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## Proposed National Policy Statement on Flood Risk Management

Submission to Ministry for the Environment  
15 June 2007

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### Background to IPENZ

The Institution of Professional Engineers New Zealand (IPENZ) is the lead national professional body representing the engineering profession in New Zealand. It has approximately 10,000 Members, including a cross-section from engineering students to practicing engineers to senior Members in positions of responsibility in business. IPENZ is non-aligned and seeks to contribute to the community in matters of national interest giving a learned view on important issues, independent of any commercial interest.

### Executive Summary

IPENZ is strongly supportive of measures to improve the management of flood risk in New Zealand, and in particular the move to adopt a nationally consistent approach (although we note that the practical application may differ depending on localised circumstances). In addition to the comments made below, we would like to refer the Ministry to *Managing Flood Risk – Draft New Zealand Protocol* (available at [http://www.ipenz.org.nz/ipenz/media\\_comm/documents/MFR2\\_001.pdf](http://www.ipenz.org.nz/ipenz/media_comm/documents/MFR2_001.pdf)). This document was developed by the Flood Risk Management Governance Group (comprising representatives of local and central government, the New Zealand Centre for Advanced Engineering, and IPENZ) to improve management of flood risks in New Zealand. As set out in this document, IPENZ holds the view that flood risk management must be addressed by integrated solutions, which will require disciplines and jurisdictions to work together, and considers that this should be a requirement of the National Policy Statement (NPS). IPENZ considers that a National Policy Statement for flood risk management can only guide decision making if there is also adequate information and expertise available, which there currently is not.

IPENZ would also like to offer assistance with the proposed reference group work.

### Submission

IPENZ considers that the proposed NPS should guide all aspects likely to be considered in a flood risk management strategy. While IPENZ recommendations for developing a framework for managing flood risk can be found in detail in *Managing Flood Risk – Draft New Zealand Protocol*, we offer additional comments below (which have been made under the relevant headings but often overlap).

## **Scope**

IPENZ considers that the objective of the NPS should be to provide a decision-making framework through which flood risk can be addressed by an integrated, holistic approach. Such an all-encompassing approach should ensure:

- Appropriate forms and levels of protection are identified and put to the local community, including recognition and treatment of residual risks.
- A flexible and participatory process is used to determine suitable levels of protection, allowing a high level of protection somewhere and a low level elsewhere, whichever is suitable for the purposes of the management scheme.
- Communities sufficiently understand the risks, costs and benefits to make good flood management decisions; solutions might range from physical protection to emergency evacuation.
- Rivers are managed as water and sediment transport systems (as part of catchments).
- Natural river paths and catchments are recognised as non-negotiable constraints on river modifications.
- Sustainable long-term solutions that take into account both human usage and environmental requirements are sought.
- Context-based solutions are implemented, guided by common principles and best practice.

To ensure the success of the NPS a public education campaign and continuing community engagement should be undertaken. IPENZ notes that issues such as the probability of a flood occurring, such as the 1-in-100-year flood, are often misunderstood by the general public, and even reported incorrectly in the media.

IPENZ notes that effective implementation will also require political support for inter-organisational relationship management, and a commitment to ensure risk management systems are in place, and local council programmes are developed within a catchment context. We also recommend that existing land use should be reviewed, particularly marginal land or land in or adjacent to floodplains.

## ***Opportunities and impediments***

Good practice is impeded by a lack of good-quality, well-researched information. Issues for consideration include:

- IPENZ strongly recommends that consideration is given to how return periods are determined; in particular, the statistical approach of extrapolating the determination of a 100-year event without a similar length of records.
- Hazard mapping is a useful tool, but many low lying towns (including Whitianga and the Coromandel Peninsula) are yet to undergo recent assessments. Considering the trend towards rapid development in many low-lying coastal areas, comprehensive hazard maps could prevent unsuitable developments from proceeding.
- Flood hazard information should be included in District Plans, and district councils should impose stricter controls on floodplain development. Consideration needs to be given to existing land uses, including the way in which marginal land is treated, and developing firmer national policy to control floodplain development.
- Nationally managed flood risk management research (engineering, environmental and social) programmes to identify and develop new knowledge and methodology should be facilitated and technology/knowledge transfer programmes should be implemented to ensure these are brought into practice.
- Where there is already existing scientific and engineering knowledge or information it should be fully integrated into land-use planning.

In relation to management issues, there currently appears to be a lack of integration between flood-risk management and land-use planning. We recommend that the Ministry addresses this issue and focuses on the development and implementation of integrated solutions to flood management. The NPS should promote engagement between agencies and ensure that roles and responsibilities within and between governments are clear and understood.

### ***Benefits and costs***

IPENZ considers adopting an NPS would not only provide a comprehensive framework suitable for universal application but also facilitate the sharing of knowledge. This could be linked to such resources as the planned IPENZ virtual library of New Zealand engineering knowledge, where useful information is intended to be publicly and freely accessible.

IPENZ considers that government should fund flood hazard assessment and floodplain investigation work as some regional councils may not have adequate funds or appropriately skilled staff to conduct this type of work. IPENZ recommends that a nationally-funded task group should review the available flood hydrology and flood hazard information, and identify and prioritise "at-risk" floodplains, before carrying out the needed flood hazard assessment and floodplain investigation work.

Key focuses should include:

- Supporting and training appropriate people as it appears that there is currently a shortage of skilled practitioners qualified to work in this area.
- Reviewing, centralising and ensuring accessibility to historical flood information. (We also note that historical flood information can give a reliable indication of flood risk in the absence of detailed floodplain investigations.)
- Supporting regional councils in post-flood investigation and documentation.
- Undertaking river and floodplain modelling work where the regional (or district) councils are not able to do so.
- Integrating engineering solutions with environmental, social and cultural community outcomes.

However, as outlined above, IPENZ considers that flood protection standards should be decided by local communities, based the results of investigation and public consultation regarding floodplain asset risks and potential damages, planning controls and local costs and benefits.

### ***Risks***

IPENZ considers that the contributing risks being faced by New Zealand include:

- The dynamic nature of New Zealand's geology and weather, including the cumulative effects of land-use change.
- Increasing development pressure for access to flood-risk areas.
- The increasing cost of present flood mitigation measures.
- Increasing public expectations for protection.
- Increasing appreciation of the limitations of some mitigation measures.
- Appreciation that sustainability will require integrated approaches to our interventions in natural systems.

We also note that findings from the IPCC Fourth Assessment Report indicate that New Zealand will suffer more extreme weather events in the future.

## **Conclusion**

IPENZ considers that the requirement for, and introduction of, well-researched and integrated flood risk management strategies is of utmost importance. IPENZ recommends that the scope of the NPS is wide enough to address all relevant issues, and notes that a lack of, and lack of access to, appropriate information is the major impediment to progress. IPENZ also recommends that the scope of the NPS is sufficiently broad to include provision for technical expertise, accountability (particularly across jurisdictions) and organisational capacity.