

Title: Orders under sections 38(8) and 39(12) of the Flood and Water Management Act (incidental flooding and erosion). Lead department or agency: Defra - Flood Management Other departments or agencies:	Impact Assessment (IA)	
	IA No:	DEFRA1145
	Date:	25/01/2011
	Stage:	Final
	Source of intervention:	Domestic
	Type of measure:	Secondary legislation
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Summary: Intervention and Options

What is the problem under consideration? Why is government intervention necessary?

Important features of the natural and cultural environment depend on the processes of flooding and erosion in order to maintain their value in terms of providing ecosystem services. However, the definition of flood and coastal erosion risk management in part 1 of the Flood and Water Management Act 2010, does not permit authorities to continue managing or causing flooding or erosion specifically for purposes of conserving or improving the natural environment or cultural heritage. It was therefore necessary to add sections 38 and 39 to ensure that ecosystem service benefits and environmental objectives could be realised. Sections 38 and 39 cannot be commenced until orders are made applying the compulsory purchase, powers of entry and compensation provisions in the Water Resources Act 1991.

What are the policy objectives and the intended effects?

To enable flood and erosion risk management authorities to manage or cause flooding and coastal erosion for the purposes of nature conservation (including conservation of the landscape), preservation of cultural heritage and people's enjoyment of the environment or cultural heritage.

To allow relevant authorities to carry out works necessary to meet legal requirements (for example to do with the Habitats Directives or the Water Framework Directive) and domestic objectives to maintain or improve the natural and historic environment, and people's access to the environment.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

1. Do nothing: i.e. not making the orders and not commencing sections 38 & 39 of the Act (this is the counterfactual against which options 2 and 3 are assessed).
2. Making orders that apply the relevant provisions without modifications
3. Making orders that apply the relevant provisions with modifications

Options 3 is preferred because it meets the policy objectives and answers concerns raised by landowners' representatives (NFU & CLA), during the passage of the bill through parliament, that there should be additional safeguards when works are being carried out for environmental purposes to protect the interest of landowners and managers.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 7/2016

What is the basis for this review? PIR. **If applicable, set sunset clause date:** Month/Year

Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?

Yes

SELECT SIGNATORY Sign-off For final proposal stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.

Signed by the responsible SELECT SIGNATORY: _____ Date: _____

Summary: Analysis and Evidence

Policy Option 1

Description:

Do nothing - i.e. do not make the orders and not commence sections 38 & 39 of the Act

Price Base Year 2011	PV Base Year 2011	Time Period Years 5	Net Benefit (Present Value (PV)) (£m)		
			Low: 0	High: 0	Best Estimate: 0

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	n/a	n/a	0	0
High	n/a		0	0
Best Estimate	n/a		0	0

Description and scale of key monetised costs by 'main affected groups'

No direct costs. However, the Environment Agency, local authorities and internal drainage boards would need to seek other means of meeting environmental requirements with uncertain powers which could lead to delays in taking projects forward and more costly implementation.

Other key non-monetised costs by 'main affected groups'

Government - Risk of infraction if flood and coastal erosion measures to meet the requirements of the Habitats, Birds and Water Framework Directives are not taken forward.
Community - Costs of net environmental degradation if flood and erosion risk management authorities do not have powers to take positive steps to improve the environment and enhance ecosystem services.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	n/a	n/a	0	0
High	n/a		0	0
Best Estimate	n/a		0	0

Description and scale of key monetised benefits by 'main affected groups'

No benefits

Other key non-monetised benefits by 'main affected groups'

No benefits

Key assumptions/sensitivities/risks

Discount rate (%)

The Government has committed to being the "greenest government ever" and one of Defra's top three priorities is "to enhance the environment and biodiversity to improve quality of life". There would thus be a significant reputational risk in not commencing the environmental provisions of the Flood and Water Management Act given the dependencies between flood and coastal erosion risk management and the state of the environment.

Direct impact on business (Equivalent Annual) £m):			In scope of OIOO?	Measure qualifies as
Costs: 0	Benefits: 0	Net: 0	No	NA

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?			England and Wales		
From what date will the policy be implemented?			01/07/2011		
Which organisation(s) will enforce the policy?			n/a		
What is the annual change in enforcement cost (£m)?			n/a		
Does enforcement comply with Hampton principles?			Yes		
Does implementation go beyond minimum EU requirements?			No		
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)			Traded: 0	Non-traded: 0	
Does the proposal have an impact on competition?			No		
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?			Costs: 0	Benefits: 0	
Distribution of annual cost (%) by organisation size (excl. Transition) (Constant Price)	Micro 0	< 20 0	Small 0	Medium 0	Large 0
Are any of these organisations exempt?	No	No	No	No	No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on...?	Impact	Page ref within IA
Statutory equality duties ¹ Statutory Equality Duties Impact Test guidance	No	
Economic impacts		
Competition Competition Assessment Impact Test guidance	No	
Small firms Small Firms Impact Test guidance	No	
Environmental impacts		
Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance	Yes	14
Wider environmental issues Wider Environmental Issues Impact Test guidance	Yes	14
Social impacts		
Health and well-being Health and Well-being Impact Test guidance	Yes	14
Human rights Human Rights Impact Test guidance	No	
Justice system Justice Impact Test guidance	No	
Rural proofing Rural Proofing Impact Test guidance	Yes	14
Sustainable development Sustainable Development Impact Test guidance	Yes	14

