



# **The Local Government Case for a National Policy Statement for Flood Risk**

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## **EXECUTIVE SUMMARY**

Flood and stormwater<sup>1</sup> risk management is a matter of national interest. Floods are the most frequently occurring hazards within New Zealand and can impose social and economic costs on communities and the country as a whole.

There are national benefits to be gained from an effective and proactive programme of flood risk management, including the potential reduction of post-event Government, local authority, community and private expenditure on remedial action. In effect communities externalise many of the costs of development on flood plains through insurance, EQC or central government relief. However, Government leadership and assistance is required for this outcome to be achieved consistently across New Zealand.

Communities find it difficult to counter proposals for new development that promise economic benefits even where public safety and assets are at risk. This can result in substantive costs to local authorities and their communities, as local authorities across New Zealand defend planning initiatives to reduce flood risk.

It is not an efficient or effective outcome if communities externalise the cost of development on flood plain. The Environment Court argues that existing property rights should apply to land “unless they are shown to be less efficient and effective”. This leads us to the conclusion that New Zealand as a whole would benefit from more direction to avoid increasing the flood risk. This would be best applied locally, supported by national policy direction to ensure local authorities are not unduly burdened with the cost of litigation in the courts.

Localised evidence is vital when undertaking risk assessment and establishing hazard areas. There are inherent uncertainties in climate modelling that will challenge existing practice in flood plain planning and the definition of hazard areas. NIWA research suggests however, that even in regions where climate change scenarios indicate drier overall conditions, flood risk may increase.

Central Government can provide national direction under the RMA to manage flood risk. Local authorities under the RMA and the LGA set regional and local policy direction through their long term council community plans, regional policy statements, regional plans and district plans. That policy direction is then implemented through asset

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<sup>1</sup> Hereafter flood refers to flood and stormwater

and flood management plans and the provision of river management, stormwater and drainage infrastructure.

To this end the objective of a national policy statement should be to support flood management outcomes such as:

- individuals and communities understand and take responsibility for reducing the consequences of flooding including explicit management of residual risk
- the risk of damages and losses is reduced as low as practically possible with avoidance of flood risk as a priority
- recognition that natural process within the catchment will determine long-term flood management options.

The Environment Court applies a precautionary approach for coastal hazard, but this cannot be applied to flood risk in the absence of a national policy. It is clear that it is much easier for local authorities to provide for controls in hazardous areas and introduce non-complying or prohibited activity status for development or redevelopment in such areas, if the hierarchical planning documents i.e. a national policy instrument, require the authorities to make such provision in their plans. Together with local input, national leadership and policy will provide a firm basis with which to manage flood risk in New Zealand.

## THE ECONOMIC IMPACT OF FLOOD EVENTS

1. A 2004 NZIER<sup>2</sup> report identified the need for a better understanding and quantification of potential impacts of flooding to help to communicate the severity of the flood hazard problem as well as what could be done by individuals, communities and organisations to adapt. To this end they undertook work to scope the economic impacts of flood events and then extrapolated the results to indicate potential future costs. Unsurprisingly the report identified a number of limitations and future research requirements, a comprehensive database of flood events, their impacts and losses and the development of depth–damage curves for example. The question of potential future cost remained unanswered.
2. In discussion on the distribution of losses however, the NZIER report discussed the work of Erikson and concluded that of direct costs (insured and uninsured losses and response agency costs) from the 2002 Waikato weather bomb, only \$2.1 million, or around 16% of the total direct costs, were incurred locally.

*Of the \$13.7million total costs, \$8 million or 58% of the total was borne by insurers. Further, although response agency costs are listed as being \$3.1 million, it is not known how much of this was offset by central government disaster funding.*

3. EQC payouts for the weather bomb were slightly less than \$1 million, and are additional to the costs discussed previously.
4. Indirect costs are those such as business disruption losses and insurance excess payments. For the Waikato weather bomb these were estimated at \$1 million (less than 4%) as against the much larger Nelson and New Plymouth events in August 1970 and February 1971, where the indirect costs were estimated to be 22%. In more recent work undertaken by the Economic Solutions Ltd for Gisborne District Council<sup>3</sup>, total indirect benefits of proposed changes to the flood protection system equate to \$2.31 million per annum for a 1:100 year flood event.
5. Erikson concludes, that in effect communities externalise many of the costs of development on flood plains through insurance (all New Zealanders pay higher premiums), EQC, external resources

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<sup>2</sup> NZIER 2004 Economic Impacts on New Zealand of climate change-related extreme events; Focus on freshwater floods.

