

Scottish Government

**Flooding Bill Financial
Implications Assessment**

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BUILDING A BETTER WORLD

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EXECUTIVE SUMMARY

This report was compiled by MWH on behalf of Scottish Government. It critiques Scottish Government's assessment of the financial implications of the Flooding Bill. It provides an independent review of the potential financial implications of the Bill on various authorities.

The First Minister announced on 5th September 2007 that the Scottish Government intended to introduce a Flooding Bill to modernise flood risk management in Scotland. The Bill would enable the EC Directive 2007/60/EC on 'The Assessment and Management of Flood Risks' to be transposed into primary legislation, as well as the opportunity to provide a framework to ensure a fully sustainable approach to flood risk management in Scotland.

It is proposed that the new Bill will result in new powers, responsibilities and duties being placed on the following authorities:

- Scottish Government;
- Scottish Environment Protection Agency (SEPA);
- Scottish Water;
- Local Authorities;
- Other Responsible Authorities.

These additional new powers and responsibilities may result in extra cost being placed on the above authorities. The costs arise mainly as a result of the requirements to produce Preliminary Flood Risk Assessments by 2011, flood hazard and flood risk maps by 2013 and flood risk management plans by 2015. These plans will be reviewed every 6 years.

The report is structured, to describe the existing and new responsibilities for each responsible authority identified, along with any predicted costs and savings. Telephone interviews were conducted with the organisations most likely to be affected by these proposed changes to generate an understanding of the assumptions and reasoning behind their projected costs. A high level appraisal was also carried out to determine whether the assumptions behind these costs are robust, appropriate and are aligned with their new responsibilities outlined in the Flooding Bill. Coupled with this is a critique of some of the assumptions Scottish Government has made in relation to costs/savings for authorities affected.

The study identified that the projected costs for organisations varied according to their new roles, responsibilities and duties.

SEPA is identified in the Flooding Bill as being the 'competent authority'. This would result in SEPA having overall responsibility for the implementation of the EC Floods Directive, for the purposes of flood risk management planning. SEPA's total estimated cost for the implementation of the Flooding Bill is approximately £25.4 million. £10.82 million would be required to address the requirements of the EC Floods Directive until 2011 and then approximately £14.6 million for the period between 2011-2014.

SEPA provided detailed financial information for inclusion in an initial assessment. Additional information was also gained through a telephone interview, providing confidence in the robustness of this information, the reasoning behind the assumptions and the details behind projected costs. The assumptions used to generate the predicted costs were considered accurate, as they reflected SEPA's new responsibilities as the competent authority. The predicted costs were also

considered well founded, with detailed reasoning being provided for the employment of particular staff

One concern identified was relating to the transfer of responsibility of enforcement under the Reservoirs Act 1975. This was due to SEPA and the Scottish Government providing varying associated costs. The costs provided by the Scottish Government were based on two possible scenarios;

1. SEPA being responsible for all reservoirs mapping (and planning) under the obligations of the Floods Directive;
2. SEPA providing an enforcement regime under new regulations, requiring operators to produce reservoir inundation plans

DEFRA have information available on the costs associated with transferring enforcement responsibilities, from Local Authorities to the Environment Agency, as a result of the Water Act in 2000.

SEPA suggested that savings would result from data being provided by their existing hydrometric network and existing information contained in their River & Coastal Maps (Scotland), which is valued at £45.5 million. This financial saving was substantiated using known costs based upon the costs of developing existing SEPA flood risk data. Savings were also identified by the skill sets already contained within SEPA; no financial cost was attributed to these savings.

Under the provisions of the Flooding Bill, Scottish Water has been identified as a 'responsible authority' with specific duties to provide information to SEPA for the production of Local Flood Risk Management Plans and attendance at advisory group meetings.

In the cost estimates provided by Scottish Water, it was estimated that the financial implications of the Flooding Bill on their organisation would be approximately £5.8 million. This figure was generated using existing plans and models for urban and rural catchments, the preparation of five AFRMP plans and attendance at advisory group meetings in order to meet the requirements of the Water Framework Directive (WFD). These were considered reasonable estimates as they were based upon real costs and resources incurred by Scottish Water previously.

Neither Scottish Water nor Scottish Government suggested that savings would be made as a result of the Flooding Bill.

Local authorities have also been identified as responsible authorities under the Flooding Bill. Specific duties will involve providing information and assistance to SEPA to inform the Area Flood Risk Management Plans, responsibility for flood risk management planning and a duty to produce and implement Local Flood Risk Management Plans.

The Convention of Scottish Local Authorities (COSLA) suggested the potential financial implications to local authorities for the implementation of the Flooding Bill would be approximately £7.7 million. This figure would be highly dependant upon the results of the Preliminary Flood Risk Assessment, as these results will determine how many Local Flood Risk Management Plans are required. Detailed financial information was provided by Renfrewshire Council, but was misaligned with sections of the Bill provisions, namely relating to statutory processes.

Savings were identified by the Scottish Government for Local Authorities in terms of streamlining statutory processes and the transfer of enforcement responsibilities for the Reservoirs Act. These savings were not identified by the local authorities, but were considered important.

National Parks were identified as a potential responsible authority. Their duties under the provisions of the Bill would be to provide information and assistance to SEPA in the preparation of Area FRMPs. National Park Authorities would only have a role in plans in the boundary of the National Park.

Loch Lomond and Trossachs National Park suggested they would require a full time project officer, as a direct result of the Flooding Bill. No telephone interview was conducted to assess the reasoning behind this cost allocation, but it was assumed to be reasonable to ensure full participation in the Area and Local Flood Risk Management Planning process.

