

3.5 Good Practice for Involvement in a Major Project

3.501 In March 2001 we published our report *Good Practice for Involvement in a Major Project* Lessons from the Opuha Dam Project.¹³ The report was based on a review of the involvement of several local and other public authorities in the project to build the Opuha Dam and associated works.

What Was the Purpose of Our Review?

3.502 Public sector entities, especially local authorities, are involved in large-scale capital projects. These projects:

- can be complex and, therefore, expose all parties to considerable risk;
- are generally expensive;
- often involve a number of entities from both the private and public sectors; and
- are often unique in nature and not likely to be repeated.

3.503 The purpose of our review was to see what messages for good practice we could find from looking at one such large-scale project. While much is known about the circumstances of the breach of the Opuha Dam, the lessons for public authorities that might be involved in such projects have not hitherto been explored.

Why Did We Choose the Opuha Dam Project?

3.504 The Opuha Dam project made headlines on 5 February 1997 when the dam was breached, releasing a large volume of

water – causing both a danger to the public in the vicinity of the river and significant damage to public and private property downstream from the dam.

3.505 In addition to the public interest in the project arising from the public money invested in it, we were concerned that the apparent “failure” of the project was significant because of:

- six public authorities being involved, two in a regulatory capacity;
- the dam being ultimately owned by a local authority trading enterprise; and
- a related local authority trading enterprise having engaged the contractor.

3.506 In examining the circumstances surrounding the breaching of the dam and its consequences, we were not concerned with what caused or who was responsible for the breach. Apportionment of blame is the responsibility of the courts after taking account of technical specialist argument and expert opinion.

3.507 However, we did consider it our role to see whether the public authorities:

- *regulating the project* had acted in accordance with, and had fulfilled, their statutory duties; and
- *investing in the project* had taken appropriate steps to establish that the project was, and continued to be, a sound investment.

3.508 The public authorities involved in the project and the nature of their involvement are shown in Figure 3.1 opposite.

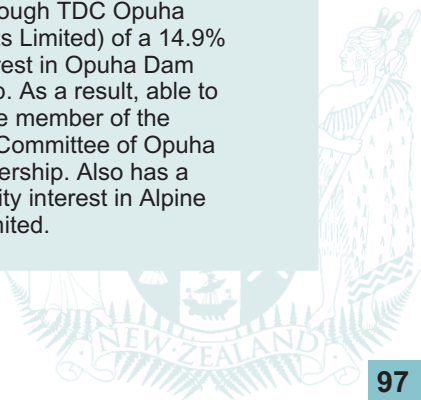
3.509 Our ultimate aim was to identify any lessons that could be learned from the project to the benefit of any public authority being similarly involved in the future. Such lessons could include drawing on good management practice and avoiding identifiable shortcomings.

3.510 Consequently, the report is not about the causes of the dam breach. Nor does it in any way attempt to establish who was responsible for the breach. It also does not cover the actions of private sector entities, except where they affect the public sector.



*Figure 3.1
Public Authorities Involved and Their Roles*

| AUTHORITY | INVOLVEMENT |
|------------------------------------|--|
| Alpine Energy Limited | Owner (through Timaru Electricity Limited) of a 50% equity interest in Opuha Dam Partnership, and able to appoint four of the eight members of the Executive Committee of Opuha Dam Partnership. |
| Canterbury Regional Council | Responsible for issuing various resource consents. |
| Mackenzie District Council | <p>Exercising regulatory functions in dealing with applications:</p> <ul style="list-style-type: none"> • to modify the Mackenzie District Transitional Plan; and • for the issue of building consents for the dam and downstream weir. <p>Owner of a 4.96% equity interest in Alpine Energy Limited.</p> <p>Provided \$1,125,000 of loan capital to Opihi River Development Company Limited (a partner in Opuha Dam Partnership).</p> |
| Opuha Dam Limited | A local authority trading enterprise, acting as trustee of the assets of Opuha Dam Partnership and (under power of attorney from the partners) contracting party with the dam builder. |
| Opuha Dam Partnership | A local authority trading enterprise formed to construct, operate, manage, and control the dam, generation plant, and all related facilities. |
| Timaru District Council | Owner (through TDC Opuha Investments Limited) of a 14.9% equity interest in Opuha Dam Partnership. As a result, able to appoint one member of the Executive Committee of Opuha Dam Partnership. Also has a 47.5% equity interest in Alpine Energy Limited. |



What Are the Main Messages from Our Review?