<sup>3</sup> Economic Solutions Ltd for Gisborne District Council February 2010, Proposed Waipaoa River (Gisborne) Flood Control Scheme Upgrade: A Community Economic Cost-Benefit Assessment of Upgrading Options.

brought in to restore flood effected communities, or central government relief.

6. The Thames-Coromandel District has a history of flood events and the Council has taken a proactive approach to reduce the threat to the people of the Thames Coast (see also paragraph 12). After the Waikato weather bomb, a business case for support across a range of measures was put to Government. This encompassed works on state highway roading structures which were exacerbating the flood risk (\$2.25 million), pest management on DoC land to decrease erosion and the risk of debris in flood events (\$1.01 million) and funding to assist with the purchase of properties in high risk areas (\$1.58 million). The remaining \$6.67 million was to be raised locally. The benefit of these measures was the reduction or elimination of future costs associated with severe flood events on the Thames Coast. These costs were estimated to be a total of \$56 million in direct and indirect costs since 1981.
7. Economic benefit is generally discussed in terms of impacts on the gross domestic product (GDP) however, i.e. the total market value of goods and services produced within a country in any given year. The Genuine Progress Indicator (GPI) is an alternative accounting system that internalises what are normally externalised costs and therefore provides a measurement of both the positive and negative of activities such as environmental degradation (an oil spill, an increase in air pollution or a depletion of habitat). GDP cost estimates do not account for the non-monetary value of human, social and natural capital, such as the costs of human grief, unemployment and lost ecosystem services.
8. The New Zealand Centre of Ecological Economics (NZCEE) and Market Economics Ltd (MEL) were contracted by Auckland Regional Council to develop a GPI for the Auckland region covering the period 1990 to 2006. This work built on a FORST funded project undertaken by NZCEE and MEL. While Greater Wellington Regional Council is also engaged in the development of GPI for the region, only Auckland has undertaken a full cost accounting for select indicators. This work does not explicitly include flood risk, but one of the ecosystem services that soils provide relates to hydrological services. Soil loss from urban expansion and erosion, calculated for the Auckland region over the period 1990-2006, has an estimated cost of \$1,113 million.

9. Glavovic (EQC Fellow in Natural Hazards Planning, Massey University), Saunders and Becker<sup>4</sup> (GNS Science) (2010) consider local communities downplay the importance of hazards relative to day-to-day concerns stating "it is difficult for local communities to counter new development proposals that promise economic benefits, but may jeopardise public safety and community sustainability, merely on the grounds of low probability hazard risk. At the very least, new development should be concentrated in less risky locations; and where necessary, and with careful consultation and planning, it may be necessary to relocate especially vulnerable communities." They also stress the value of a national policy statement for flooding. "Such guidance is urgently needed and, among other things, should provide local authorities and communities with direction about how to deal with the issue of repeat exposure to flood events and relocation."

**Communities externalise many of the costs of flood plain development. National policy direction would enable authorities to counter proposals for new development that promise economic benefits even where public safety and assets are at risk.**

## **THE COST OF LITIGATION TO LOCAL AUTHORITIES**

10. The costs local authorities bear when endeavouring to implement flood risk management policy is highly variable. Some local authorities will not attempt to control development to avoid flood risk because of the risk of litigation and associated costs. Others advocate quite successfully with considerable cost.
11. In a limited survey of local authorities into the potential cost of litigation we received the following replies:
  - "the potential cost of litigation is a disincentive in respect to challenging decisions"
  - "there have been cases that have been settled through mediation"
  - "Bay of Plenty Regional Council officers routinely provide information on potential flood hazard to territorial authorities for their consideration in district planning and consents. Providing this information includes undertaking

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<sup>4</sup> Glavovic, Saunders and Becker, 2010: "Realising the potential of land-use planning to reduce hazard risks in New Zealand" The Australasian Journal of Disaster and Trauma Studies.

hydrologic modelling and producing flood management strategies at a cost of approximately \$80,000 per annum.”