The Scottish Government will have various new duties, under the provisions of the Flooding Bill. No exact costs were supplied, but they did provide an indication of their resource requirements for these new duties. The cost associated with developing secondary legislation was based upon their experience with the Water Environment and Water Services Act (Scotland) Act, which was considered a reasonable assumption.

The major factor of uncertainty identified in cost allocation for the Scottish Government was the approval of flood defence schemes, although the overall statutory process is simplified in the Bill. The Scottish Government suggested that it was difficult to estimate this cost, due to uncertainties in the numbers of contested schemes, the number of contested schemes then withdrawn and also uncontested schemes.

Overall most organisations submitted cost and savings information which was directly related to their new duties and responsibilities under the Flooding Bill. Some costs and assumptions lacked detail and one of the major factors was that much depended upon the production of the Preliminary Flood Risk Assessment, which would identify areas of significant flood risk. This made it difficult for authorities to accurately predict costs beyond the EC Floods Directive deadline of December 2011.

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1. INTRODUCTION

1.1. Background

Implementation of the Flooding Bill in Scotland may result in increased costs and savings for the authorities affected. Scottish Government produced a Financial Memorandum of these predicted costs/savings and this report forms an independent assessment of this.

1.2. Authorities Affected

Implementation of the Flooding Bill will involve new duties being placed on the following authorities;

- Scottish Government;
- SEPA;
- Scottish Water;
- Local Authorities;
- Other Responsible Authorities.

1.3. Purpose and structure of report

The organisations listed in Section 1.2 submitted financial information to the Scottish Government regarding anticipated costs and savings associated with implementing the Flooding Bill. The Scottish Government have made an assessment of these costs and have analysed any assumptions made by the authorities.

This report describes each organisation's new responsibilities, existing tasks, and amendments to existing tasks and assesses the financial implications of the Bill. Analysis was also carried out on any of the assumptions made by the organisations themselves and the Scottish Government.

Appraisal of the assumptions was conducted by MWH utilising a red, amber, green approach as to whether the assumption/reasoning was agreed with. This appraisal process followed telephone interviews which were conducted with relevant organisations. A comparison was also carried out with the provisions of the Flooding Bill to ensure that resources are aligned with the correct responsibilities.

2. CRITIQUE OF FINANCIAL IMPLICATIONS OF THE FLOODING BILL

2.1. SEPA

SEPA is identified in the Flooding Bill as being the 'competent authority'. Table 2.1 summarises the responsibilities of SEPA under existing legislation and their proposed additional responsibilities as the competent authority.

Table 2.1 Summary of SEPA's existing and new responsibilities

Existing Responsibilities under Current Legislation	Additional Responsibilities Under the Flooding Bill	Responsibilities Removed
Assisting Local Authorities by providing flood risk information, such as developing flood risk maps,	Undertake Flood Risk and Hazard Mapping by 22 December 2013	N/A
Regulating the impact on the water environment of flood defences (and other engineering works on rivers) using the Controlled Activities Regulations (CAR), under the Water Environment and Water Services (Scotland) Act 2003.	SEPA would fulfil the role of strategic flood planning authority. This would include a duty to produce Area Flood Risk Management Plans that set out the strategic framework for flood risk management in Scotland.	N/A
Providing flood risk and flood mitigation information through Floodline	Undertake Preliminary Flood Risk Assessments to provide a national perspective of flood risk by 22nd December 2011	N?A
Dissemination of flood warnings	The responsible authority for the implementation of the safety requirements of the Reservoirs Act 1975.	N/A
	Promote Sustainable Flood Management	N/A

As described in Table 2.1, the role of competent authority involves SEPA undertaking numerous additional responsibilities. Section 2.1.1, provides a summary of SEPA's anticipated costs and describes the potential financial savings. The cost savings are explained and the assumptions listed.

2.1.1. SEPA's Anticipated Costs

Table 2.2 SEPA's anticipated total costs up to the year 2015

Cost of implementing the Floods Directive	Prior to 2011 £million	2011-2014 £million	Total Costs
Staff costs			
Scientific/technical staff costs,	5.98	7.24	13.22
Flood management planning	1.8	1.93	3.73
Support staff costs	0.75	1.1	1.85
Non recurring staff costs	0.357	N/A	0.357
Corporate overheads	Inc. in staff costs (£9410 per FTE per annum)		
Capital costs	1.865	3.925	5.79
Revenue costs	0.05	0.41	0.46
Approximate total costs	10.8	14.6	25.4

As described in Table 2.2, SEPA's total cost for implementing the Floods Directive would be approximately 25.4 million. Table 2.3 provides an explanation of how these costs have been calculated, lists any assumptions and provides an appraisal of assumptions.

2.1.2. Critique of SEPA's Assumptions

Table 2.3 provides a summary of the assumptions behind the anticipated costs, describing the reasoning behind these assumptions. Information was gathered by carrying out a telephone interview with SEPA and a critique of Scottish Government's assessment of financial implications of the Flooding Bill.

Table 2.3 Assumptions and reasoning behind anticipated costs

Task	Assumptions	Reasoning	Critique of Assumption
PFRA & Mapping, CFMP Preparation	A total of 25 new staff required to undertake GIS work, modelling (catchments, coastal, urban) at a cost of approximately £8.4 million	The new skill sets identified are a departure from Sepia's current role. Until the PFRA has been carried out, it is difficult to identify the exact costs. The Flooding Bill is the most significant change in business for SEPA since the implementation of the WFD. SEPA is aiming to improve competencies that currently do not exist within the organisation.	AGREE