¹ Public bodies including Whitehall departments are required to consider the impact of their policies and measures on race, disability and gender. It is intended to extend this consideration requirement under the Equality Act 2010 to cover age, sexual orientation, religion or belief and gender reassignment from April 2011 (to Great Britain only). The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Summary: Analysis and Evidence

Policy Option 2

Description:

Make orders that apply the relevant provisions without modifications

Price Base Year 2011	PV Base Year 2011	Time Period Years 5	Net Benefit (Present Value (PV)) (£m)		
			Low: 0	High: 1.4	Best Estimate: 0.72

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low		0.02	0.10
High		0.14	0.65
Best Estimate		0.08	0.38

Description and scale of key monetised costs by 'main affected groups'

Costs relate to an illustrative scenario of 100 hectares of habitat being created per year, for a period of five years (to next review). This corresponds with current loss in protected European sites and is seen as a minimum. Operating authority costs relate to land and engineering costs of habitat creation, as well as compensation to landowners where relevant. Landowners' uncompensated costs assumed to be restricted to perhaps £50/ha. Total cost per hectare range £210-£1,400 per ha per annum.

Other key non-monetised costs by 'main affected groups'

The purpose of the order is to make the use of powers as close to cost neutral to those affected as possible. Although the aim is to fully compensate landowners, there could be minor impacts in terms of, for example, time, business disruption or stress that are not fully compensated. Although monetised costs include a nominal £50/hectare for this, impact will vary by site. There will be a modest cost (few to tens of thousands of pounds) to authorities in the administration of the provisions.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low		0.02	0.10
High		0.45	2.10
Best Estimate		0.24	1.10

Description and scale of key monetised benefits by 'main affected groups'

Benefits will depend on the ecosystem services provided due to works under these provisions. While these will be established case by case, for habitats, gross benefits might be in the range £200-4,500 per ha per year based on studies. It is assumed that only schemes with positive net benefits would be pursued by operating authorities having regard to their value for money obligations. Figures are based on a notional 100 hectares being delivered each year for five years.

Other key non-monetised benefits by 'main affected groups'

Other ecosystem service benefits provided or conserved as a result of the use of section 38 and 39 powers will depend on how the powers are deployed and have not been assessed. However, given the habitats that are most likely to be affected are associated with the coastal fringe and wetlands, the benefits could be significant because value of the ecosystem services provided by these habitats tends to be relatively high in studies carried out to date.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5%

The result that overall benefits outweigh the costs reflects a) the premise that the Orders are intended to make the use of provisions close to cost neutral to business, b) that works taken forward under sections 38 and 39 will either be necessary to meet minimum legal requirements or have a positive net present value. It is also assumed that residual uncompensated impacts on landowners and others are broadly £50 per hectare, or around £500 for a 10-hectare site, though evidence for this is only indicative.

Direct impact on business (Equivalent Annual) £m):			In scope of OIOO?	Measure qualifies as
Costs: 0.005	Benefits: 0	Net: 0.005	Yes	IN

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?			England and Wales		
From what date will the policy be implemented?			01/07/2011		
Which organisation(s) will enforce the policy?			n/a		
What is the annual change in enforcement cost (£m)?			n/a		
Does enforcement comply with Hampton principles?			Yes		
Does implementation go beyond minimum EU requirements?			Yes		
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)			Traded: 0	Non-traded: -(small)	
Does the proposal have an impact on competition?			No		
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?			Costs: 0	Benefits: 0	
Distribution of annual cost (%) by organisation size (excl. Transition) (Constant Price)	Micro Neglig	< 20 Neglig	Small Neglig	Medium Neglig	Large Neglig
Are any of these organisations exempt?	No	No	No	No	No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on...?	Impact	Page ref within IA
Statutory equality duties¹ Statutory Equality Duties Impact Test guidance	No	
Economic impacts		
Competition Competition Assessment Impact Test guidance	No	
Small firms Small Firms Impact Test guidance	No	
Environmental impacts		
Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance	Yes	14
Wider environmental issues Wider Environmental Issues Impact Test guidance	Yes	14
Social impacts		
Health and well-being Health and Well-being Impact Test guidance	Yes	14
Human rights Human Rights Impact Test guidance	No	
Justice system Justice Impact Test guidance	No	
Rural proofing Rural Proofing Impact Test guidance	Yes	14
Sustainable development Sustainable Development Impact Test guidance	Yes	14

¹ Public bodies including Whitehall departments are required to consider the impact of their policies and measures on race, disability and gender. It is intended to extend this consideration requirement under the Equality Act 2010 to cover age, sexual orientation, religion or belief and gender reassignment from April 2011 (to Great Britain only). The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Summary: Analysis and Evidence

