EVIDENCE TO THE LOCAL GOVERNMENT AND ENVIRONMENT COMMITTEE ON THE BUILDING AMENDMENT BILL (NO 4)

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Introduction

1. Irrigation New Zealand (INZ) welcomes the opportunity to present this evidence to the Local Government and Environment Committee on the Building Amendment Bill (No. 4).

2. My name is Andrew Curtis. I am the Chief Executive of INZ. I hold a BSc(Hons) degree from Oxford Brookes University and a PGDip from the University of Surrey.

3. My previous New Zealand (NZ) work experience includes six years employment for Hawke's Bay Regional Council in the role of Strategic Advisor – Water, where I helped lead the initial development phases of the regional water strategy, including water storage investigations and water metering implementation.

4. INZ membership represents approximately 56% of NZ's irrigated area. All the major irrigation service industries are also members - suppliers, designers, installers, consultancies, financial and research institutions. This unique

membership combination leads to a well balanced whole of industry approach to INZ's advocacy activities.

5. Irrigation is of national significance to NZ. In 2002/03, based on 425,000ha irrigated area, irrigation contributed 11% of farm gate GDP (MAF 2004)[1] - over 1% of GDP. Since 2002/03, the irrigated area has increased by approximately 50%. INZ now conservatively estimates an 18% contribution to farm gate GDP (approximately 2% of national GDP). Note: these figures are farm gate based and do not take account of the flow-on community economic benefits (processing and related service industries) – which are considerable. Looking at the future potential, based on the NZIER report of 2010[2], increasing irrigable area by a further 350,000ha will increase national GDP by 0.8%.

6. The sustainability of all INZ members businesses is founded on secure, on-going access to a reliable water supply – without this they, and the communities that rely on them, do not function. The national economy would also be significantly impacted upon. INZ actively engages with its members on planning issues, proactively facilitating a wider understanding of the relevant issues by all.

Dam Safety Scheme

7. The objective of the amending the Dam Safety Scheme was to:

   - Improve its effectiveness and efficiency, whilst reducing compliance costs.
   - Ensure risk management approaches are balanced with the minimisation of compliance costs.

8. The ultimate objective of the Dam Safety Scheme was to ensure dams are well-built, higher potential impact dams are appropriately monitored, and the potential risks to people and property posed by dam failure are minimised.

9. It is important one does not lose sight of this purpose. However, in its current iteration the Building Act Amendment No. 4 unfortunately has. INZ believes the Amendment will increase the number of low potential impact dams captured (those that pose little risk to people and property) and thus compliance cost - effectively an unproductive use of capital for NZ Inc.

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[1] The Economic Value of Irrigation In New Zealand, MAF Technical Paper No: 04/01
[2] The Economic Impact of Increased Irrigation, MAF 2010

Explanation

10. The existing definition of a 'large dam' is based on depth. Depth is complex to define and measure, and has resulted in much confusion to date. The new definition based on dam height (toe to crest) is a much clearer approach and also used widely internationally. INZ therefore supports in principle the change in definition (as per section 133A).

11. However applying the definition of a 'large dam' contained in section 7 (3m and 20,000m^3) to the new dam height measurement definition, now means a greater number of dams will be captured.

12. Dams have a varying amount of freeboard (minimum of 0.5m) also the toe of a dam is often located below its bottom water level. As a result dams holding well under 3m retained depth will now be captured by the amendment to the dam safety legislation.

13. In NZ there are a large number of dams used for small scale on-farm irrigation storage. The purpose of these is to give extra reliability to the irrigation water supply – enabling an 'as and when' approach to irrigation. This ultimately results in improved environmental performance and profitability - both being key to the future sustainable growth of NZ.

14. In the main these small on-farm irrigation storage dams are located on level ground, the corner of a centre pivot circle, for example. The construction is of localised earth material with bunds 3 - 4m high and the maximum water depth is 2.5m – 3m. Any greater depth results in leakage and thus the need for an artificial liner – which considerably increases cost. Typically the dams contain between 40,000 and 60,000m^3. Such dams pose negligible risk to communities and or the environment if they were to fail. It is therefore illogical to capture them in the dam safety scheme.

