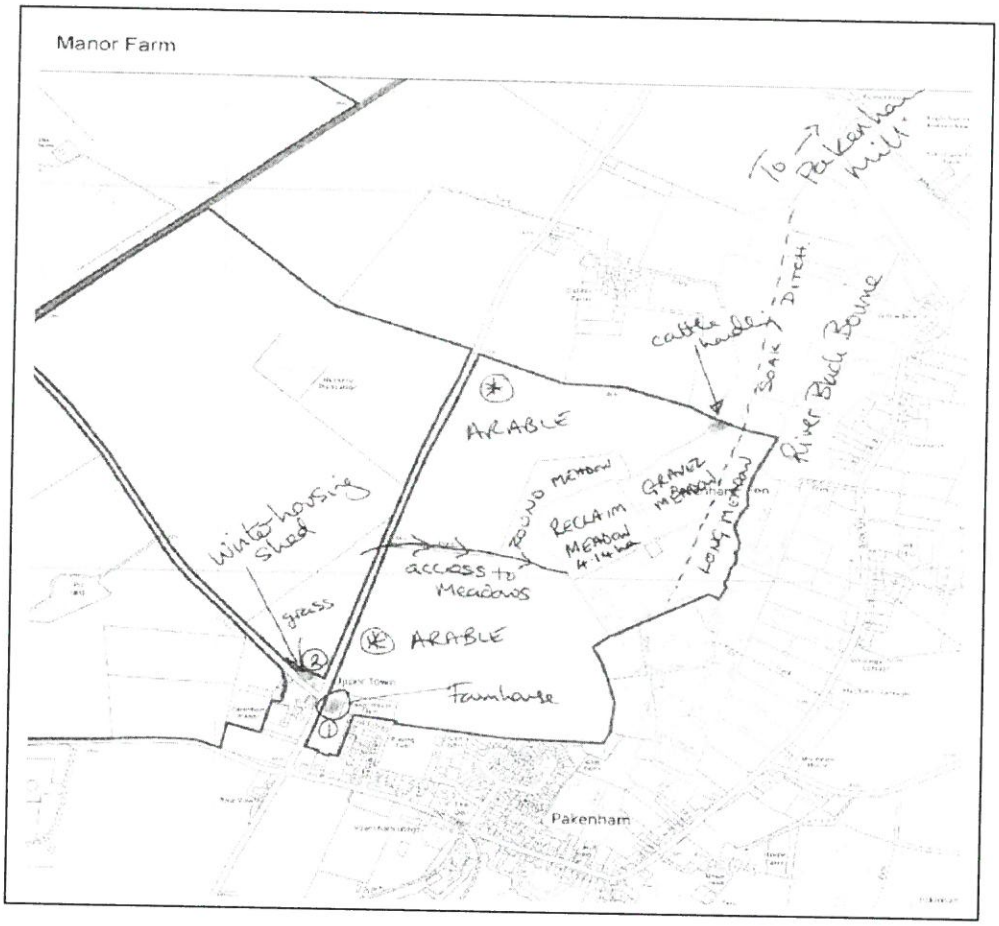

Any hydrological manipulation of the soak ditch and the drains within these meadows (the plan is to remove the field drains *see para 4.9.8 & 4.9.9 below extract from applicant doc*) will not only water log the meadows but have a knock on detrimental effect with regards to the drainage of the neighbouring arable fields *.

By re-creating fen meadow land there will be less grazing available and restrictions as to when the cattle can graze the land if at all. The farmer remembers his grandfather draining the fields in the '70's using MAFF grant monies to create the additional grazing land needed by the dairy herd at the time.

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The meadows support a 40 head cattle herd. If the grazing is lost - the summer grazing would have to be sourced elsewhere or the livestock will have to go. [redacted] (1) where the farmer lives is located near to the shed (2) for winter management and the meadows are also within walking distance - to find alternative grazing within this locality is **not** going to be easy and obviously will not be so conveniently located.

From the Sizewell C document **AS 156** extract below - in para 4.9.14 EDF are declaring that they have every confidence in delivering fen meadow creation at the Benhall and Halesworth locations. If this fen meadow recreation project delivers the mitigation then surely the remainder mitigation land can be found elsewhere either on EDF land at Leiston or elsewhere in Suffolk Coastal, why is the Pakenham land needed?

If it is deemed justifiable to take land in West Suffolk – may we suggest the amount of land taken be reduced? We refer to Vol 2 Appendix 14 page 7 NE advice 'the compensation sites must represent restoration of former fen meadow' – with a good hydrological management plan it would be possible to re-create fen meadow in the field identified as 'Reclaim meadow' on the map above 4.14ha. We believe it might be possible to manage the soak ditch for the benefit of the surrounding arable land, meadows and the summer abstraction rights of the neighbour.

This proposal together with the Benhall and Halesworth sites would deliver

We look forward to meeting you on site at Pakenham to explain the hydrology on the ground and show you the practical consequences that this proposal will have on the farmer.