Policy Option 3

Description:

Making orders that apply the relevant provisions with modifications

Price Base Year 2011	PV Base Year 2011	Time Period Years 5	Net Benefit (Present Value (PV)) (£m)		
			Low: 0	High: 1.5	Best Estimate: 0.73

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low			0.02	0.09
High			0.14	0.64
Best Estimate			0.08	0.36

Description and scale of key monetised costs by 'main affected groups'

As for Option 2, costs relate to an illustrative scenario of 100 hectares of habitat being created per year, for a period of five years (to next review). Operating authority costs relate to land and engineering costs of habitat creation, as well as compensation to landowners where relevant. Landowners' uncompensated costs assumed to be reduced further by Option 3, to an indicative £25/ha. Total cost per hectare range £185-£1,375 per ha per annum.

Other key non-monetised costs by 'main affected groups'

As for Option 2, powers aim to be cost-neutral to landowners and others affected. However, Option 3 limits the circumstances under which compulsory purchase may be used and increases the notice that must be given to agricultural landowners before powers of entry are exercised. These modifications are intended to further reduce the risk of any residual impacts on landowners. Although a nominal residual impact of £25/ha is included in the monetised estimates above, impacts will vary by site.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low			0.02	0.09
High			0.45	2.10
Best Estimate			0.23	1.09

Description and scale of key monetised benefits by 'main affected groups'

Benefits will depend on the ecosystem services provided due to works under these provisions. While these will be established case by case, for habitats, gross benefits might be in the range £200-4,500 per ha per year based on studies. It is assumed that only schemes with positive net benefits would be pursued by operating authorities having regard to their value for money obligations. Figures are based on a notional 100 hectares being delivered each year for five years.

Other key non-monetised benefits by 'main affected groups'

Other ecosystem service benefits provided or conserved as a result of the use of section 38 and 39 powers will depend on how the powers are deployed and have not been assessed. However, given the habitats that are most likely to be affected are associated with the coastal fringe and wetlands, the benefits could be significant because value of the ecosystem services provided by these habitats tends to be relatively high in studies carried out to date.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5%

The result that overall benefits outweigh the costs reflects a) the premise that the Orders are intended to make the use of provisions close to cost neutral to business, b) that works taken forward under sections 38 and 39 will either be necessary to meet minimum legal requirements or have a positive net present value. It is also assumed that the residual uncompensated impacts on landowners and others are halved (from £50 to £25 per hectare) under this Option compared with Option 2.

Direct impact on business (Equivalent Annual) £m):			In scope of OIOO?	Measure qualifies as
Costs: 0.003	Benefits: 0	Net: 0.003	Yes	IN

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?			England and Wales		
From what date will the policy be implemented?			01/07/2011		
Which organisation(s) will enforce the policy?			n/a		
What is the annual change in enforcement cost (£m)?			n/a		
Does enforcement comply with Hampton principles?			Yes		
Does implementation go beyond minimum EU requirements?			Yes		
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)			Traded: 0	Non-traded: -(small)	
Does the proposal have an impact on competition?			No		
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?			Costs: 0	Benefits: 0	
Distribution of annual cost (%) by organisation size (excl. Transition) (Constant Price)	Micro Neglig	< 20 Neglig	Small Neglig	Medium Neglig	Large Neglig
Are any of these organisations exempt?	No	No	No	No	No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

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Does your policy option/proposal have an impact on...?	Impact	Page ref within IA
Statutory equality duties¹ Statutory Equality Duties Impact Test guidance	No	
Economic impacts		
Competition Competition Assessment Impact Test guidance	No	
Small firms Small Firms Impact Test guidance	No	
Environmental impacts		
Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance	Yes	14
Wider environmental issues Wider Environmental Issues Impact Test guidance	Yes	14
Social impacts		
Health and well-being Health and Well-being Impact Test guidance	Yes	14
Human rights Human Rights Impact Test guidance	No	
Justice system Justice Impact Test guidance	No	
Rural proofing Rural Proofing Impact Test guidance	Yes	14
Sustainable development Sustainable Development Impact Test guidance	Yes	14

¹ Public bodies including Whitehall departments are required to consider the impact of their policies and measures on race, disability and gender. It is intended to extend this consideration requirement under the Equality Act 2010 to cover age, sexual orientation, religion or belief and gender reassignment from April 2011 (to Great Britain only). The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Evidence Base (for summary sheets) – Notes

Use this space to set out the relevant references, evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Please fill in **References** section.

References

Include the links to relevant legislation and publications, such as public impact assessments of earlier stages (e.g. Consultation, Final, Enactment) and those of the matching IN or OUTs measures.