Task	Assumptions	Reasoning	Critique of Assumption
<p>Purchase of DTM Data</p>	<p>High Resolution digital terrain data will be required for flood mapping of urban areas at significant flood risk (assuming a coverage of 10% of the river network), at an approximate cost of £1.8million.</p> <p>Medium resolution digital terrain data will be required for flood mapping of non-urban areas, considered at significant flood risk (assuming 10% coverage of the river network, at a cost of £0.8million) , Hydraulic modelling will also be required (based on 1% coverage of the Scottish river network). The data described above is required for flood risk and hazard mapping purposes, to meet the requirements of the EU Directive.</p>	<p>Cost estimation based on existing knowledge of flood risk. It should be noted that these requirements may be amended after the PFRA has been carried out and areas of significant flood risk have been identified.</p>	<p>AGREE</p>
<p>Flood Warning</p>	<p>A total; of 3 new staff required to undertake this role.</p>	<p>This staff resource is not directly related to Flood Warning Service, any additional resources for the Flood warning Service would be identified in business case for individual schemes. The new resource requirement relates to development of strategic and national flood warning services.</p>	<p>AGREE</p>

Task	Assumptions	Reasoning	Critique of Assumption
CFMP Preparation	A total of 34 new staff is required, at a cost of approximately £9.4 million. This includes engineers, 12 hydrologists and skilled catchment flood planners. The development of the Catchment Flood Management Plans cost an estimated £75k for 20 catchments.	<p>1. The Environment Agency provided SEPA with guidance on the costs associated with the preparation of Catchment Flood Management Plans for the Tweed and Till Catchments.</p> <p>2. Flood Risk Engineers are required, as it is important that SEPA's new role as the competent authority will require them to have the relevant technical knowledge.</p>	<p>1. PARTIALLY AGREE</p> <p>2. AGREE</p>
Improve Hydrometric Network	20 new rain gauge sites are required and 20 new gauging stations, at an estimated cost of £ 0.9million. Also new hydrologists.	One of the key outcomes from FIAC and National Technical Groups on flooding was the importance of good data, particularly high flow data and the requirement for hydrology data. There may be a need to shift this focus in the future. Previously, SEPA provided data to Local Authorities for use in their scheme preparation. This data contained caveats, but was the best available information at that time. If SEPA were to become the 'competent' authority, then this data will need to be more robust.	AGREE
Support Staff Costs	Additional administrative resources are required including Information Technology staff and project managers.	Costs associated with support staff would be shared across all duties within SEPA.	AGREE

Task	Assumptions	Reasoning	Critique of Assumption
Postgraduate University Places	Funding for 20 postgraduate course places would be required, at a cost of £0.1 million per annum.	Ensure future flood risk skill set available.	AGREE
Reservoirs	Recruitment of safety managers and engineers would be required, at a cost of approximately £2.1 million per annum.	Assumes SEPA will be enforcing authority for Reservoirs Act 1975.	PARTIALLY AGREE

Key For Independent Appraisal of Assumptions

Key

Agree with reasoning

Partially agree with reasoning

Disagree with reasoning



SEPA have identified that in order to undertake PFRA and Flood Risk and Hazard Mapping, additional staff would be required. This reasoning behind these anticipated costs was that SEPA is currently lacking this skill set within the existing organisational structure. The costs highlighted in this report are dependant upon the completion of the Preliminary Flood Risk Assessment and subsequent identification of areas of significant flood risk. This reasoning and the need for additional resources are aligned with SEPA’s responsibilities in the Flooding Bill. It is therefore considered that these assumptions can be substantiated.

Purchase of DTM data is necessary for SEPA to undertake the Preliminary Flood Risk Assessment, Flood Risk and Hazard Mapping and the compilation of Area Flood Risk Management Plans. Given these projected costs are based upon existing knowledge and there are resource implications, this assumption is also considered substantiated.

The costs associated with preparation of Catchment Flood Management Plans were provided by the Environment Agency. Based upon this data, we partially agree with the assumptions made. The cost data provided by the Environment Agency was for rural catchments and was not considered representative of catchments in Scotland. However, it could also be argued that is difficult to attribute costs to flood risk management planning until the Preliminary Flood Risk Assessment has been completed. The required technical skill sets identified by SEPA for the preparation of Flood Risk Management Plans and the reasoning as to why engineering expertise is required, are considered robust. Given SEPA’s role as the competent authority, it is important that they have a detailed knowledge of all aspects of flood risk.

Additional staff are required to undertake the strategic role of Flood Warning. This assumption substantiated by the proposals to extend SEPA’s flood warning role.

Improvement of the hydrometric network will increase the accuracy of hydrology data, enabling more informed flood risk planning decisions to be made. It is important in their role as competent authority that SEPA's decisions are not only transparent but also based upon scientific evidence. The resource implications are therefore considered substantiated.

A cost has been attributed to the requirement for additional support staff. This reasoning is considered substantiated, as additional administrative and Information Technology staff will be required to enable SEPA to undertake new duties.

Postgraduate university places have been identified as an additional resource requirement by SEPA. Their reasoning is to ensure an appropriate skill set of flood risk staff. It is considered that these resources can be substantiated, as it is important that SEPA take a lead role in flood risk management.

The cost associated with undertaking the role of an enforcement authority, under the Reservoirs Act 1975, has been estimated as being £2.11 million from the period 2008 to 2014. This was assuming that SEPA will be the single enforcing authority. This cost can be compared to the figures provided by the Department of Environment, Flood and Rural Affairs (DEFRA) in England and Wales for the transfer of enforcement responsibilities from Local Authorities to the Environment Agency in 2000 under the draft Water Bill. A figure of £255K was quoted as an initial set up cost, and at an annual cost of approximately £285k. This cost appears to be less than the cost projected by SEPA. However, it is unclear the period over which this cost was and therefore comparison is difficult.