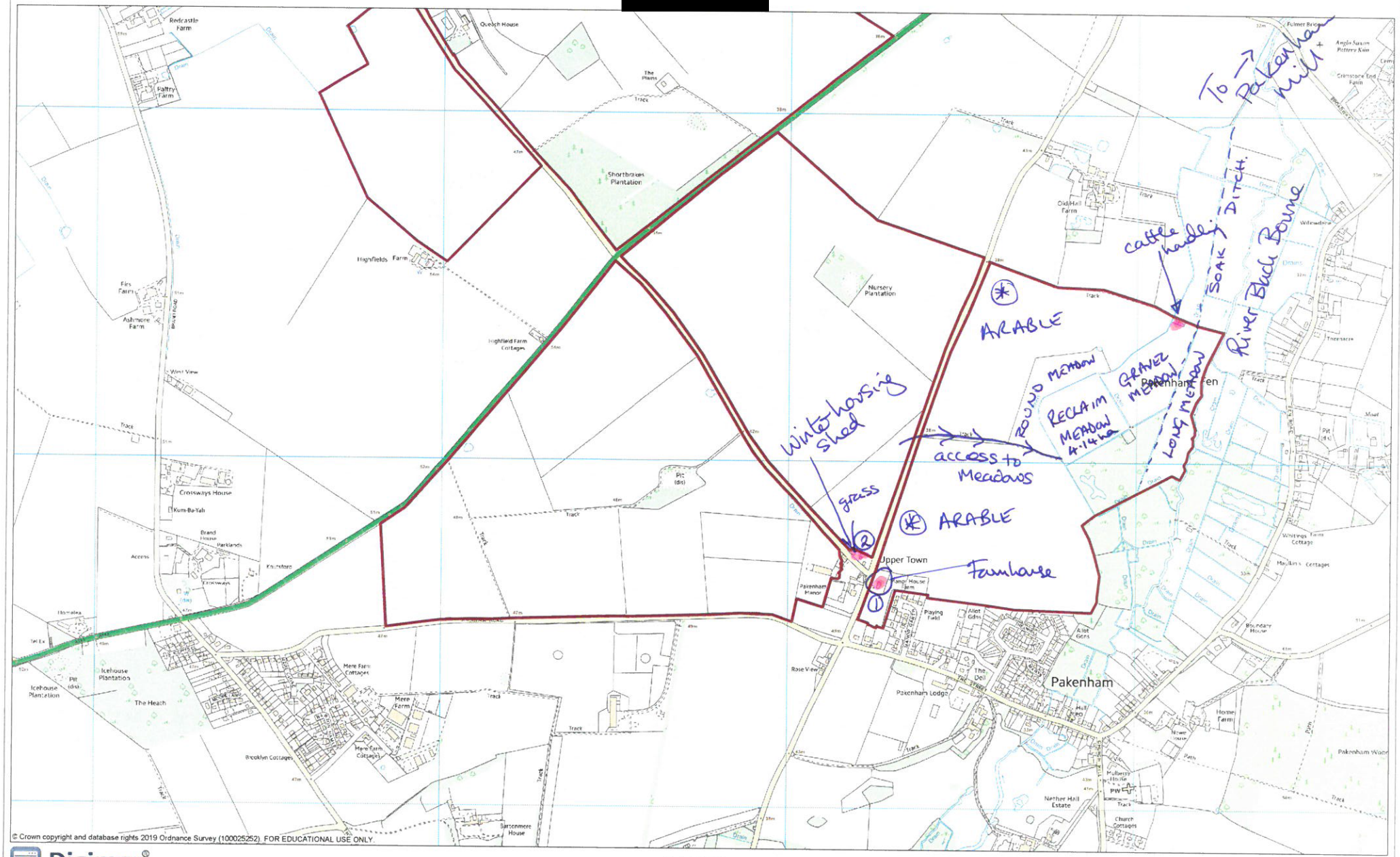
Yours faithfully

[redacted]

Sally Watts
Written on behalf of the owners Ms Dyball and Ms Hall and the farmers SR Whitwell & Co
[redacted]@clarkeandsimpson.co.uk

Enc – Manor Farm Map and extracts from doc

[redacted]



Digimap®
Ordnance Survey

Scale 1:10000

0 100 200 300 400 500 600 700 800 900 1000 m

Projection: British National Grid

Feb 25, 2019 17:45
Dominique Dyball
Harper Adams University

Consultee	Date	Comment	SZC Co. response.
		Again, as a first principle, we advise that the existing biodiversity value of these areas and the wider catchment (including for protected and priority habitats and species) must be assessed and any impacts avoided, mitigated or compensated. Furthermore, the works present opportunities for wider biodiversity enhancements including wider river restoration etc.; as we have raised a number of times since the Stage 1 Consultation (2013), holistic headwater seepage, floodplain and river restoration is likely to be the most successful and sustainable approach to providing this compensatory habitat. In line with our previous advice, the compensation sites must represent restoration of former fen meadow rather than enhancement of existing fen meadow. We advise that this restoration should be to base-rich groundwater-fed fen/fen meadow of which M22 *Juncus subnodulosus-Cirsium palustre* is a particular type. The M22 fen meadow is found across much of the UK and its composition varies considerably according to geography and other environmental factors. This type of vegetation normally occurs alongside other base rich groundwater-fed fens, including some that are rarer and support rarer species, such as M9 *Carex rostrata-Calliergon cuspidatum/giganteum mire*, which would occur in slightly wetter and slightly lower nutrient conditions than M22. If the restorations could create the range of conditions in which these vegetation complexes occur, the result would be far richer and probably more resilient than trying to create 'M22' only. Some turf/topsoil removal would certainly be required in order to do this. Some of the species in the best 'M22' at Sizewell, such as *Eriophorum angustifolium*, are more typical of M9-type conditions	part of Sizewell Marshes SSSI subject to land-take. Further assessment to maximise the extent of fen meadow, and potentially wet woodland at these sites is ongoing. Natural England's detailed points are noted and will be considered further as the next phase of study at these two sites is taken forward.