No.	Legislation or publication
1	http://www.legislation.gov.uk/ukpga/2010/29/pdfs/ukpga_20100029_en.pdf
2	http://www.legislation.gov.uk/ukpga/1991/57/contents
3	Eftc 2007 (updated 2010), Flood and Coastal Erosion Risk Management: Economic Valuation of Environmental Effects. The Environment Agency
4	Defra 2007, An introductory guide to valuing ecosystem services
5	Defra 2006, National Assessment of the Cost of meeting environment requirements. R&D Technical Report FD2017/TR
6	Tinch, R and Ledoux, L; 2006 Economics of Manager Realignment in the UK. Final Report to Coastal Futures Project,

+ Add another row

Evidence Base

Ensure that the information in this section provides clear evidence of the information provided in the summary pages of this form (recommended maximum of 30 pages). Complete the **Annual profile of monetised costs and benefits** (transition and recurring) below over the life of the preferred policy (use the spreadsheet attached if the period is longer than 10 years).

The spreadsheet also contains an emission changes table that you will need to fill in if your measure has an impact on greenhouse gas emissions.

Annual profile of monetised costs and benefits* - (£m) constant prices

	Y ₀	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₆	Y ₇	Y ₈	Y ₉
Transition costs										
Annual recurring cost	see	excel	sheet							
Total annual costs										
Transition benefits										
Annual recurring benefits										
Total annual benefits										

* For non-monetised benefits please see summary pages and main evidence base section



Microsoft Office
Excel Worksheet

Evidence Base (for summary sheets)

Problem under consideration (and previous impact assessment of sections 38 and 39 of the Flood and Water Management Bill)

Important features of the natural and cultural environment depend on the processes of flooding and erosion in order to maintain their interest, value and capacity to provide ecosystem services. However, the definition of flood and coastal erosion risk management in part 1 of the Flood and Water Management Bill, does not permit authorities to manage or cause flooding or erosion specifically for purposes of conserving or improving the natural environment or cultural heritage. It was therefore necessary to include sections 38 and 39 (incidental flooding or coastal erosion) in the Act to ensure that flood and erosion risk management authorities (the Environment Agency, local authorities and internal drainage boards) have powers to undertake this kind of work thus allowing ecosystem service benefits and environmental objectives to be realised in an integrated approach to the management of flooding, water levels and erosion.

The need for these specific powers at this time was created by the new definition of flood and coastal erosion risk management in Part 1 of the FWMA Act. This definition confines risk management to work done to reduce the harmful effects of flooding or erosion. However, much of the work that is needed to conserve, preserve or improve the environment requires action to be taken to manage flooding and erosion to gain the beneficial effects of those processes. For example, allowing wetlands to flood, raising water levels or maintaining erosion processes all of which are needed in some places to maintain the physical and biological diversity of the landscape. Sections 38 and 39 were therefore included in the Act to empower authorities to carry out such work where appropriate, subject to safeguards.

The Act is drafted in such a way that Sections 38 and 39 cannot be commenced until orders are made which apply the compulsory purchase, powers of entry and compensation provisions in the Water Resources Act 1991 to these sections of the FWM Act.

Due to the connection with the core definition of flood and coastal erosion risk management, an Impact Assessment was made of the change in definition together with sections 38 and 39 as part of the Bill work. That IA effectively made the case for a package of inseparable changes. However, the part of the assessment which specifically addressed the impacts of and case for the Section 38 and 39 powers stated:

“3.4 Integration of coastal erosion into flood management

Coastal erosion risk and coastal flood risk are closely interrelated. There is therefore a strong rationale for considering the two issues together when decisions are taken about the management of flooding and erosion. For example, sediment released by erosion processes can be essential to the maintenance of natural flood defences such as beaches, mud flats and salt marshes. Slowing or preventing erosion in one area can increase flood or erosion risk in another area. At the same time, cliffs sometimes form a natural barrier against coastal flooding, sheltering hinterlands from high tides that might otherwise cause them to flood. In such cases, allowing cliff erosion to continue unchallenged can add to the exposure of inland areas to coastal floods. While, the legislation and institutional responsibilities are currently different, Government policy promotes an integrated approach to the management of flood and coastal erosion risk. Option 2 brings legislation into line with policy by establishing a common legal and management framework. The integration of coastal erosion and flood risk management is expected to reduce the administrative cost by allowing joint schemes to be taken forward by a single lead authority and the development of common knowledge and skills bases.

3.5 Sustainability duties and Environmental Works Powers

Flood and coastal erosion risk management has a profound impact on biological and geological diversity and hence also on amenity value. It follows that there are key dependencies between the management of flood and erosion risk and the health and sustainability of certain features of the natural environment – especially wetlands and coastal landscapes. Indeed, many nationally important wildlife sites are currently in

an unfavourable condition due to inappropriate drainage or flood management and some of the Government's key targets and objectives for the natural environment can only be met through flood and erosion management. There is therefore a strong case for managing flooding and erosion in an integrated way to gain desirable social and environmental outcomes at the same time as reducing the risk to people and property. The change in definition, together with the powers to manage flooding and erosion for the beneficial effects upon the environment and a comprehensive duty to contribute to the achievement of sustainable development, are required to achieve this.