For the purposes of the Preliminary Flood Risk Assessment, reservoirs would also have to be mapped. Scottish Water estimated that financial implications would be approximately £25K per reservoir, to produce a Dam Inundation Plan. This investigation was carried out by Scottish Water as a result of new requirements in England and Wales, for reservoir owners to undertake this responsibility. It is difficult to compare this information with the projected costs supplied by SEPA for reservoirs, as it is not obvious that this mapping is considered in their projected costs. It is also unclear whether it has been included in the Preliminary Flood risk Assessment and resource requirements associated with mapping.


The Scottish Government has produced 2 scenarios for predicting the costs to SEPA for reservoirs enforcement, these are described in Table 2.4.

Table 2.4 Scottish Government’s costs and assumptions relating to reservoirs

	Scenario	Cost	Assumptions	Reasoning	Critique of Assumption
1.	SEPA responsible for all reservoirs mapping (and planning) under Flood Directive obligations	Approx £12 to £17 million	There are currently 678 large raised reservoirs. Each inundation plan would cost approx £25k, assuming 2/3 are Category A or B (i.e. highest risk)	Flooding Bill currently sets out these responsibilities	PARTIALLY AGREE
2.	SEPA provide an enforcement regime through new regulations that requires some operators to produce reservoir inundation plans	Approx £400 to 700k	SEPA would only produce simple inundation plans, to assess where they are actually required. Approx £500 per plan for 678 reservoirs.	No reasoning mentioned behind decision	PARTIALLY AGREE

Key

Agree with reasoning 

Partially agree with reasoning 

Disagree with reasoning 

The projected costs described in Table 2.4 are dependant on a variety of factors, the most important being that is the financial implications are dependant on how many reservoirs are considered to be high risk. Some information is based upon Scottish Water estimated costs, which were derived for the preparation of Dam Inundation plans. These costs were prepared some time ago in for reservoirs in England and Wales and it is questionable whether they are relevant, therefore we partially agree with these cost assumptions.

Scenario 2 is based on the production of secondary legislation, to allow SEPA new powers to make it a requirement for operators to produce plans. This would allow some of the costs incurred to be shared between various reservoir undertakers.

SEPA have suggested that although there are substantial costs associated with the implementation of the Floods Directive, there are savings and efficiencies to be made. This is mainly due to the availability of following existing data and skill sets within the organisation:

- River and Coastal Map (Scotland), which was delivered in 2006, at a cost of £1.5m. This will form the basis of a Preliminary Flood Risk Assessment;
- SEPA’s existing hydrometric network, has an estimated value of £44million;

SEPA have skill sets in the following:

- SEPA's existing flood risk assessment skills set;
- SEPA's existing flood monitoring skills set;
- SEPA's existing flood mapping skills set;
- Awareness raising resources
- River Basin Management Planning

The information described above infers that SEPA will save an estimated £46.5 million by utilising existing hydrometric data and the Indicative River and Coastal map. It was much more difficult to analyse the costs associated with the existing expertise within SEPA, as this has not been quantified. However, these are considered robust assumptions.

2.1.3. SEPA's anticipated savings identified by the Scottish Government

The Scottish Government has identified that streamlining the existing statutory process may result in small efficiency savings for SEPA. This would be as a result of reduced consultations on flood prevention schemes. This is likely to be a small saving, as flood prevention consultations only represent a small proportion of SEPA's overall workload. No financial information supports this statement, but it is considered a robust assumption, given that in 2007 SEPA received less than 10 flood prevention orders out of 2000 flood risk consultations.

2.2. Scottish Water

Under the provisions of the Flooding Bill Scottish Water are identified as a 'responsible authority'. Table 2.5 summarises Scottish Water's existing duties under current legislation and new duties and responsibilities under the proposals contained in the Flooding Bill.

Table 2.5 Summary of Scottish Water's existing and new responsibilities

Existing Responsibilities under Current Legislation	Additional Responsibilities Under the Flooding Bill	Responsibilities Removed
Maintain water supply and drainage infrastructure	Duty to collaborate in the production of risk assessments. This would include sharing and reviewing data and information.	N/A
Manage the discharge of surface water that enters their drainage systems	Responsible for implementing measures associated with urban drainage infrastructure. All measures would be coordinated through Local Flood Management plans.	N/A
Work in partnership with the local authority and emergency services to alleviate any flooding of sewers and the impact of this flooding	Implementing measures associated with urban drainage infrastructure. All measures would be coordinated through Local Flood Management plans.	N/A
Repair flood damaged mains and deal with any flooding caused by bursts		N/A

Existing Responsibilities under Current Legislation	Additional Responsibilities Under the Flooding Bill	Responsibilities Removed
Manage the storage and release of flood water supply to reservoirs		N/A

2.2.1. Scottish Water costs and critique of cost assumptions

Table 2.6 describes the assumptions behind the projected costs for Scottish Water. A telephone interview was conducted to generate an understanding of their reasoning behind any assumptions. Information was also gathered through a critique of the Scottish Government's assessment of financial implications of the Flooding Bill and an examination of the financial information submitted by Scottish Water.




Table 2.6 Scottish Water costs, assumptions and reasoning

Task	Cost (up to 2015)	Assumptions	Reasoning	Critique of Assumption
<p>Area Flood Risk Management Plans- Urban Areas</p>	<p>An estimated £1.9million will be required for hydraulic modelling. A further £190K per annum will be required for model maintenance to ensure they are fit for purpose.</p>	<p>Based upon the production of the Glasgow Strategic Drainage Plan. However, these figures are based upon investigations which were not all flood related. This information was based upon on the Dalmarnock Catchment, which has a population of approx 77,203. This utilised older modelling techniques to assess open watercourses and the drainage networked. Technology has move on since, although the level of detail required is similar.</p>	<p>1. The Glasgow Strategic Drainage Plan is a similar working model to the requirements of the new Area Flood Risk Management Plan. It was used to generate an understanding of how many plans will be required and how they would be structured. Scottish Water will need to improve modelling standards in order to fulfil requirements of the Flooding Bill.</p> <p>2. The process for developing the Bill is moving rapidly, therefore the requirements are changing all of the time and models are constantly being updated.</p> <p>3. Costs are based on Area Flood Risk Management Plans, as Scottish Water was unable to separate what was required for the production of the Preliminary Flood Risk Assessment and the Area Flood Risk Management Plans.</p> <p>4. There is a need to improve modelling capabilities in order to ensure drainage area studies are of suitable standard.</p>	<p>AGREE</p> <p>AGREE</p> <p>AGREE</p>

