



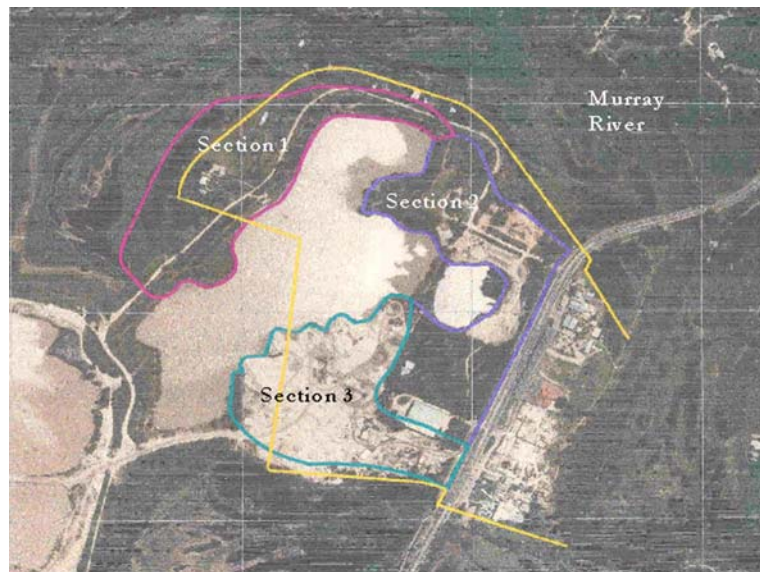
Environmental Management Pty Ltd, ABN 78 003 520 705
Environmental, Economic and Water Studies
15 Cottenham Ave, Kensington NSW 2033, Australia
Phone: +61 2 9662 2255 Fax: +61 2 8905 9015
Email: terry@environmentalmanagement.com.au
Web: www.environmentalmanagement.com.au

15 May, 2004

Projects in Water-Disaster Management – Floodplain Management and Coastal Zone Management

Gateway Island Risk Management

Gateway Island is in the floodplain of the Murray River between the towns of Albury and Wodonga, about 14km downstream from Hume Dam. The island is prone to natural flooding from the Murray River and flooding through failure of Hume Dam. The island was to be developed for residential, commercial and recreational uses. A plan was developed, taking account of both the economic and social benefits and the economic and social risks.



Trial Bay Tourist Park Flood Risk Management Plan

Trial Bay Tourist Park is on marginally flood-prone land. The proprietors wanted to build cabins and a flood risk management plan was drawn up to guide the future development and to keep the residents on the site prepared for the next flood.

Risk of coastal erosion at Papamoa, New Zealand

Papamoa is a coastal village on the Bay of Plenty, New Zealand. The local council has declared that houses adjacent to the foreshore are in an Extreme Risk Erosion Zone. This prohibits the residents from undertaking many activities.

Terry analysed the available data and showed that the probability of the zoning being correct was less than one in 100, 000. He also showed that even if the Zoning had been correct, the prohibitions imposed by Council could not be justified economically or socially.



The residents lost the case in the Environment Court. Curiously however, the Court did not find that Terry's evidence was wrong.

Wollongong Floods

The floods in Wollongong in August 1998 caused widespread losses. The floods were not all that rare and it soon became apparent to those investigating the causes of the losses that much resulted from serious maladministration. Some examples showing how not develop in a floodplain are in the pictures below.

Sea-Dyke Upgrading, North and Central Viet Nam (United Nations Development Program and World Food Program)

Viet Nam has built an extensive set of sea dykes along its northern coast to protect against flooding from Typhoons. There was a need to develop a procedure for estimating how much funding was needed to maintain each dyke. This depended on the height of the waves, but there were no measurements of this. A procedure was developed by correlating the costs of previous repairs against the velocity of the typhonic winds.



Indus Valley, Pakistan Project Evaluation Review (Asian Development Bank), 1996

Eight years previously, in 1988, the Asian Development Bank had loaned money for various projects for flood mitigation in the Indus Valley. In 1996, following a large flood, the effectiveness of these works was checked.



One project was upgrading the Bund System along the Indus River, to mitigate the losses from flooding.

Flash-Flood Warning System for Sydney, Newcastle and Wollongong

It was proposed to install a radar system to provide early warnings of all floods between Newcastle and Wollongong by monitoring the intensity of the rainfall as the rain clouds moved over the land. In order to seek funding, it was necessary to compare the benefits with the costs.

Because many of the watercourses in this area had not yet been studied, it became necessary to develop semi-empirical economic relationships to estimate flood losses in each valley. These allowed the economic analysis for this large area to be completed rapidly.

The analysis was later extended to cover benefits in helping with other emergencies such as fires, pollution, coastal warnings, strong winds and aircraft movements.