Broader sustainability duties and environmental works powers would encourage an integrated approach to management of flood risk and coastal erosion risk ensuring social, economic and environmental policy goals are considered together. The benefits of a clear sustainable development duty on all operating authorities would mean that other environmental, biodiversity and social benefits need to be considered and are likely to be realized including reducing climate change impact.

It is expected that the provision of environmental works powers, will enable flood and erosion risk management authorities to realise such benefits. These benefits are more likely to be gained cost-effectively by giving powers to the same authorities who have the powers to manage flooding and erosion to reduce the harmful effects because they have the necessary technical expertise and administrative competencies. They are thus best placed to make sure that no conflicts arise between different objectives and that any synergies are realized.

It is not possible to give a certain value for the environmental costs and benefits of the schemes that would be brought forward as a result of these changes because each case will be considered and treated on its merits in competition with alternative investment options. However, indicative examples of the costs and benefits of creating habitats that could result from these changes illustrate a realistic range of values that may be possible. Using a valuation methodology promoted by Defra's ecosystem services approach, based on the value of the goods and services provided by habitats towards human welfare¹, values for the types of coastal and wetland habitats that might typically be created through flood and erosion management range from £200-4500 per hectare per year². These gross benefit values (i.e. before considering costs) include carbon storage, pollution control functions, contribution to fisheries and recreational benefits. Typical whole life cash costs of creating such wetland habitats range from £16,000-135,000 per hectare over 100 years, or £160-1,350 as an annual average³. (This includes the costs of any land purchase or compensation necessary, but not residual uncompensated impacts on landowners which, as discussed later are assumed to add a further £25-50 per hectare). Overall, the range of net benefit (gross benefit, less creation and landowner impact cost) per hectare of habitat created therefore lies in the range £1 - 3,125 per annum (projects with zero or worse net benefits would not be advanced under operating authority investment appraisal rules).

This cost and benefit evidence has been used to generate illustrative aggregate benefit and cost ranges for the Section 38 and 39 orders, based on a notional 100 hectares of habitat being created each year (this is the estimated ongoing loss in protected European sites) for the 5 year period before review (see Post Implementation Review). It should be noted however that uptake of the powers provided by the orders is very difficult to forecast and will depend on operating authorities' approaches to a range of individual situations. Note also that benefits may include or be additional to any functional benefit that the habitat provides in terms of reducing flood risk, such as reducing flood peaks in rivers or dissipating wave energy at the coast, which may be the primary objective of some projects. One recent investigation into the economics of coastal habitat recreation concluded that *"There are sites at which habitat creation and realignment of defences is likely to be the most economic option for flood defence, even without taking habitat values into account. Equally, there are some cases in which [projects] can be justified purely in terms of the habitat created, without the need to invoke flood protection benefits."*⁴

¹ Defra 2007, An introductory guide to valuing ecosystem services.

² Efttec 2007 (updated 2010), Flood and Coastal Erosion Risk Management: Economic Valuation of Environmental Effects. The Environment Agency.

³ Defra 2006, National Assessment of the Cost of meeting environment requirements. R&D Technical Report FD2017/TR

⁴ Tinch, R and Ledoux, L; 2006 Economics of Manager Realignment in the UK. Final Report to Coastal Futures Project,

Rationale for intervention

The rationale for intervention was covered in the IA for the new definition of Flood and Erosion Risk Management and the strategic overview at the Bill stage. In summary: There are key dependencies between the state of the natural environment and the management of flooding and erosion. Many features at the coast, in river corridors and wetlands depend on the processes of flooding or erosion to maintain their value and function. Without the intervention of flood and erosion risk management authorities in the management of these processes, habitats and historical features would be lost or degraded; legal requirements associated with the Habitats, Birds and Water Framework Directives would not be met and key government objectives for the natural and historic environment, which require flood and coastal erosion management work, would not be achieved. However, while the powers in section 38 and 39 will help flood and erosion risk management authorities meet the requirements of these EU Directives, the principal case for them is to secure desirable environmental outcomes where appropriate and an integrated approach to the management of flooding and coastal erosion which both reduces the risks to people and property and improves the environment.

Government intervention is needed to give flood management authorities (the Environment Agency, local authorities and internal drainage boards) powers to manage flooding and coastal erosion for these purposes. The alternatives would be a situation where no authority was empowered to carry out works to manage flooding or erosion for the benefit of the environment, or to give the powers to other organizations. However, no other organizations have the relevant competencies and this would lead to a disintegrated approach to the management of flood and erosion processes.

Policy objective

Sections 38 and 39 of the FWMA cannot be commenced unless these Orders are made. Sections 38 and 39 are needed to allow authorities to carry out work to meet the requirements of obligations under various existing European Directives, including the Water Framework Directive, Habitats Directive and the Birds Directive, as well as to meet domestic objectives to conserve or improve the environment and people's enjoyment of it as described above.