Task	Cost (up to 2015)	Assumptions	Reasoning	Critique of Assumption
Area Flood Risk Management Plans –Rural Areas	Would require approximately £317k, plus an additional £31.7k per annum for annual model maintenance.	Information based upon Elgin, Rothes and Forres catchments (with a total population of 20,125). It should be noted that not all of this cost was directly related to investigating flooding.	Elgin, Rothes and Forres provided a working model of how a rural Area Flood Risk Management Plan would be structured and organised. The structure of urban and rural models will be determined, depending on the detail required which varies greatly between catchments.	AGREE
Area Flood Risk Management Plans	Projected cost of just over £2 million over four years, plus an additional £202K per annum for model maintenance.	Production of 5 plans for a population of 200,000, assuming 50/50 rural/urban split	In order to generate an understanding of the number of plans required the Scottish Government need to decide which catchments are most at risk. Scottish Water with assistance from the Scottish Government identified that there are five problem catchments in Scotland and this was the basis of the projected costs.	PARTIALLY AGREE

Task	Cost (up to 2015)	Assumptions	Reasoning	Critique of Assumption
Attendance at Area Flood Risk Management Plan meetings and the production of Local Flood Risk Management Plans	Estimated cost of £1.5million	OPEX for WFD team and attending advisory group meetings and any sub groups (assuming up to 12 groups). On the basis that these meetings are held on a quarterly basis, this equates to 48 per year for each technical flooding expert. Time needs to be allowed for preparing, debriefing and the attendance of a technical specialist.	Scottish Water has been involved with the implementation of the Water framework Directive and has therefore based requirements of new Bill on their existing strategy.	AGREE

Key For Independent Appraisal of Assumptions

- Key
- Agree with reasoning 
 - Partially agree with reasoning 
 - Disagree with reasoning 

Overall the projected costs highlighted in Table 2.6 reflect the additional responsibilities Scottish Water will have under the provisions of the Flooding Bill. It is therefore considered that there are no misalignments of responsibilities and costs.

Scottish Water has based their costs associated with the production of Area Flood Risk Management Plans on existing plans for both rural and urban catchments. Although the content of these plans will differ from the outputs of an Area Flood Risk Management Plan, this is considered a robust method for anticipating future cost. These costs are based upon the assumption that the level of modelling and detail contained in the existing plans will be required for compilation of Area Flood Risk Management Plans. It is also likely that the modelling will have to go through numerous revisions before its outputs are considered acceptable. Scottish Water have allowed for this in their projected costs and these are considered reasonable assumptions, given that providing data for compilation of Area Flood Risk Management Plans is a new role.

The projected costs associated with the production of Area Flood Risk Management Plans are based upon 5 plans and a 50/50 rural/urban split. As highlighted by the Scottish Government, it will be difficult to quantify how many plans are actually required until the Preliminary Flood Risk Assessment process is complete. These assumptions are fundamental to the flood risk management process and are considered robust.

Cost attributed to attendance at advisory group meetings has been based on existing figures associated with the Water Framework Directive. This assumption is considered robust, as it is likely that the structure of these advisory groups will mirror those set up for the River Basin Management Plan process.

The Scottish Government have identified that design work and capital expenditure required may be required as a result of Local Flood Risk Management Plans. This cost has not been quantified by either Scottish Water or the Scottish Government. However, Local Flood Risk Management Plans will require consideration of flood management measures; it is therefore considered a reasonable assumption.

2.2.2. Savings for Scottish Water

Neither Scottish Water nor the Scottish Government identified any savings for Scottish Water, as a result of the Flooding Bill.

2.3. Local Authorities

Local Authorities would be responsible authorities under the provisions of the Flooding Bill. Specific duties would involve: providing information and assistance to SEPA to inform Area Flood Risk Management Plans, responsible authority for flood risk management planning and a duty to produce and implement Local Flood Risk Management Plans.

Table 2.7 provides a summary of their existing and new responsibilities.

Table 2.7 Summary of Local Authorities existing and new responsibilities

Existing Responsibilities under Current Legislation	Additional Responsibilities Under the Flooding Bill	Responsibilities Removed
Planning control and preventing development in inappropriate flood risk areas	Duty to collaborate in the production of risk assessments. This would include sharing and reviewing data and information.	Removal of the responsibility of enforcement under the Reservoirs Act
Bringing forward and constructing flood prevention schemes	Duty to collaborate in the production of local flood risk management plans. This would include contributing through advisory groups.	
Assessment and maintenance of watercourses	<u>Local Authorities would fulfil the role of local catchment planning authority.</u> This would include a duty to prepare catchment focused Local Flood Risk Management Plans that coordinate delivery of measures to address flood risk.	
Co-ordination of authorities when there is a flooding event	Primary responsibility for flood protection and would be responsible for coordinating and implementing flood management measures.	
Enforcement of the Reservoirs Act 1975		

Existing Responsibilities under Current Legislation	Additional Responsibilities Under the Flooding Bill	Responsibilities Removed
Publish a biennial report of instances of flooding and measures taken to mitigate flooding of non-agricultural land		

2.3.1. Local Authority costs and assumptions

Projected costs associated with the implementation of the Flooding Bill were submitted to Scottish Government by COSLA, on behalf of Local Authorities. A telephone interview was conducted to generate an understanding of their reasoning and the assumptions made to provide these estimates. No detailed information; therefore the critique of assumptions behind the costs is centred on those contained in the Scottish Government’s assessment of the costs.