- “over the past six years, there have been three main cases which have gone before the Environment Court: the Holt proposal, proposal at Karitane, Dunedin City Council; Alpine Packhouse proposal at Picnic Creek, Earnscliffe, Central Otago District Council; and Variation 15 to the Dunedin City Council District Plan, at West Taieri, Mosgiel. Collectively, these have accrued direct costs of over \$112,000 in staff costs, and \$135,000 in legal fees [i.e. \$247,000]”
- “taking the above estimates and attributable costs into account, it is estimated that annually, Environment Canterbury spends \$200,000 - \$300,000 on advocating its policy position (additional to straight policy or hazard analysis and advice) for flood risk management”. Costs attributable to staff, resource consent hearings, Environment and High Court processes
- “one flood hazard overlay for the Marlborough Sounds Plan went through unchallenged, while the flood hazard overlay for the Wairau/Awatere Plan had one appeal. This was later withdrawn when the technical information was provided to the appellant. In other words, the current regime was imposed with minimal costs.”
- “Proposed Plan Change 3: Natural Hazards - Flooding' to the hearing stage is estimated at approximately \$121,000. These costs consist of:

Consultant Fees: \$72,000 (prior to having in-house staff to progress the Draft Plan Change).

Staff Time: \$42,000 (includes an estimate of another 1 month of work to prepare the Planner's Report on submissions/further submissions on the Proposed Plan Change).

Administration Costs: \$7,000 (includes public notices, printing of maps, hall hire, etc).

In addition to the above costs, it is estimated that there will be costs of around \$14,000 to hold a hearing, prepare and notify a decision. Total costs of the Plan Change (excluding any costs for potential appeals/legal costs) would be around \$135,000 (spread over a four year period).

Also, please note, the above figures do not take into account costs that have fallen upon Environment



Waikato in the preparation of individual Catchment/Flood Modelling reports and associated maps.” (Thames-Coromandel District Council).

- “the total costs for Thames-Coromandel District Council for Kahikatea Estates is as below:

Stage I consent processing and Judicial Committee costs totalled \$38,633.05 (ref SUB2005/150)  
Appeal costs; legal fees \$3980.53; planners \$18,632.24  
Stage II consent processing \$11,500.00 (ref SUB2008/68)  
Total costs: \$72,745.82”.

**Local authorities, and hence their communities, bear substantive costs to defend planning initiatives to reduce flood risk.**

## **THE TECHNICAL BASIS**

12. The first priority of local government in managing and reducing risk from natural hazards, such as flood hazard, is to establish programmes that calculate or estimate risk. This is determined by studying factors such as magnitude and frequency, historic evidence and triggering factors of hazards, together with information on vulnerability i.e. the physical, social, economic and environmental factors that increase the susceptibility of a community to the impacts of a hazard – a risk management approach.
13. Future flood risk cannot be reliably estimated from current records of river flows. The New Zealand Climate Change Office summed up the statistical limitations of such predictions in 2001: *More than 50 years of observations would be required to test whether a '1 in 100' flood has in fact become more frequent and now occurs, for example , every 25 years. If the flood did become more frequent, substantial damage would occur while waiting for 50 years of proof.*
14. Regional scale projections of climate change impacts are being developed by NIWA<sup>5</sup>. Historic observations are used to develop New Zealand climate fluctuations to the changes at a larger scale i.e. to the global circulation model. In March 2010, NIWA released a report prepared for the Ministry of Agriculture and Forestry

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<sup>5</sup> <http://www.niwa.co.nz/our-science/climate/research-projects/all/regional-modelling-of-new-zealand-climate>

discussing flood risk under climate change<sup>6</sup>. It discusses a framework bringing together climate scenarios, rainfall models and hydrological models to simulate the physical processes occurring at a catchment level.

15. The flood risk framework was trialled in two case study catchments; the Uawa (East Cape) and Waihou (Northland) catchments. Two climate change scenarios; A2 (high emissions) and B2 (moderate emissions) (2070 -2100) were used. In both catchments, annual and seasonal rainfall totals were reduced but daily rainfall extremes and hence flood magnitudes are increased.