Descriptions of options considered

Options considered:

1. Do nothing: i.e. not making the orders (the baseline option and counterfactual)
2. Making orders that apply the relevant provisions without modifications
3. Making orders that apply the relevant provisions with modifications

Option 1: Do nothing: i.e. not making the orders and not commencing section 38 and 39 of the FWMA. This is the counterfactual.

Not making orders would mean that sections 38 and 39 could not be commenced because the Act states that the Minister "must" apply the aforementioned provisions of the Water Resources Act to sections 38 and 39 either with or without modifications.

If s38 and 39 are not commenced authorities will lack the powers that they need to manage local flooding and erosion for the purpose of improving the environment and people's enjoyment of the environment or cultural heritage. This would, in turn, lead to a degradation of nationally important wildlife, heritage and landscape features, severely limit authorities' capacity to manage flooding and erosion for the benefit of the environment. Such work include projects that that internal drainage boards, local authorities and the Environment Agency undertake to facilitate water level management in support of landowners' agreements under Environmental

Stewardship and similar schemes. It would also threaten UK's capacity to meet obligations under the Habitats Directive, Birds Directive and Water Framework Directive.

Option 2: Make orders that apply the relevant provisions without modifications

Making orders applying the relevant provisions of the Water Resources Act without modifications is the simplest option and has the benefit of consistency. The flood and erosion management work that authorities would be empowered to do by sections 38 and 39 for the benefit of the environment and people's enjoyment of the environment is identical to that which would need to be done to reduce the risks of flooding and erosion. That is to say: erecting, maintain and managing defence structures; maintaining or restoring natural processes; managing water levels; and carrying out other such works in rivers or on the coast. It would therefore be simplest if authorities had identical compulsory purchase, powers of entry and compensation provisions when carrying out those work regardless of the purpose for which they are being done. However, landowners' representatives (NFU & CLA) expressed concerns during the passage of the bill through parliament about this and argued that there should be additional protections when works were being carried out for environmental purposes to protect the interests of landowners. The actually net impact on those affected is considered to be small. However, option 3 is intended to mitigate and minimize any potential residual impacts as far as practicable.

Option 3: Make orders that apply the relevant provisions with modifications

Making orders applying the relevant provisions of the Water Resources Act with modifications adds a little complexity to the legal framework but has the potential to answer concerns of landowners. The modifications proposed are a) restricting the Environment Agency's powers for compulsory purchase to works that are needed to meet legal requirements and b) adding a requirement to give at least 7 days notice before powers of entry can be exercised on farmed land. The 7 day notice period is in the existing provisions (for work carried out under the Water Resources Act) only relates to residential property.

This is the preferred approach and lawyers have drafted orders to meet this. We know the legislation is workable insofar as the provisions that we are seeking to apply to sections 38 and 39 have been used by the Environment Agency (and its predecessors) when carrying similar works under the Water Resources Act since 1991. The modifications that are proposed are modest and will not need any new procedures. They are intended to minimize any residual impacts on any agricultural land owners as far as practicable.

The reason for restricting the Environment Agency's powers of compulsory purchase to works that are needed to meet legal requirements is to restrict the reach of a national body, in this respect, to things that really need to be done in the national interest. This would not prevent the Environment Agency supporting local authority projects where appropriate because section 39(8) allows local authorities to arrange for works to be carried out on its behalf by the Environment Agency. However, any such works would need to have the backing of the local authority with its local democratic mandate and would be done on behalf of that authority. In any case, compulsory purchase is a last resort for any authority and is likely to be used rarely and only where absolutely necessary.

The second modification is to require all authorities to give 7 days notice before exercising powers in connection with Section 38 or 39 to enter farmland (except in an emergency). This brings farmland into line with residential property and is considered a reasonable period to allow farmers to secure stock and take any bio-security measures necessary without unduly disrupting their business.

Risk and assumptions

The Government has committed to being the "*greenest government ever*" and one of Defra's top three priorities is "*to enhance the environment and biodiversity to improve quality of life*". There would thus be a significant reputational risk in not commencing the environmental provisions of the Flood and Water Management Act given the dependency between the state of environment and the management of flooding and erosion.

The assumption that the overall benefits will outweigh the costs is based on:

- a) the premise that the Orders are intended to bring into force powers of compensation which make the use of Sections 38 and 39 as close to cost neutral to business as possible, and
- b) that works taken forward under sections 38 and 39 will either be the minimum necessary to meet legal requirements or have a positive net present value.

It is important to emphasise that the costs and benefits use above are only indicative. Each project would need to be considered on its merits and the nature of the actual costs and benefits of works that could be taken forward under Section 38 and 39 powers will vary enormously. Furthermore, the figures above are drawn from meta-analysis valuation studies from various parts of the world. While the value of habitat created in England is likely to be in these ranges, in some cases it could be higher or lower.

Similarly assumptions made on the impacts of the specific impacts tests are generic and may vary from project to project, which will all need to be assessed on a case by case basis. However, controls exist in planning, permitting and funding regimes to ensure that projects which do not have a positive cost benefit ratio or are otherwise unacceptable in economic, environmental or planning terms are not funded or permitted.