Table 2.8 Overall costs submitted by COSLA

Task	Cost (up to 2015)
Informing National Plans	Between £20- £500,000 per annum, no cost attributed to post 2015.
Local Advisory Groups	Between £16k to £100k per annum
Total Cost of New Duties	£7.68 million per annum for all local authorities

Table 2.8 summarises the costs provided. It was difficult to appraise the costs, as there is no detailed reasoning as to how the costs had been calculated. The projected costs reflect the various duties that will be placed on Local Authorities and can therefore be substantiated. Scottish Government’s assumptions reflect the present uncertainty surrounding how many advisory groups will be required. It is assumed that Local Authorities will incur increased costs as a result of their requirement to extend their existing duties under the 1961 Act for maintaining watercourses. Without any detailed information being attributed to this assumption, its appropriateness is unclear.

Table 2.9 Moray Council costs and assumptions

Task	Approx Cost (up to 2015)	Assumptions	Reasoning
Local Advisory groups	£100k	Time required for 2 or 3 people to attend meetings, approximately 3 times a month (assuming one third of their time is spent attending meetings)	Requirement for an additional 2 full time staff to meet the requirements of the Flooding Bill. This would include one Senior Engineer and one Technician)
FRM Plans	£20k	-	
Stakeholder Participation	£20k	-	
Total	£700k		

Table 2.9 describes approximate costs provided by Moray Council. Moray Council have based their costs on the appointment of one Senior Engineer and one Technician. These staff will work solely on meeting the requirements of the Bill. This is considered a reasonable request. However, without a more detailed breakdown it is difficult to make an informed appraisal of this resource assumption.

Table 2.10 Renfrewshire Council costs and savings (pre and post Flooding Bill)

Task	Itemised Tasks	Pre Bill Introduction, cost per /annum	Post Bill Introduction cost per /annum	Critique
Assumption of spend on structural projects	To date then based upon properties 10M over 10 years @2 C/B	£1.2M	£2M	PARTIALLY AGREE
Assumption of spend levering for non structural projects (£ 1 to 2 million per annum)	Use of planning development control implement flood hazard reduction + mapping + plans + assistance to SEPA + assistance to other departments. & SG	£50,000	£100,000	AGREE
Cleansing	Watercourses		No change	DISAGREE
	Drains		No change	DISAGREE
Modelling of flows	No duty at present	Nil	£25,000	AGREE
Outline design/ preliminary design	Ad hoc flooded areas rectification based on flooded areas		No change	-
Approval from Flood risk management groups		Nil	£8,000	AGREE
Design Scheme(s)	Include for CAR delays and reduction in tenderer alternatives, leading to a reduction in competitive bids	£50,000	£100,000	AGREE
GIS			£20,000	AGREE
Integrated working	In house working across all departments	incl	£10,000	AGREE
Seems to be something missing here	External with Scottish Water and technical subgroups etc	Something missing here, too?	£13,000	AGREE

Task	Itemised Tasks	Pre Bill Introduction, cost per /annum	Post Bill Introduction cost per /annum	Critique
Statutory Process Costs per annum – including appeals/objections	Displays/Advertising/Order Drawings and texts/Engineering reports/risk management reports/cost benefit reports/precognition statements/Public discussion/Counsel/Witness/Inquiry	£3,000	£30,000	Something missing here?
Planning Process that deal with flood prevention schemes Costs per annum*	FPO copied with any aesthetic drawings added/Planning fee/Building control fee	£3,000	£6,000	PARTIALLY AGREE
Cost of Enforcing Reservoir Act (per annum)	Ensuring reports complete held and on time.		No Change (need to be aware for CC and Sustainable Flood Management approaches	PARTIALLY AGREE
Cost Incurred in Water Framework Directive per annum (River Basin Management Planning)	Provide information for SEPA database. Provide correction for SEPA database		No Change	AGREE
General accommodation / admin costs, hire charges, displays, publications			£30,000	AGREE

Key

Agree with cost/saving

Partially agree with cost/saving

Disagree with cost/saving



Table 2.10 describes projected costs provided by Renfrewshire Council. No telephone interview was conducted, so the following commentary and high level analysis was based upon comparing the Bill provisions with the proposed roles of Local Authorities.

The basis of the structural spend figures is assumed to reflect expenditure on formal engineered flood defence schemes. It is likely that this will either remain the same or there will be a reduction in costs, as traditional flood defence

schemes do not fit with the overall strategy of promoting sustainable flood management. The spend on non-structural flood protection measures (e.g. sustainable flood management techniques) is assumed to double, this cost substantiated given the main aims of the flooding bill.

No change was anticipated in the cost of maintaining watercourses. This was not considered correct, as the Bill proposes to extend existing duties under the 1961 Act for the maintenance of watercourses, there is therefore a possibility that this cost will increase.

Increased costs were anticipated by Renfrewshire Council in the following areas:

- Approval from flood risk management groups;
- Integrated working within Local Authorities;
- External liaison with both competent and responsible authorities.

These costs are substantiated, as the preparation of Local Flood Risk Management Plans will involve more integrated working within Local Authorities and improved liaison with external parties, to ensure the objectives of the Area Flood Risk Management Plans are incorporated in the Local Flood Risk Management Plans.

No change in costs was anticipated by Renfrewshire Council for planning approval of flood risk schemes. It is assumed that this is due to the Bill proposing two options: 1) Ministerial Confirmation and Deemed Planning Permission and 2) Local Authority led process.