Below is an extract from the Planning Inspectorate letter dated Jan '21 determining that the Pakenham land could be included within the DCO application ...and reasoning why the land should be included

The additional Fen Meadow site at Pakenham (Change 11) **requires some 32ha** of additional land. However, the actual area of Fen Meadow habitat to be created within it would be about **4.9ha**. The 32ha of additional land for that site must be considered in the context of the total area of land included within the Order Limits for the original application or indeed even within the main development site alone. In addition, the Fen Meadow proposal would involve very limited actual development in order to convert the land from agricultural use to Fen Meadow habitat. When considered against that background, it evidently comprises a small ancillary element in the overall scheme. Whilst the Order Limits would be extended as a result of these changes, the changed application would remain in substance the project that was originally applied for, despite the addition of that land. The ExA has taken into account the explanation for seeking the changes provided by the Applicant, the significance of the changes in the context of the original application as a whole, and the information submitted regarding the likely environmental impacts. Whilst the ExA acknowledges the concerns expressed by certain IPs regarding the level of the information provided to support the changes, the significance of the changes and specific impacts upon their interests, the extent of these perceived impacts must be considered against the implications of the Proposed Development as a whole. In the main, the responses and points raised by IPs are either concerned with whether the changes are material, which is not in dispute, or how the changed application, if accepted, might be examined. Having regard to the nature and scope of the proposed changes, the ExA concludes that they represent material changes to the application, but it does not believe that their acceptance would result in a materially different project being considered. In the light of AN16, the ExA has also considered whether the combined impact of a series of incremental non-material changes collectively would result in a material change to the original application but it does not find that to be the case in the context of the Proposed Development as a whole. What is proposed by way of the changes can therefore still be considered under the existing application, provided that issues of fairness can be satisfactorily addressed. The concerns raised by the EA, MMO, NE and other IPs about the volume of new and additional information that was identified; and the time that would be required for them to review this information once it has all been received will be considered below. Whether the changes can be fairly accepted and examined

https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010012/EN010012-002945-SZC_Bk5_5.1Ad_AppxA_H_Consultation_Report_Addendum_Redacted.pdf

The following extracts have been taken from the above EDF document dated Jan '21

Extract from AS – 156, page

Note 4.9.2. summary as to how fen meadow is to be recreated

101

4.9. Extension of the Order Limits to provide for fen meadow habitat at Pakenham as further mitigation for fen meadow loss

a) The proposed development in the Application

4.9.1. As detailed in the Application, fen meadow compensation areas are proposed to be created at Benhall and Halesworth to compensate for fen meadow permanently lost from Sizewell Marshes SSSI as a result of the proposed development.

4.9.2. In order to create these habitats, minor changes to existing watercourses and field drains and local excavations may be required to both raise water levels and reduce nutrient levels. Further details on these two fen meadow compensation areas are set out in Volume 2, Chapters 2 and 14 of the ES.

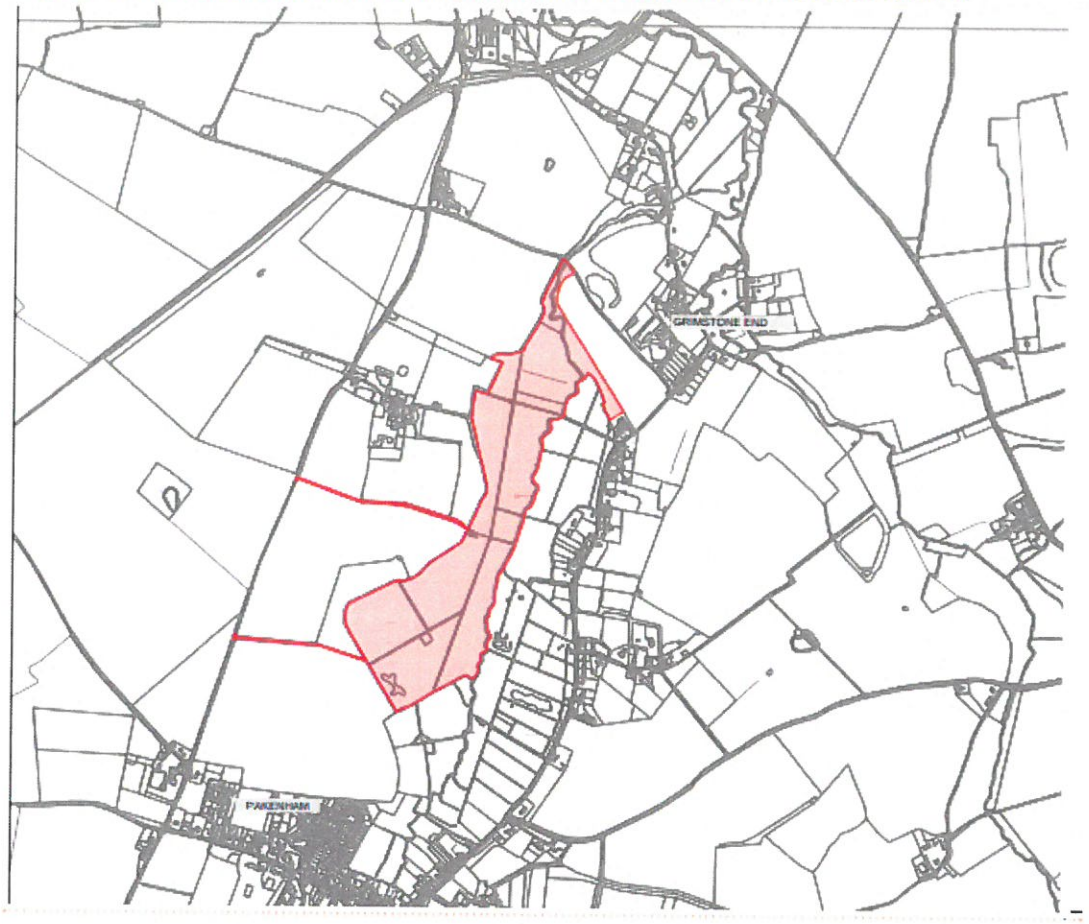
4.9.3. The areas within the two existing compensation sites which seem most likely to support fen meadow habitats (the 'primary loci') comprise 2.7ha, although there are additional areas within both sites which also have potential to support the establishment of fen meadow. Taking forward both sites therefore significantly increases the likelihood of the compensatory habitat creation works succeeding.