Policy savings calculations and impacts on landowners/business. (Based on Environment Agency advice and cases.)

Powers of Entry

When the Environment Agency used its powers of entry it would serve a statutory 7 day notice on the landowner notifying him or her that it would be entering the land to carry out works. The notice would entitle the landowner to compensation for any loss or damage to his or her property as a result of the works.

Typically the landowner might be involved in pre-start stakeholder engagement/public liaison meetings (depending on complexity of the scheme). They might also get involved in one-to-one meetings, maybe on site, with the Agency's project manager or consultant. In most cases an EA project manager would serve the notice. If there is no damage caused then the impact on the landowner would be minimal or cost neutral. The EA has advised that the time cost for the landowner would be extremely small.

The Environment Agency suggested its Lincshire flood alleviation scheme as an example of the time that might typically be involved for a landowner. In that case, the Agency was carrying out large beach nourishment project. It served notices on the District Council and other landowners. Notice was served on the Council but the Agency estimated it was only involved in a few hours time checking their records and liaising with colleagues. They did not need to go on site and it is therefore unlikely that any compensation will be claimed.

However, if a project was more complex or contentious compensation may be payable. This may arise if, for example, damage was done whilst the EA was on the land. In that case the Agency's Estates Team would carry out the negotiations with the landowner. The landowner may instruct an agent to act on his behalf and that cost could be covered by the compensation claim. Such a case may have more of a cost to the landowner in terms of time and form filling. However, in addition to compensation for any damage done the landowner would be reimbursed agent's costs (if he employed one) or for his own time. Thus the impacts on the landowner should be close to cost-neutral. Time costs paid to a farmer would tend to be in the hundreds of pounds whereas costs paid to a land agent are more likely to be in the thousands.

Compensation:

Compensation is paid where damage is done in the course of carrying out a permitted activity. If the Agency pays compensation to a landowner, it would normally cover any loss of their land, disturbance and

any other losses in addition to reasonable land agent's fees & legal costs. The intention is to put the landowner in the same position as he would have been before the intervention. In complex or contentious cases negotiations can be lengthy but generally landowners use an agent to act on their behalf. In which case, those costs would be covered by the compensation claim and the impact on the landowner would be close to cost neutral.

The Agency gave an example where it had paid compensation in respect of a flood alleviation scheme for St Ives and Hemingfords. In that situation, it built a flood bank across agricultural land, affecting a number of landowners. On one plot, the EA's agents negotiated with the agents acting for the landowner. The heads of terms agreed with the landowner were:

- a) Compensation for the land taken for the bank, based on an amount per hectare.
- b) Compensation for injurious affection for loss in value of the land between the new & old embankments.
- c) A payment for disturbance to the landowner during the works.
- d) Reimbursement of the landowner's reasonable surveyors fees & legal costs.

Several meetings were held and negotiations went on for a number of years, incurring more time for the landowner than usually expected. However, costs were compensated.

Compulsory Purchase

There are very few examples of where authorities have used compulsory purchase powers. Generally speaking, operating authorities prefer to negotiate terms with sellers and CP is only used in exceptional cases as a last resort. However, if it were used, the impacts on the landowner should be cost-neutral, covering time spent by the landowner, as well as the value of the land.

Residual uncompensated costs to business

As stated above, EA advice is that compensated time costs paid to a landowner in a typical case would tend to be in the hundreds of pounds (whereas costs paid to a land agent are more likely to be in the thousands). Assuming conservatively – in the absence of more direct evidence - that uncompensated costs are similar (NB this is not the intention of the measures), then for a typical affected site (say 10 hectares), they might therefore average in the broad region of, say £500. This estimate would be consistent with Option 2 and is equivalent to £50 per hectare. Firm evidence on the impact of the modifications under Option 3 is also not available, but it is assumed that halving the potentially conservative Option 2 estimates is not unreasonable. As such, uncompensated costs under Option 3 are taken to be around £25 per hectare for the purposes of this Impact Assessment. Whilst these figures are uncertain, the overall assessment is that uncompensated costs should be very modest (these estimates of £25-50 per hectare compare with total habitat creation costs of £185-£1,400 per hectare).

Specific Impact Tests

The impacts are summarised in the following section:

Equality Duties: The orders are not considered likely to have any direct effect on equality duties or issues.

Greenhouse gas assessment: the creation of wetlands and coastal habitats that will be facilitated by the powers created by sections 38 and 39 could have a benefit in terms of sequestration and storage of GHGs. However, the evidence base for impacts of land management change is poor and any benefits are likely to be marginal. This was explored in a recent research project FD2622 - Understanding the Impact of FCERM on the Causes of Climate Change (in press).