No reduction in cost was identified for the transfer of enforcement under the Reservoirs Act. This responsibility is likely being transferred to SEPA, which could result in a resource saving for some Local Authorities.

2.3.2. Savings to Local Authorities

Neither COSLA nor the Local Authorities identified suggested any savings may arise from the Flooding Bill. Scottish Government has identified areas where savings will be made; these are described in Table 2.11.

Table 2.11 Savings to Local Authorities

Task/Function	Saving
Simplification of the planning process	Saving not quantified
Repealing of compensation to persons who have sustained damage as a consequence of Local Authority operations	Saving not quantified
Transfer of enforcement of Reservoirs Act to the competent authority	Less than £150k per annum collectively for Local Authorities

The costs relating to the simplified statutory process which will remove the requirement for flood risk management schemes to go through a separate planning process have not been quantified. However this assumption is considered appropriate, as this is a provision of the Flooding Bill.

No specific costs have been attributed to changes in statutory processes, which will remove the requirement for flood risk management schemes to go through a

separate planning process. This is considered appropriate, as this is a provision of the Flooding Bill.

The Scottish Government considers the enforcement of the Reservoirs Act to be a part time task for Local Authorities, therefore only a small saving is anticipated. It is believed that it will result in some efficiency, as staff currently involved in enforcement duties will be able to undertake different duties and functions. This assumption is substantiated as it reflects the Bill provisions. However, no investigation has been carried out into how the figure provided has been calculated. It is unclear whether it has been calculated using on the number of enforcement cases currently carried out, or whether it was based upon the cost of a full time member of staff responsible for enforcement.

2.4. National Parks Authorities

National Parks have been identified as a potential responsible authority. Their duties would involve providing information and assistance to SEPA in the preparation of Area Flood Risk Management Plans and in the production of Local Flood Risk Management Plans. National Park authorities would have a role in plans within the boundaries of the National Parks. Table 2.12 provides a summary of their existing and new responsibilities.

Table 2.12 Summary of National Parks existing and new responsibilities

Existing Responsibilities under Current Legislation	Additional Responsibilities Under the Flooding Bill	Responsibilities Removed
Protecting their land from flooding, including overland flooding caused by the build up of water on land following heavy rainfall or by a high water table causing ponding of standing water in low lying areas (taken as viewing National Parks as landowners/ land managers)	Duty to collaborate in the production of risk assessments. This would include sharing and reviewing data and information.	
	Duty to collaborate in the production of Local Flood Risk Management Plans. This would include attending advisory groups.	
	Exercise their duties to support implementation of measures to reduce flood risk.	

2.4.1. Costs and Critique of Assumptions Made

Loch Lomond and Trossachs National Park provided details of projected costs associated with the Flooding Bill, which are summarised in Table 2.13.

Table 2.13 Costs to Loch Lomond and Trossachs National Park

Task	Approx Cost (up to 2015)
1 Full time project officer for a 12 month period	35k
Flood risk assessment for new development sites in Local Plan- (require a consultant to undertake this work)	30k
Policies & Supplementary Planning Guidance (SPD) for National Park Local Plan	3k
Local Flood Risk Management Plan, including specific flood management measures	8k
Public consultation on Local Flood Risk Management Plan	1k
Contribution to studies for Local & Area plans	10k

The costs described in Table 2.13 were provided to the Scottish Government. No telephone interviews were carried out to examine the assumptions and reasons behind these projected costs.

Most of these costs are aligned with the duties identified in the Bill and are therefore considered reasonable. However, the financial implications relating to the production of planning policies and supplementary planning guidance is considered to be an indirect cost of the Flooding Bill. This is considered to be a development planning cost following the production of the Local Flood Risk Management Plan.

2.5. Scottish Government administration

The Flooding Bill proposal will result in the Scottish Government gaining various new duties. Table 2.14 provides a summary of these new and new duties.

Table 2.14 Summary of Scottish Government’s existing and new responsibilities

Existing Responsibilities under Current Legislation	Additional Responsibilities Under the Flooding Bill	Responsibilities Removed
Confirm, with or without modification or refuse flood defence schemes under 1961 Act. Approve / reject schemes under planning process.	Consider and approve Preliminary Flood Risk Assessment	N/A
	Consider and approve Area Flood Risk Management Plans	N/A
	Assign lead authorities for Local Flood Risk Management Plans	N/A
	Provide information to SEPA	N/A

Existing Responsibilities under Current Legislation	Additional Responsibilities Under the Flooding Bill	Responsibilities Removed
	Produce annual report to Parliament	N/A
	Attend advisory group and sub-group meetings	N/A
	Power to make further regulations and guidance as required	N/A

2.5.1. Costs for Scottish Government administration and critique of assumptions

Table 2.15 provides a summary of the reasoning behind the Scottish Government's requirements.

Table 2.15 Summary of the Scottish Government's administration requirements

Task	Cost (up to 2015)	Assumptions	Reasoning	Critique of Assumption
Creation of Secondary Legislation	No financial details provided	Require a total of 3 full time staff This will be dependant on regulations required. The cost of these will be assessed through Regulatory Impact Assessments	Based on cost of developing secondary legislation for the Water Environment & Water Services (Scotland) Act 2003. Also cost of preparing Strategic Environmental Assessment required for each new regulation.	AGREE
Meeting EC Flood Directive Deadlines	No financial details provided	2 additional full time staff will be required for 6 month period between 2011 and 2015	Staff needed for completion and approval of Preliminary Flood Risk Assessment in late 2011, and staff need in 2015 for approval of FRM Plans	AGREE
Periodic Review of Flood Risk Management Plans	No financial details provided	3 full time staff required	Once secondary legislation is in place, the costs will be limited to staff having to review Flood Risk Management Plans and maps every 6 years	AGREE
Objections to Flood Protection Schemes	No financial details provided	Class A objections to schemes. Scottish Government refer scheme to Directorate for Planning & Environmental Appeals (DPEA)	May be more cases referred to DPEA	PARTIALLY AGREE

Key

- Agree with reasoning
- Partially agree with reasoning
- Disagree with reasoning



As described in Table 2.15, the assumptions of Scottish Government’s financial memorandum and their anticipated costs are generally substantiated. No financial figure has been attributed to these projected costs. However, it is considered that the assumption and reasoning of their requirements is aligned with their new responsibilities under the Flooding Bill.