15. Although not directly applicable to its membership, INZ would also like to draw attention to numerous additional dams used for stock water in remote hill country environments that are now captured by the amendment. Again, if they were to fail such dams pose negligible risk to communities and or the environment. It is therefore illogical to capture them in the dam safety scheme.

16. INZ has not been able to accurately ascertain the additional number of small scale irrigation and stock water dams now captured by the Amendment. However, through discussions with its membership, dam specialists and also

my own personal experience working in east coast north island hill country, a conservative estimate is in the low thousands.

17. The additional compliance burden associated with unnecessarily capturing these dams equates to between $3 and $9million (1,000 – 5,000 at $3,000 per classification).

Solution

18. In determining the suitability of the Building Bill Amendment (No.4), the Local Government and Environment select committee has to make a decision as to which regulatory philosophy should be followed for dam safety in NZ:

    - Set a low, capture all threshold, which assess and then releases 'low risk' scenarios as appropriate.
    - Set a higher threshold, but enable regional authorities to call in 'high risk' scenarios that are under the threshold.

19. INZ is of the opinion, due to NZ's diverse topography and spatial demographic, that legislation for issues such as dam safety, to be cost efficient and effective, should be written for the majority. It is also important to recognise that capital should not be unnecessary tied up in bureaucracy if we are to maximise the economic opportunity for NZ. Alternative mechanisms should then be incorporated into the legislation to provide a means to capture the 'unique' scenarios that do not fall within these bounds.

20. The Dam Safety Review, undertaken by an independent expert (Bruce McLean an engineer and project management specialist) provided such as pathway.

21. Since the Dam Safety Reviews release in 2010, INZ has struggled as to why internationally benchmarked thresholds for a NZ Dam Safety Scheme (50,000m^3 and 8m) were initially hybridised (with little rational but to appease the parties involved) and have now been completely ignored in the Bill? This is a particularly pertinent question given that the 'large dam' measurement methodology has been changed without consideration of its impacts. It also demonstrates those drafting the Bill have a poor technical understanding of the key components and their inter-relationships.

22. As the Amendment provides:

- A new method for measuring dams – section 133B
- The ability for regional authorities to capture smaller dams that pose a medium or high risk to the public – section 134A

23. The amendment also needs to change the definition of a 'large dam' (for the purpose of the dam safety scheme) in section 7 of the Building Act to state 8m high and 50,000m^3. These figures are still conservative when put in perspective internationally.

A Case Study – Mayfield Hinds Irrigation Limited (MHIL)

24. MHIL currently has approximately 120 on farm storage ponds ranging in depth from 2 – 3m. The dam walls are typically 3 – 4m at the maximum point. Capacities range from 20,000m^3 to 120,000m^3, but typically fall in the 40,000m^3 – 60,000 m^3 range. The dam footprint covers approximately 0.5 – 6ha.

25. Such dams have all performed very well, being built with the required freeboard and fitted with spillways to prevent damage to pond embankments from overfilling. Note: filling is controlled from irrigation scheme races - so they are not subject to weather events.

26. The 2 key drivers for keeping these ponds below the 3m depth were:

- Minimise Seepage – earthen lined ponds perform very well in preventing leakage up to a maximum depth of 3m
- Dam Safety – less than 3m depth was deemed as low risk given the nature of the construction materials, methods and scenario.

27. It is nonsense to consider capturing such ponds in the Dam Safety Scheme. There have been no issues to date and nor are there likely to be. The number of ponds constructed in this fashion is testament to the suitability of this design methodology – there have been no reports of damage even through the earthquakes.

28. Please also note, the change to the dam height measurement will also impact upon some canal embankments in the irrigation scheme – which has operated without issues since the depression!

29. Two photos of typical ponds are included.

INZ Evidence Ends