4.9.4. In October 2020 further work, including site investigation works and long-term monitoring, commenced on both sites to collect hydrological data. Surface water level and groundwater level data are being collected to determine the relationship between groundwater and surface water levels on site, whilst flow and quality data will provide information on potential quantum of water, and whether it is of suitable quality for fen meadow habitat, respectively. Data will be collected over a 12-month period and analysis will inform the development of conceptual designs and plans to maximise the likelihood of successful fen meadow establishment, to maximise the extent of habitat created, and to define the longer-term management requirements.

b) Description of the proposed change

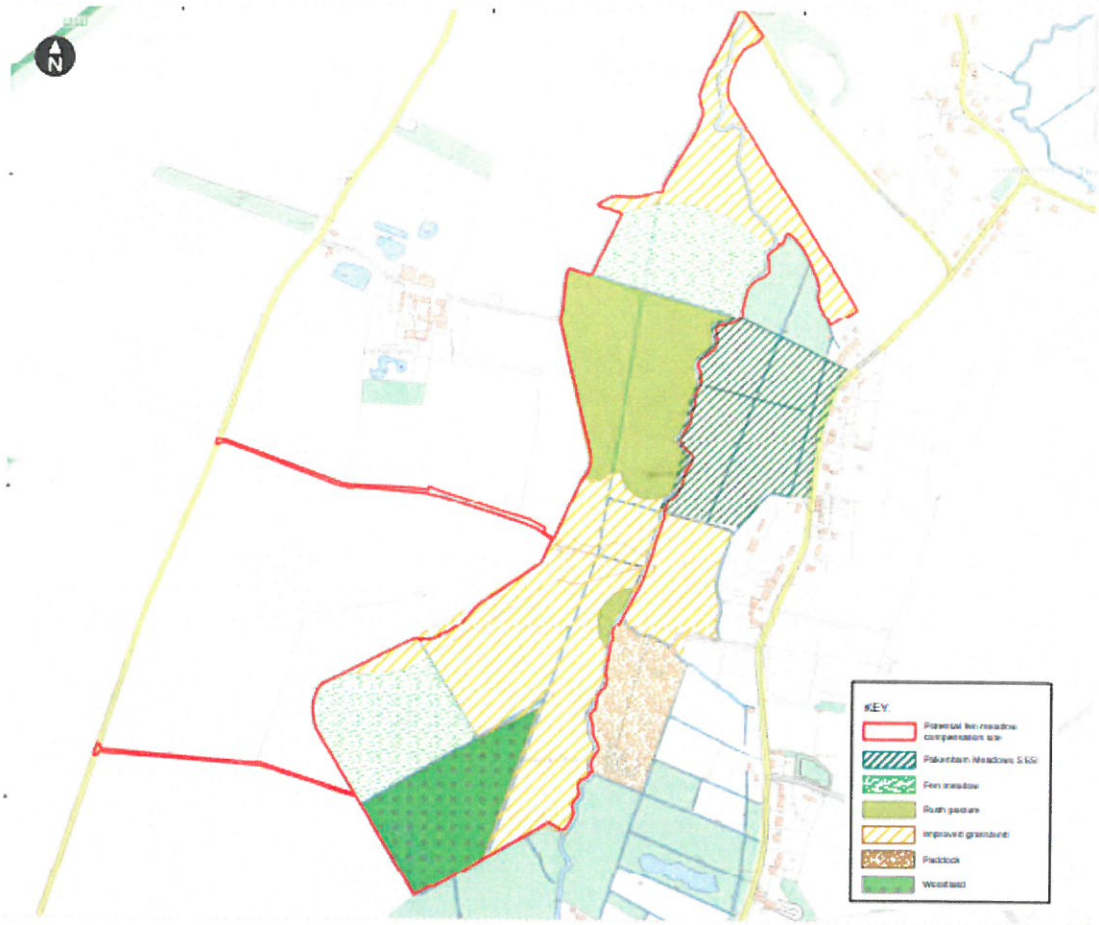
4.9.5. SZC Co. has identified an additional site at Pakenham (see Figure 4.21) in West Suffolk, which has the potential for creating fen meadow. The site proposed comprises approximately 32ha of land located to the west of Fen Road, south of Thieves Lane / Broadway, east of Thurston Road and to the north of the Street. As identified in Figure 4.22, the site currently comprises a mix of grassland, fen meadow, rush pasture and drier grassland and is adjacent to the designated Pakenham Meadows SSSI for which lowland wet grassland and fen meadow are the primary interest features.