*In the Uawa catchment, change in annual rainfall total between 1970-2000 and 2070-2100 was estimated at -10% to -15% (A2) or 0% to -5% (B2). Under the B2 scenario, floods at all return periods and all gauging locations are expected to be larger, having approximately 1.2 times the discharge seen under current conditions. Under the A2 scenario, floods at less than two years return period (i.e. the annual flood) are expected to decrease slightly (approximately 0.9 times current discharge); but floods at the 15 – 30 return period may become significantly larger, up to 1.8 times current discharge for the two sites on the Hikowai.*

*In Waihou catchment, a larger decrease in annual rainfall total is predicted between 1970-2000 and 2070-2100, estimated at -15% to -20% (A2) or -10% to -15% (B2)..... Under the A2 scenario, floods at all return periods (discharges) are expected to be larger, approximately 1.4 times the discharge for current conditions. Under the B2 scenario, floods at less than 3-year return period are similar to current conditions; and floods 4-15-year return period will increase to approximately twice the current discharge.*

16. In severe events such as Cyclone Bola, the State Highway in the Mangatuna basin around the Uawa River mouth becomes a floodway and cannot be used cutting access along the coast. The Tologa Bay flats are subject to relatively frequent flooding and given their economic importance for a range of farming activities the Gisborne District Council has undertaken a feasibility study for flood mitigation measures.
17. In Northland, where weather readily causes flood hazard due to the steep hills quickly feeding run-off to the surrounding low-gradient rivers, the Regional Council has set up the Priority Rivers

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<sup>6</sup> Flood Risk Under Climate Change: A framework for assessing the impacts of climate change on river flows and flood, using dynamically-downscaled climate scenarios. A case study for the Uawa (East Cape) and Waihou (Northland) catchments. Prepared for the Ministry of Agriculture and Forestry.

Flood Risk reduction Project. This project identifies 27 rivers where flooding poses high risk to lives, buildings, road access, infrastructure and agriculture

18. The results of the NIWA work cannot be assumed to be definitive or hold true for other catchments in New Zealand. There are too many inherent uncertainties in climate modelling. Nor can increases in flood discharge be assumed to mean greater impacts from flood events as many factors influence e.g. river gradient /sediment load carrying capacity.
19. What is noteworthy however, is that in these two regions where climate change scenarios indicate drier overall conditions<sup>7</sup>, flood discharges do not decrease but increase.

**Future flood risk cannot be reliably estimated from current records of river flows and localised evidence is vital when establishing hazard zones. A trend to increasing frequency and/or intensity of rainfall may lead to an increase in flood risk. A precautionary approach that promotes risk avoidance is required, even where there is inherent uncertainty.**

## **THE LEGAL BASIS**

20. As a result of ongoing discussion on the need for a national policy statement on flood risk, LGNZ sought a legal opinion from Simpson Grierson on local authorities ability to limit development in natural hazard areas. What follows is drawn directly from this opinion.

### **The Building Act**

21. The Building Act 2004 is not a legal mechanism that councils can generally use to "prevent" buildings being constructed, or added to, in hazardous areas, except in some specific situations. Those situations are relatively limited.
22. If the building consent application can satisfy the council that they can meet all the requirements in sections 71 and 72<sup>8</sup> of the

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<sup>7</sup> Climate change effects and impacts assessment: A Guidance Manual for Local Government in New Zealand – 2nd Edition May 2008 Ministry for Environment and NIWA climate information <http://edit.niwa.co.nz/our-science/climate/information>

<sup>8</sup> Section 72 Building consent for building on land subject to natural hazards must be granted in certain cases specifically the building work will not worsen the hazard and the land is subject to more than one hazard and it is reasonable to grant a waiver or modification of building code

Building Act 2004, the council must grant the building consent, although it may result in a tag being put on the certificate of title for the property under sections 73 and 74 of the Building Act. Controls in the Building Act concerning buildings with specified intended lives will also not allow council to prevent development.