Wider environmental impacts: Flood and coastal erosion risk management has a profound impact on the environment. Furthermore, there are key dependencies between the management of flood and coastal erosion risk and the health and sustainability of certain features of the natural environment – especially wetlands and coastal landscapes. The conservation and enhancement of the natural environment and the preservation of the historic

environment is the key objective of sections 38 and 39 of the Act. Without the powers therein, wetlands, rivers, and coastal habitats would be degraded, damaged and lost as a result of ongoing programmes of risk management without being able to offset these impacts. This would make it very difficult to meet requirements under the EU Habitats, Birds and Water Framework Directives to avoid the deterioration of protected sites and secure favourable conservation status of some important habitats and species in the UK. It would also seriously impair capacity to meet the government's policy objective "to enhance the environment and biodiversity to improve quality of life".

Health and well being: Access to good quality environments has been shown to have beneficial effect on health and recovery from illness. The provisions of sections 38 and 39 which allows work to be carried out in the interest of "people's enjoyment of the environment or of cultural heritage" has the potential to make a small contribution to overall health and well-being.

Rural proofing: The compulsory purchase, powers of entry and compensatory provisions are most likely to be used in rural situations to off-set any negative impacts of works carried out under section 38 and 39 powers on rural businesses, particularly farmers. Similarly the benefits of the works are most likely, but not solely, expected to be enjoyed by and most easily accessible to rural communities that live closest to the sites concerned. However, these are very high level generalizations and individual projects proposed under these powers will be assessed on a case-by-case basis to ensure they are rural proofed.

Sustainable development: By ensuring that authorities are empowered to undertake works to manage flooding and coastal erosion to gain environmental benefits, the Order will ensure that the environmental pillar of sustainable development is supported. It will enable authorities to contribute to a programme of works that does not leave a legacy of environmental degradation to future generations and help the current generation to live within environmental limits. By contributing to the conservation of the natural and historic environment, which is largely a common public good, it will make a modest contribution to a strong, healthy and just society.

Preferred policy option

Options 3 is preferred because it meets the policy objectives and goes some way to resolving concerns raised by landowners' representatives (NFU & CLA), during the passage of the bill through parliament, that there should be additional provisions when works are being carried out to environmental purposes to protect the interest of landowners and managers.

Consultation and stakeholder involvement

Stakeholders, including representatives of those groups most likely to be affected by these provisions, were involved in the development of options. A draft version of this impact assessment was also circulated to key stakeholder including authorities and landowners groups to test the conclusions and assumptions prior to its finalization.

Annexes

Annex 1 should be used to set out the Post Implementation Review Plan as detailed below. Further annexes may be added where the Specific Impact Tests yield information relevant to an overall understanding of policy options.

Annex 1: Post Implementation Review (PIR) Plan

A PIR should be undertaken, usually three to five years after implementation of the policy, but exceptionally a longer period may be more appropriate. If the policy is subject to a sunset clause, the review should be carried out sufficiently early that any renewal or amendment to legislation can be enacted before the expiry date. A PIR should examine the extent to which the implemented regulations have achieved their objectives, assess their costs and benefits and identify whether they are having any unintended consequences. Please set out the PIR Plan as detailed below. If there is no plan to do a PIR please provide reasons below.

<p>Basis of the review: [The basis of the review could be statutory (forming part of the legislation), i.e. a sunset clause or a duty to review, or there could be a political commitment to review (PIR)];</p> <p>We propose a review of these provisions 5 years after the commencement date of Sections 38 and 39. This is considered a reasonable minimum periods to make an assessment of its effectiveness given that we expect some of the provisions will be used to be used infrequently.</p>
<p>Review objective: [Is it intended as a proportionate check that regulation is operating as expected to tackle the problem of concern?; or as a wider exploration of the policy approach taken?; or as a link from policy objective to outcome?]</p> <p>The review objectives will be to ensure that the provisions allow policy to be delivered, and that the assessment of impacts and distributions of costs are as expected.</p>
<p>Review approach and rationale: [e.g. describe here the review approach (in-depth evaluation, scope review of monitoring data, scan of stakeholder views, etc.) and the rationale that made choosing such an approach]</p> <p>A proportionate evaluations of case studies together with information on impacts from authorities and a scan of stakeholder views.</p>
<p>Baseline: [The current (baseline) position against which the change introduced by the legislation can be measured]</p> <p>The delivery of environmental outcomes through flood and erosion management by local authorities, the Environment Agency and IDBs over the past 5 years.</p>
<p>Success criteria: [Criteria showing achievement of the policy objectives as set out in the final impact assessment; criteria for modifying or replacing the policy if it does not achieve its objectives]</p> <p>Environmental outcomes, impacts on authorities, stakeholders and costs.</p>
<p>Monitoring information arrangements: [Provide further details of the planned/existing arrangements in place that will allow a systematic collection systematic collection of monitoring information for future policy review]</p> <p>This is still being consider in the light of proportionality. However, authorities, (EA, IDBs, LAs) may be asked to provide a brief annual summary of the use of these powers and their effectiveness as part of any annual reporting established for flood and erosion risk management or environmental performance.</p>
<p>Reasons for not planning a review: [If there is no plan to do a PIR please provide reasons here]</p>