Figure 4.21 Proposed location for the creation of additional fen meadow habitat



Above the land at Pakenham – Dyball, Hall, SR Whitwell land is referred to as the South part

Figure 4.22 Locations of vegetation types



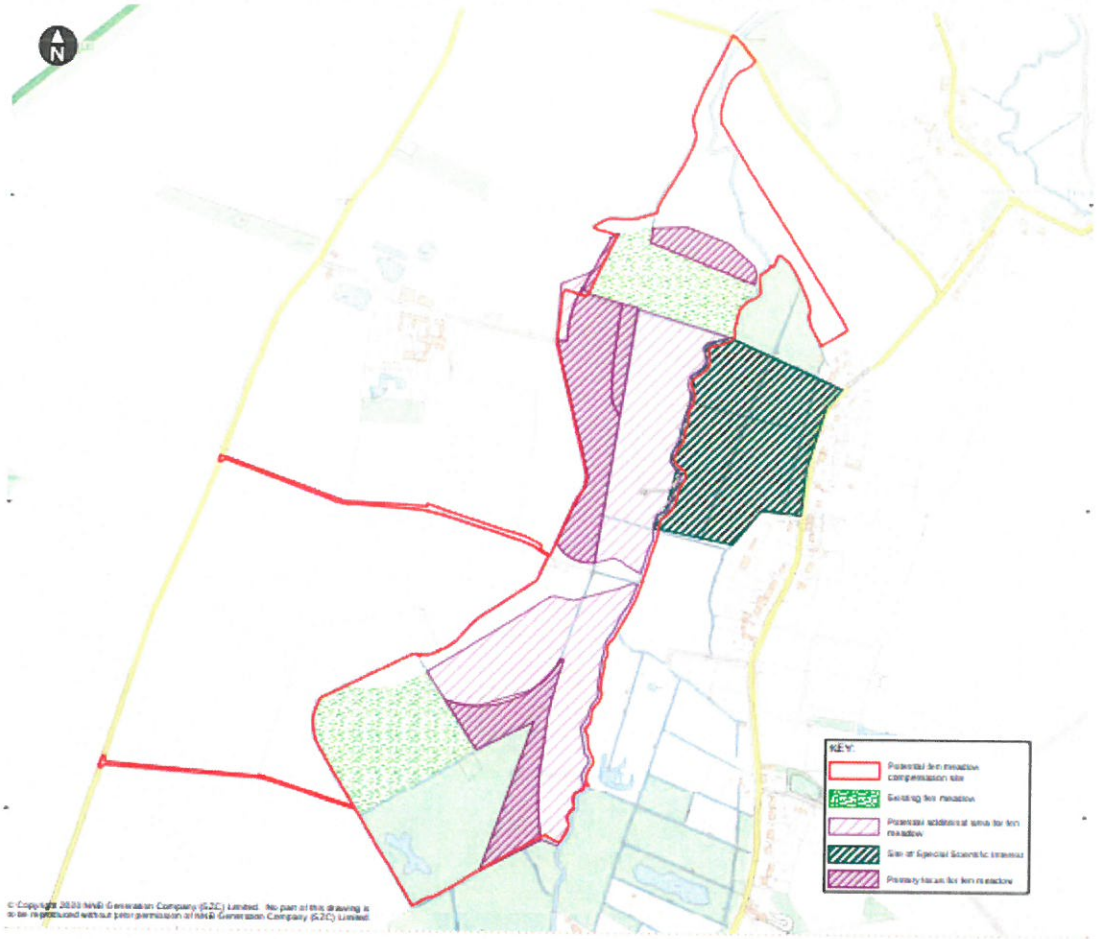
4.9.6. The site has been identified as being potentially suitable for the creation of fen meadow as it lies in a shallow basin bisected by the Pakenham Stream, and is in close proximity to other areas of fen meadow habitat. The site can be distinguished as two parts, 'north' and 'south', that lie either side of a 'tongue' of upland that divides the surface hydrology. Within the site identified, a total of 4.9ha is considered the primary locus for the creation of new fen meadow habitat, and some of the wider areas on the site may also have the potential for the creation of new fen meadow habitat (see Figure 4.23).

4.9.7. The primary locus for fen-meadow creation in the north part of the site is along the western slope and around the north side of an existing area of fen meadow, which together comprise an approximate area of 3.2ha. If control is exerted over the central drain, then large areas of rush pasture and improved grassland also have the potential to act as fen meadow compensation.

4.9.8. The greatest potential for developing fen meadow on the south part of the site lies in controlling the internal ditches connected to the central drain, which would encompass an approximate area of 1.7ha. The potential also exists to detain water in the topsoil within the surrounding improved grassland.

