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Specialists in Strategic, Enterprise and Project Risk Management

ACTIVITIES IN THE WATER AND WASTE WATER SECTOR

Broadleaf has undertaken a range of risk management assignments for major utilities in the water and waste water sector. Some examples of our work are provided in the following sections.

1 Watercare Services, Organisational Risk Management



As part of a general review of its business processes, Watercare Services, the bulk water and waste water business in Auckland, New Zealand, sought to establish a comprehensive risk management framework. The framework had to integrate existing good practices in the organisation's asset management and OH&S systems with sound processes for all its operations. We undertook a detailed examination of organisational risk management in Watercare that included:

- Conduct of risk identification workshops in each operating division (Water, Waste Water, Design and Laboratory) and the corporate office
- Formulation of a risk management strategy for the business, integrated with well-developed risk management processes already in use for asset management and OH&S
- Development of organisational risk management procedures to support the strategy
- Development of a specific Risk Management Plan for a major asset amplification project.

We subsequently conducted a review of Watercare's progress in implementing the risk management framework across the business. The implementation has been successful and risk management is now well established in the organisation.

2 Sydney Water, Risk Management



Sydney Water pays close attention to risk management in its operations and major projects. We have assisted Sydney Water in a number of specific assignments including:

- Development of a strategic Risk Management Plan for the North Head Sewage Treatment Plant at Manly
- Risk assessment of the Cronulla Sewage Treatment Plant and effluent pipeline upgrade and amplification project
- Assessment of risks associated with the need to modify the tender documents for the Cronulla Sewage Treatment Plant upgrade following a proposal for high-quality waste-water reuse
- Pre-tender risk assessment of the Potts Hill Reservoirs remedial and reservoir covering works, followed by a review of risks after selection of a preferred contractor
- Review of the contract for the remediation of the Potts Hill Reservoirs to ensure all technical risks were incorporated appropriately
- Project risk assessment for the Sydney Harbour North Side Storage Tunnel, designed to ameliorate sewer and stormwater overflows during heavy rain
- Risk assessment of a proposed procurement strategy for an inland sewerage treatment plant, involving a partnership between the client and the contractor for the duration of the project.

- Procurement risk assessment during the early planning for a desalination plant for Sydney.

3 Sydney Catchment Authority, Strategic Risks

As the Sydney Catchment Authority was establishing its corporate structure and processes, we planned and facilitated an organisational and strategic risk assessment covering all areas of the new business. This enabled the new organisation's management team to set out with a clear view of the risks they faced and the priorities these risks dictated.



4 ActewAGL, Operating Risks

We formed part of a team that reviewed the operating risks of the ActewAGL partnership, which manages water and sewerage services in Canberra and the rest of the Australian Capital Territory. This entailed a consideration of the issues causing uncertainty in demand, supply, capital and operating budgets and the development of a model that integrated these into a quantitative analysis of key financial measures of the performance of the business. This model was used to assess the value of specific risks and groups of risks as part of a review of the management agreement under which the partnership operates.



5 SunWater, 'Water for Bowen'

SunWater in Queensland commissioned Broadleaf to facilitate a series of risk assessments associated with the feasibility studies into the 'Water for Bowen' Project, to build, own and operate an economically viable water supply scheme that will bring water from the Burdekin River to a range of customers between Clare Weir and Bowen, and potentially beyond. The risk assessments involved all stakeholders, including local farmers and government officials, and were designed to achieve 'ownership' of the risks and a consistent understanding of the project goals and challenges. Subsequently Broadleaf conducted value engineering studies to help optimise the design of this major project. We also provided the project team with a project risk management system to help them manage the risk management process and the information it generated going forward.



6 Bega Valley Shire, Sewerage Upgrade Tender

The Bega Valley Shire Council and New South Wales Department of Land and Water Conservation embarked on a sewerage system upgrade for the Bega Valley Shire. A modified form of alliance contracting was considered for the procurement of the system and private sector involvement was sought in the operation of the treatment plants. To provide a benchmark for evaluation of the commercial tenders and a basis for comparing the proposed procurement approach against conventional public sector procurement, a public sector comparator (PSC) and models of the tender cash flows were prepared. The models encompassed procurement and operating cash flows through the life of the proposed contract.



The PSC evaluated the cash flow and the uncertainty in it that would arise if the upgrade were to be procured as a direct purchase and the system was operated by Council personnel. The net effect of the base cash flows and the effects of risks in the PSC could be compared with equivalent forecasts for the tenders. The tender forecasts took account of planned risk allocation between the Council and the contractor as well as the effect on risk of the technology they each proposed to use. This ensured that all options, the PSC and the commercial tenders, were compared on the same basis and due weight was given to the risks that each one would place on the Council.

7 Desalination Project, Peer Review of Environmental Risk Assessment



A new seawater desalination plant was proposed, to be located on 30-40 hectares of cleared farmland on the Bass Coast approximately three kilometres west of Wonthaggi, 90 kilometres south east of Melbourne. The plant was designed initially to supply up to 150 gegalitres (GL) per year of potable water to the Melbourne water supply system, with the potential to expand to a capacity of 200 GL per year.

The Victorian Department of Sustainability and Environment required a detailed environmental risk assessment as part of the approval process for the new plant. Broadleaf acted for the Department to undertake a peer review of the environmental risk assessment process and its outcomes.

8 Hunter Water, Tillegra Dam



Hunter Water proposed to construct a 450,000 megalitre water supply dam on the Williams River at Tillegra, approximately 12 km north west of Dungog, NSW. The dam embankment would be approximately 800m long and 75m high and the reservoir would inundate approximately 2,100ha of primarily agricultural land.

Broadleaf assisted Hunter Water undertake a quantitative risk analysis of the construction cost estimate for the Tillegra Dam, as input to the budget setting process within the authority.

9 Brisbane Water, Sewer Augmentation



Broadleaf conducted a risk assessment and facilitated risk treatment planning for the S1 Sewer augmentation project in the Brisbane CBD for Brisbane Water (now part of the Brisbane City Council), and assisted in the evaluation of the benefits and costs of commercial options for the delivery of the project.

10 Other Activities

Our other assignments for water and other businesses encompass:

- Quantitative risk analysis of the cost estimate for the rehabilitation of an irrigation area;
- Assessment of construction risks for a sewerage network infill project;
- Recurrent planning and budgeting processes;
- Risk and strategy in capital works planning;
- Systems to support the operating program and activity-based costing;
- Corporate requirements for asset management;
- Numerous activities associated with water and waste water facilities within industrial sites or major projects.

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