**The Building Act 2004 is not a legal mechanism that councils can generally use to prevent buildings being constructed, or added to, in hazardous areas.**

## **The RMA**

23. Sections 106<sup>9</sup> and 220<sup>10</sup> of the RMA provide for conditions on subdivision consents relating to hazards but are not available to prevent new land use development as such.
24. The RMA provides councils with a mandate to prevent or restrict both new development and the extension of existing development in hazardous areas (RMA Sections 30, 31<sup>11</sup>, 66 & 74<sup>12</sup>). Councils can do this by providing in their plans for appropriate objectives and policies, and by providing for non-complying activity status, and where appropriate prohibited activity status, for development activities. The measures can only be put in place if proper evaluations have been carried out, and relevant factors considered, in accordance with the requirements of the RMA (discussed below). It also requires careful wording in plans as to precisely what activities are to be made non-complying or prohibited and their respective locations.
25. Despite the ability to prevent new development and extensions to existing development, existing land use activities/development in hazardous areas can continue if they fall under Section 10<sup>13</sup> of the RMA. But, if the regional plan in place for the particular activity provides sufficient controls over the hazard areas and related activities, this may prevent the continuation of some existing activities.
26. In particular a building that is destroyed, that under the district plan would be permitted to be rebuilt provided it is of the same scale character and intensity, could not be rebuilt if the regional plan provides otherwise.

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<sup>9</sup> Section 106 RMA: Consent authority may refuse subdivision consent in certain circumstances e.g. erosion subsidence, inundation from any source etc

<sup>10</sup> Section 220 RMA: Condition of subdivision consent

<sup>11</sup> Section 30 & 31 RMA: Functions of regional council and territorial authorities under the Act

<sup>12</sup> Sections 66 & 74 RMA: Matters to be considered by regional council and territorial authority

<sup>13</sup> Section 10 RMA: Certain existing uses in relation to land protected

27. For a RPS to be an effective tool to prevent development in hazard areas, it needs to be clear in its directions for the content and specific requirements to be incorporated into regional and district plans. The RPS needs to contain directory language. If the aim is to prevent development, then using the term “avoid” sends a stronger message than “remedy” or “mitigate adverse effects”.
28. It is much easier (however) for local authorities to provide for controls in hazardous areas and introduce non-complying or prohibited activity status for development or redevelopment in such areas, if the hierarchical planning documents require the authorities to make such provision in their plans. Both regional and district plans are required to “give effect to” a NPS, NZCPS and RPS.

**The RMA provides councils with a mandate to prevent or restrict both new development and the extension of existing development in hazardous areas.**

**It is clear however, that it is much easier for local authorities to provide for controls in hazardous areas and introduce non-complying or prohibited activity status for development or redevelopment in such areas, if the hierarchical planning documents i.e. a national policy instrument, require the authorities to make such provision in their plans.**

### **Planning controls and private property rights**

29. In July 2010 the Resource Management Law Association roadshow presented a paper discussing the tension between restricting development in hazard prone areas and allowing land owners to develop their land in the manner they wish (Planning Controls and Property Rights – Striking the Balance, Berry & Vella).
30. The discussion paper highlights that district and regional councils are increasingly facing real challenges in terms of resource use and protection and goes on to discuss the extent to which central and local government can impose planning controls which infringe on landowner’s property rights.
31. Berry and Vella judge the Courts to have recognised the need to interpret legislation in a way which provides for environmental legislation to be effective. In *West Coast Regional Council v Royal*

Forest and Bird protection Society of New Zealand, the High Court noted:

*"...The RMA is not considered by this Court as a drastic erosion of the rights of the property owners, and so to be construed restrictively to protect their rights. That judicial perspective has gone. The RMA operates to minimise adverse effects. It can be seen as a reform, by extension, of the common law. The common law had various tort remedies preventing or remedying adverse externality effects on neighbouring properties. Thereby common law for centuries has restricted and still restricts use of private property. See the common law against: all manner of nuisance, for example, from dust; escape of dangerous things; preventing loss of support of land; and diversion and pollution of water."*

32. The discussion paper concludes that in contemporary New Zealand law, common law does not provide a form of immutable protection of private property rights, rather that New Zealand law allows for private property rights to be diminished or affected by environmental regulation. The RMA enables constraints to be placed on the rights of private landowners in order to advance the greater good of the community and the environment.