Note 4.9.8 – reference to controlling the hydrology of the central drain – this will have detrimental effects on the arable land and the Round Meadow

Figure 4.23 Areas of fen meadow habitat creation potential



4.9.9. Works to create the fen meadow habitat at Pakenham would be similar to those described in Volume 2, Chapter 3 of the ES in relation to Benhall and Halesworth, commencing at the outset of construction on the main development site, and could include:

- Installation of water control structures, to maintain / manipulate water levels.
- Removal of any existing field drains, to reverse historic patterns of drainage.
- Local excavation to reduce local ground levels, create low bunds and /or create minor surface watercourses to help distribute surface water and reduce nutrient levels.
- Translocations of some turfs from the fen meadow areas of the Sizewell Marshes SSSI that would otherwise be lost through construction works.
- Limited planting of other locally sourced native species and use of appropriately sourced 'green hay' from Sizewell Marshes SSSI or potentially adjacent Pakenham Fen SSSI to accelerate colonisation by key fen meadow species.

4.9.10. Figure 4.21 also identifies a number of potential access points between existing roads and the site which would be required to enable access to the site by construction vehicles and workers.

Further references re access and manipulation of water and removal of drains

4.9.11. Although there is significant potential for fen meadow habitat to be deliverable on one or both parts of this site, further detailed studies will determine the suitability of the areas identified. The presence of existing good quality fen meadow habitats on the adjacent SSSI, immediately to the north of the north site and in the south-western corner of the south site is encouraging for this location. It is recognised, however, that the development of the proposals for habitat creation at the site and any future management of the site will need to ensure these existing areas of fen meadow habitats are not put at risk by, for example, disruption of the existing water supply mechanisms.

4.9.12. SZC Co. will engage with environmental stakeholders to help inform the development of the detailed design and plans.

c) Why is this change proposed?

4.9.13. The additional fen meadow habitat is proposed to provide a greater area of habitat than would to be lost during construction. This will increase the chances successfully creating habitat of the same quality and distinctiveness.

4.9.14. The Application considers that in the unlikely event of failure to deliver the fen meadow compensatory habitats at either the Benhall and Halesworth sites, funding of other fen meadow habitat creation projects would be implemented at alternative locations in Suffolk to ensure the effects on fen meadow habitats as a result of Sizewell C would be fully compensated.

4.9.15. Further advice from Natural England, however, recommends that given the rarity of fen meadow in the UK and the known difficulty of restoring species-rich fen / fen meadow habitat, that a larger extent of land is required in order to provide sufficient compensatory habitat. SZC Co. is therefore proposing to include the site at Pakenham to further increase the probability of creating sufficient fen meadow habitat to compensate for the loss of fen meadow from the Sizewell Marshes SSSI.

4.9.16. Even with the inclusion of the site at Pakenham, SZC Co. would, in the unlikely event of failure to deliver sufficient fen meadow compensatory habitats, provide funding of other fen meadow habitat creation projects to be implemented at alternative locations in Suffolk.

d) Environmental impact of the proposed change

4.9.17. A preliminary environmental assessment of the proposed change has been undertaken. This section presents the consideration of the changes to baseline conditions (such as potential additional receptors affected and any changes to the extent of the study area), the assessment of impacts and mitigation required.

4.9.18. Table 4.7 provides a summary of the preliminary environmental assessments with reference to the Application for environmental topics and receptors where there is the potential for the environmental effects, as presented in the Application, to differ as a result of the proposed changes. This section also sets out further work to be undertaken to confirm the environmental impact of the proposed change, if it is confirmed to be taken forward.

e) Other environmental topics and receptors

4.9.19. The proposed design changes do not alter the baseline conditions, the assessment of impacts or mitigation identified for any of the other environmental assessment topic areas or receptors as presented in the Application.

Table 4.7 Preliminary Environmental Information for the proposed change

Topic / Receptor	Baseline Environment	Environmental Assessment	Next Steps and Further Assessment
Noise and Vibration [With reference to the Environmental Statement Volume 2 Chapter 11 (Doc Ref. 6.3)]			
Receptors close to Pakenham site	A predominantly rural area, with few major sources of noise nearby, other than the A143; the A14 lies approximately 4km to the south. There are residential receptors along Fen Road to the east, some of which are located adjacent to boundary of proposed Pakenham site, as well as on Broadway to the north. The village of Pakenham lies approximately 300m to the south.	No significant noise and vibration effects likely due to short duration of works in the vicinity of any particular noise sensitive receptor.	An assessment will be undertaken to predict, assess and report noise levels at nearby receptors.

4.9.14 EDF confidence in delivery of fen meadow at Benhall and Halesworth – please provide evidence of other locations that have been considered ref 4.9.16

Topic / Receptor	Baseline Environment	Environmental Assessment	Next Steps and Further Assessment
Air Quality **[With reference to the Environmental Statement Volume 2 Chapter 12 (Doc Ref. 6.3)]**			
Human receptors	The predominant land use is open farmland, and farming activities are expected to contribute to a baseline rate of dust deposition. The site is not anticipated to change the baseline assessment for air quality in the ES.	Construction of the fen meadow compensation site is not expected to result in significant effects on air quality at sensitive receptors. Earthworks and materials used for construction are expected to give a negligible level of risk of dust impacts. Traffic related to construction of the fen meadow compensation site is not expected to meet criteria that determine that an assessment of traffic emissions is needed. There would be no emissions associated with the site once the habitat is created.	No further assessment is required.
Landscape and Visual **[With reference to the Environmental Statement Volume 2 Chapter 13 (Doc Ref. 6.3)]**			
The site of the proposed fen meadow compensation would introduce new landscape and visual receptors such as local residents, users of rights of way close to and within the site and on local roads.	The site is located almost entirely within the Valley Meadows and Fens Landscape Character Type identified, mapped and described in the Suffolk Landscape Character Assessment. The site is located in relatively close proximity to residential dwellings off Fen Road and Thurston Road (Old Hall). A single footpath crosses the site (between Thurston Road and Fen Road at Old Hall and there are other footpaths in proximity.	The design of the fen meadow compensation area would retain established boundary vegetation where practicable and the creation of the fen meadow habitat would contribute to the enhancement of landscape character and improve biodiversity interest. During construction there are likely to be views of plant and works for the duration of the construction phase from visual receptors in close proximity to the site including on motorists, residents and pedestrians using local footpaths. The effects would be small scale, over a relatively short duration and experienced over a limited area. The works are also likely to have temporary effects on the character of the site and its immediate surroundings. However, because of their temporary nature the effects are not likely to be significant. Following the establishment of the fen meadow site, there would be no effects on landscape and visual receptors.	Update to the assessment of impacts from the change on landscape, character, visual receptors and designated and defined landscape will be undertaken.