- 3.511 The Building Act 1991 together with the Building Code made under that Act¹⁴ impose specific requirements on the construction of all buildings, including large dams. This legislation is concerned with the risks that water flows may pose to buildings, and the risks that buildings which are subject to water flows may pose to people and to other property, should those water flows cause the collapse of a building.
- 3.512 The Resource Management Act 1991 is concerned with the management of effects on the environment of allowing certain activities, including the activities of erecting dams in river beds and of damming water. In the case of the Opuha Dam project “effects” on the environment were brought about by the sudden release of flood waters that had collected behind the partially constructed dam and the resulting discharge of dam materials into the Opuha River.
- 3.513 There is a grey area between the Resource Management Act and the Building Act concerning dam breaches. Uncertainty surrounds the extent to which consent authorities under the former Act can rely on procedures under the latter Act to address and guard against negative environmental impacts resulting from failures during construction.
- 3.514 Government agencies have given some consideration to changes to the legislation to address dam safety issues. We consider that clarity in this area is necessary and suggest that the matter be revisited. However, until such time as the law is clarified, local authorities or other public authorities with a regulatory role need to co-ordinate their procedures to ensure that both environmental risks and building risks are adequately addressed.

¹⁴ The Building Code is set out in the First Schedule to the Building Regulations 1992 (SR 1992/150).

3.515 The main messages for a local authority or other public authority that has a regulatory role in a major project are that it should:

- Ensure that all decision-makers are fully aware of their statutory responsibilities and, in particular, are provided with appropriate advice in relation to risk. If an independent person is appointed in an advisory or decision-making role, the authority should ensure that the person has the appropriate expertise, experience and qualifications to enable them to meet all relevant statutory requirements and appreciate the issues involved.
- Wherever practicable, establish procedures that ensure that all material relevant to the conditions of consent (whether a building or resource consent) are physically incorporated in the consent or, if this is not possible, the consent includes clear cross-reference to the identity of that material. This is important to establish the certainty and enforceability of the conditions of consent.
- Ensure that the risks associated with the design and construction of a project are fully assessed by in-house staff or consultants, and that the conditions of consent (whether building or resource) adequately cover the risks identified. This is particularly important when a project (as in the case of the Opuha Dam with the diversion of flood water) has design, construction and environmental impact implications.
- Plan and implement a systematic approach to monitoring compliance with the conditions of consent (whether building or resource).
- Ensure that its review procedures are directed at the critical phases of the project and are not limited to being applied at standardised review times.



- 3.516 A local authority or other public authority should ensure that it has (either on its staff or by engagement specially for the purpose) the relevant expert advice for the purposes of:
- assessing proposals and establishing the integrated management regime referred to in paragraph 3.518;
 - advising on consent conditions; and
 - monitoring compliance with the consent and other statutory procedures.
- 3.517 In particular, decision-makers and advisers need to identify critical times of risk in the construction process. In other words, the right expertise needs to be applied to the project at the appropriate times to allow risks to be identified and minimised or avoided.
- 3.518 The over-riding message for any local authority or other public authority that invests in a major project is to have an integrated management regime, including:
- sound and enforceable contractual arrangements – to enable the contractor to be held accountable;
 - adequate insurance – to protect the investment;
 - a sound overall project management structure – to be able to recover and continue with the project should problems be experienced;
 - a quality assurance system (for example, peer reviewers and experts) in place at the appropriate stages – to ensure that the project is being completed in accordance with the appropriate professional standards; and
 - a system for monitoring its investment.