The assumption relating to objections to Flood Protection Schemes are only partially substantiated, as these costs are dependant on many factors. They are dependant on the amount of contested schemes, contested schemes which are subsequently withdrawn and non contested schemes. There is also uncertainty over the potential implications of a scheme being contested, then withdrawn. Given this uncertainty and variance of factors, it was difficult to determine if a significant cost will arise due to objections to flood risk schemes.

3. CONCLUSION

This assessment involved a high level appraisal of the anticipated costs and savings arising from the new powers, responsibilities and duties which will be placed on the following organisations as a result of the Flooding Bill.

- Scottish Government
- Scottish Environmental Protection Agency (SEPA)
- Scottish Water
- Local Authorities
- Other Responsible Authorities such as Forestry Commission

Additional roles, responsibilities that will be placed on the organisations may result in extra cost being incurred. This is mainly due to a requirement to produce preliminary flood risk assessments by 2011, flood hazard and flood risk maps by 2013 and flood risk management plans by 2015. These costs will be ongoing as all plans must be reviewed every 6 years. Proposed and estimated cost breakdowns and assumptions have been summarised in this report using information gained from the above mentioned organisations through telephone interviews and submitted cost breakdowns from individual organisations. Information provided from the necessary authorities has given us confidence in our conclusions.

The report has shown that projected costs will vary depending on the organisation and their new role. The Scottish Government will have various new duties under the provisions of the flooding bill. No exact costs were supplied but they gave an indication of their resource requirements for the new duties. The cost associated with developing secondary legislation was based upon experience with the Water Environment and Water Services Act (Scotland) Act, which is considered as a reasonable assumption. Uncertainty in cost allocation identified by The Scottish Government involves approval of flood defence schemes although the overall statutory process is simplified within the Flood Bill. They have suggested that it is too difficult to estimate cost due to uncertainties in the number of contested schemes withdrawn and also uncontested schemes.

SEPA, identified as 'competent authority' within the Flooding Bill and therefore having full control over implementation of the EC Floods Directive in terms of flood risk has estimated total cost for flood risk management planning as £25.4 million. This can be broken up into £10.82 million to address requirements up until 2011 and approximately £14.6 million for between 2011 and 2014.

Costs and assumptions made by SEPA are considered accurate as they reflect SEPA's new responsibilities under the new Flood Bill but have flagged up one concern regarding transfer of responsibility of enforcement under the Reservoirs Act 1975. Scottish Government Figures were based on the following scenarios:

1. SEPA responsible for all reservoir mapping (and planning) under obligations of the Flood Directive
2. SEPA providing enforcement regime under new regulations requiring production of reservoir inundation maps.

SEPA believe savings can be made by utilising data from their existing hydrometric network and existing information contained in the River and Coastal Maps (Scotland), valued at £45.5 million. Assumptions are based on present costs of developing existing flood risk data.

Several organisations including predominantly Scottish Water and Local Authorities have been named as responsible authorities under the new Flooding Bill. Duties vary between organisations given this title. For example, Scottish Water duties include providing information to SEPA for the production of local flood risk management plans and attendance at advisory group meetings. Alternatively, local authority duties involve informing SEPA on area flood risk management plans, responsibility for flood risk management planning and a duty to produce and implement local flood risk management plans.

Scottish Water estimate costs associated with the Flooding Bill to be an estimated £5.8 million. This figure was estimated using existing models for urban and rural catchments, preparation of 5 AFRMP's and attendance at advisory group meetings in order to meet requirements of the Water Framework Directive. Neither Scottish Government nor Scottish Water suggested savings can be made as a result of the Flooding Bill. These estimates are considered reasonable as they are based upon real costs and resources previously incurred by Scottish Water.

The Convention of Scottish Local Authorities (COSLA) has suggested that financial implications for local authorities could be approximately £7.7 million. This cost is highly dependant upon results of the Preliminary Flood Risk Assessment as this will determine how many local flood risk management plans are required. Specific details were provided by Renfrewshire Council but they were misaligned with sections of the bill provisions specifically regarding statutory processes.

The local authorities did not identify any savings but the Scottish government commented that streamlining statutory processes and the transfer of enforcement responsibilities for the Reservoirs Act will reduce costs. This is considered as an important potential saving and although not outlined by COSLA is included within the assessment.

There is a large group of other organisations identified as potential responsible authorities all with similar powers, duties and responsibilities and one of these is the National Parks Authority. Duties under new provisions of the flooding bill include assistance to SEPA for preparation of AFRMP's but this only applies to areas within the boundaries of the National Parks. Loch Lomond and Trossachs National Park submitted a financial breakdown and suggested they would need a full time project officer to deal with the flooding bill. No telephone interview was conducted with the organisation but their input was included as it was assumed to be reasonable to ensure full participation in the flooding process.

In conclusion, most organisations integral to the Flooding Bill submitted a breakdown of costs and savings directly related to tasks identified within the bill. Some financial summaries lacked detail and it is apparent that they are highly reliant on the production of the Preliminary Flood Risk Assessment, which would identify areas of major flood risk. The lack of this assessment has made it difficult for authorities to accurately predict costs beyond the EC Floods Directive deadline of December 2011.