Topic / Receptor	Baseline Environment	Environmental Assessment	Next Steps and Further Assessment
Terrestrial Ecology and Ornithology [With reference to the Environmental Statement Volume 2 Chapter 14 (Doc Ref. 6.3)]			
Pakenham site Habitat change	The existing site comprises a mix of grassland, fen meadow, rush pasture and drier grassland and is adjacent to the designated Pakenham Meadows SSSI for which lowland wet grassland and fen meadow are the primary interest features. Other than the existing fragments of fen meadow and the wetland channels and ditches, the other habitats are generally of low ecological value The existing baseline is more fully described in the Volume 2, Chapter 14, Appendix 14C4 of the ES.	Creation of the fen meadow habitats would lead to a change to wet grassland habitats which would be of greater ecological value than those present.	Further assessment of the existing ecological value of the site and of the hydrological conditions is ongoing. This will enable a more detailed strategy for fen meadow creation at this site to be developed.
Sizewell Marshes SSSI Habitat loss		The addition of this new site should increase the quantum of compensatory fen meadow habitat provided, and provide greater certainty that sufficient compensatory habitat will be provided. The assessment of the loss of fen meadow habitats from Sizewell Marshes SSSI would be unchanged from that presented in the ES, that being that the residual effect would be minor adverse and not significant.	
Amenity and Recreation [With reference to the Environmental Statement Volume 2 Chapter 15 (Doc Ref. 6.3)]			
Recreational receptors using PRoW	The site is beyond the study area of the assessment presented within the Application. There are a number of PRoW located within the study area including footpaths W-425/003/0 and W-425/002/0 which are within the order limit and footpaths W-425/001/0, W-425/005/0 and W-425/005/4 which are within 1km of the proposed development.	The proposals would result in minor changes to the setting of PRoW by replacing existing land uses with new fen meadow habitat. Construction works themselves would not significantly affect recreational amenity. Once construction works are complete the proposed changes are likely to enhance the landscape surrounding receptors and enhance the recreational experience. Footpaths W-425/003/0 and W-425/002/0 cross the site. These would not be temporarily or permanently diverted or closed during the construction or operational phases of the proposed development. None of the effects described above would result in significant adverse or beneficial effects during construction or operation.	Further assessment will be undertaken to understand whether any additional effects will be felt at nearby receptors.

Topic / Receptor	Baseline Environment	Environmental Assessment	Next Steps and Further Assessment
Terrestrial Historic Environment [With reference to the Environmental Statement Volume 2 Chapter 16 (Doc Ref. 6.3)]			
'Unknown' heritage assets.	The site is beyond the study area of the assessment presented within the Application. There are no designated heritage assets within the site; however, there are a few listed buildings along Fen Road, the majority of which are separated from the proposed development by dense mature trees. Those closest to the development are the Grade II Listed Oak Cottage (LB 1031472) and The Old Royal Oak (LB 1181430). Grimstone End multi-period site (PKM028) with burials, buildings and artefacts is recorded in the Suffolk Historic Environment Records as lying at the northern end of the site, along with other Roman sites. There is potential for additional non-designated heritage assets and previously unknown archaeological features and deposits within the site, particularly those associated with the Grimstone End site.	The proposed works could give rise to disturbance of archaeological remains, resulting in, at worst, a medium magnitude of change to remains of a medium heritage significance. This would represent a moderate adverse effect which would be significant in the absence of mitigation. Once complete, no change to the setting of designated assets is anticipated during the operation phase. No direct effects are anticipated during the operation of the proposed development.	Further assessment (evaluation work) would be needed to fully understand the nature and location of potential archaeological remains within the site and be able to inform detailed design proposals, and/or an agreed scheme of archaeological investigation.
Soils and Agriculture [With reference to the Environmental Statement Volume 2 Chapter 20 (Doc Ref. 6.3)]			
Agricultural Land Classification (ALC). Soil resources. Agricultural businesses.	The land appears to be grazed and is not under an environmental stewardship agreement. The site is underlain by Chalk Formations overlain by peat deposits, supporting the fen peat soils mapped as being present. These soils are organic and naturally wet. Available Provisional ALC mapping shows the land is mapped as Grade 4 (poor quality agricultural land).	During habitat improvement works, the site would be temporarily excluded from agricultural use. However, due to the short duration of any works required, the effects are not considered to be significant. Following completion of works, it is anticipated that grazing of the land would continue, albeit with a possible reduction in intensity. This is not considered likely to result in a significant effect on existing farming operations. However, further consultation with landowners will be undertaken to reduce the impacts from both construction and operation as far as practicable.	Further consultation with landowners will be undertaken to reduce the impacts from both construction and operation as far as practicable