*"The test to be inferred from s85<sup>14</sup> is not whether the proposed provision is unreasonable to the owner ( a question of the owners property rights), but whether it serves the statutory purpose of promoting sustainable management of natural and physical resources ( a question of public interest). The implication is that a provision that renders an interest in land incapable of reasonable use may not serve that purpose. But the focus is on the public interest, not the private property rights."*

(Hastings v Auckland City Council 2001 A068/01)

33. Existing controls within plans that impinge on the right of the property owner to use their property as they wish e.g. height controls and side yard requirements are largely accepted by landowners as beneficial. Now there are controls emerging which are designed to protect or enhance amenities or address environmental effects:

- land use controls to restrict nitrogen loading e.g. Environment Waikato's Regional Plan Variation 5: Lake Taupo
- coastal hazard setbacks
- tree protection controls

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<sup>14</sup> Section 85 Compensation not payable in respect of controls on land

- controls to protect landscape and amenity.

**There are numerous existing controls which impinge the right of property owners to use their property as they wish. The focus in interpretation of Section 85 is on the public interest, not private property rights.**

### **The New Zealand Coastal Policy Statement**

34. The 1994 NZCPS provides a basis for councils to take an approach in their plans that encourages the avoidance of development in hazard prone areas as opposed to relying on mitigation measures. The proposed NZCPS, which includes Objective 8 and Policies 51-54 to address the issue of coastal hazards, gives greater recognition to the likelihood of coastal risks arising in New Zealand, and strengthens what is in the 1994 NZCPS. (Simpson Grierson).
35. The concept of setting coastal hazard setbacks and building restrictions forward of these setbacks has been accepted in a number of cases e.g. Waihi Beach case, Skinner v Tauranga District Council, New Zealand Cashflow Control v Christchurch City Council and Fore World Developments.
36. Where conflicting evidence must be considered, the Court has restricted building on the basis of the need for the 100 year time frame (Ministry for Environment guidance on coastal hazard promotes a 100 year planning time frame) noting that such a time frame was found to be sound in the Waihi Beach and Skinner cases. Furthermore the Court acknowledges that erosion processes would be episodic and incremental, not reach the full extent suddenly, but nevertheless believed that the precautionary approach should be applied.
37. The Court also noted that:  
*“The kind and degree of precaution to be taken depends on the level of knowledge of the risk, its likelihood of occurrence, and its consequences. We do not live in a risk free world and the RMA does not require avoidance of all risks (Berry and Vella).*
38. The rationale of not living in a risk free world would appear to be supported by the recent Environment Court decision in Otago Regional Council v Holt where consent was granted to build a pole house on land potentially subject to tsunami, coastal inundation and flooding. Mitigation measures were agreed to by the applicants, namely signing a deed acknowledging the hazards,

provisions for evacuation and a height provision for the design of the house

**The Environment Court applies a precautionary approach for coastal hazard but a precautionary approach cannot be applied to flood risk in the absence of national policy.**

## **CONCLUSION**

39. It is not an efficient or effective outcome if communities externalise the cost of development on flood plains. The Environment Court argues that existing property rights should apply to land "unless they are shown to be less efficient and effective". This leads us to the conclusion that New Zealand as a whole would benefit from more direction to avoid increasing the flood risk to ensure local authorities are not unduly burdened with the cost of litigation in the Courts.
40. If NZIER and Erikson are correct in postulating that a portion of the direct costs of flood events are externalised, by as much as 16% in the case of the Waikato weather bomb, then there is also a benefit to the national community that does not appear to have been taken into account in determining the need for national policy direction.
41. It is clear that local authorities have the regulatory framework with which to prevent or restrict both new development and the extension of existing development in hazardous areas. It is equally clear that where a national policy directive is in place, such as the NZCPS, it supports a precautionary approach that promotes risk avoidance, even where there is inherent uncertainty.
42. A national policy statement would enable communities to adopt a precautionary approach to flood risk management with benefit for both local and central government.

**New Zealand as a whole, and central government, will equally benefit from the provision of an NPS on flood risk management through opportunities to reduce the externalised costs of flood events and the costs of litigation.**