Topic / Receptor	Baseline Environment	Environmental Assessment	Next Steps and Further Assessment
Geology and Land Quality [With reference to the Environmental Statement Volume 2 Chapter 18 (Doc Ref. 6.3)]			
Geological receptors Land contamination	The site is beyond the study area of the assessment presented within the Application. It is assumed that the land has always been open land as it currently is shown on maps. From publicly available sources, sand and gravel pits were present to the north east and east and are likely now infilled as well as an old chalk pit and refuse tip to the east. Further clarification of historical use would be required by reviewing desk study information including historical maps.	Limited excavation is proposed to reduce local ground levels, create low bunds and/or create minor surface watercourses to help distribute surface water. Physical effects including changes in soil erosion and soil compaction associated with stripping of topsoil, vegetation clearance, stockpiling, earthworks and associated machine movements are anticipated to be minimal. However, these effects would be mitigated by measures to be included within a Construction Environmental Management Plan. Impacts associated with ground contamination, if identified, would similarly be mitigated by good practice construction management measures to be included within a Construction Environmental Management Plan. With appropriate mitigation in place, no significant effects are considered likely. Following the establishment of the fen meadow site, effects relating to ground conditions are not likely to be significant.	No further assessment is required.
Groundwater and Surface Water [With reference to the Environmental Statement Volume 2 Chapter 19 (Doc Ref. 6.3)]			
Surface water	An additional watercourse, the Pakenham Stream, is within the new site, including floodplain areas and the associated land drainage network. Pakenham Stream is a tributary of the River Blackbourn. The proposed fen meadow site is immediately adjacent to the Pakenham Stream, which is classified as a Main River by the Environment Agency and is a reportable reach under the Water Framework Directive (GB105033043300). The site lies within the functional floodplain of the Pakenham Stream.	There is opportunity for the proposal to deliver significant beneficial effects to the surface water environment. However, there are risks of significant effects through changes in land drainage, flood risk and morphological processes. A minor adverse, short-term impact is predicted during the creation of the fen meadow habitat. Physical effects including erosion and sediment transport associated with stripping of topsoil, vegetation clearance, stockpiling, earthworks and associated machine movements is anticipated to be minimal. The impact would not be significant. Once complete there is the potential for an adverse, long-term impact on the conveyance of flows through the surface drainage network within the floodplain. The local effect would be to reduce the effectiveness of drainage within the site. However, the effect would not be significant.	Further assessment will be required to consider impacts to land drainage, water quality, geomorphology and the Water Framework Directive.

Topic / Receptor	Baseline Environment	Environmental Assessment	Next Steps and Further Assessment
	The morphology of the Pakenham Stream is of sufficient quality to support a classification of Good. The ecological status of the waterbody has been classified as 'Moderate' under 2019 Water Framework Directive reporting. Physico-chemical data for the Pakenham Stream indicates that it is at High status for all quality elements, with the exception of phosphate, which is at Poor status, and dissolved oxygen, which is at Bad status. This is likely to be due to high nutrient loadings from treated sewage effluent. The Moderate physico-chemical status is likely to be the result of the Poor phosphate status and Bad status of dissolved oxygen. The physico-chemical quality of the Pakenham Stream will remain moderate due to the continued consented sewage discharge, meaning phosphate levels within the system will remain elevated and dissolved oxygen will remain low. The Environment Agency's Flood Map for Planning indicates that the majority of the site is located in Flood Zone 2 and 3. Pakenham Stream provides a direct hydrological connection to the Pakenham Meadows SSSI, which lies immediately east of parts of the proposed fen meadow compensation site.	A potentially moderate, beneficial effect is predicted in respect of surface water systems. It is anticipated that the design will complement the existing floodplain and riverine habitats and, consequently, should give rise to beneficial significant effects for surface waters, especially in consideration of Water Framework Directive attributes.	
Flood risk **[With reference to the Main Development Site Flood Risk Assessment (Doc Ref. 5.2)]**			
Flood risk to adjacent areas	The Pakenham Stream, an Environment Agency controlled main river, and tributary of the Black Bourne, flows northwards along the eastern edge of the proposed Packenham fen meadow. A network of ordinary watercourses flow within the proposed fen meadow. The proposed fen meadow is primarily within Flood Zone 3 (High risk). The flood plain is well defined and has no properties within it.	The proposed fen meadow is primarily within Flood Zone 3 (High risk) and a fen meadow is a water compatible development which is appropriate for this location. The impact of measures to increase the wetness of the meadow should be limited to the meadow area if kept within the ordinary watercourses. Any measure which would have the effect of directly restricting the flow of the Pakenham Stream would have the potential to impact beyond the meadow and would require more detailed assessment and engagement with the Environment Agency. Any measure that forms a weir, culvert or like structure within the ordinary watercourses may require the consent of the LLFA (Suffolk County Council).	Assessment of impacts on flood risk will be undertaken for the proposed Pakenham site.
Habitats Regulations Assessment (HRA) (Book 5, Document Reference 5.10)			
There is no potential for the proposed change to alter the conclusions of the Shadow HRA Report (Doc Ref. 5.10).			
Water Framework Directive (WFD) (Book 8, Document Reference 8.14)			
The proposed change would not alter the conclusions of the Water Framework Directive.			