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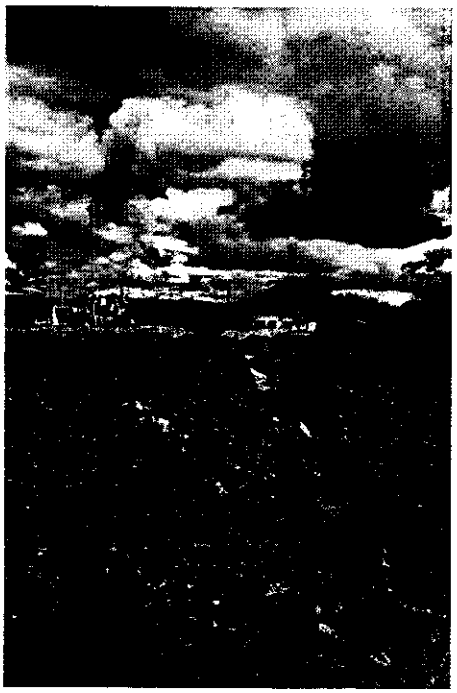
DISTRICT PLANS AND REGIONAL POLICY STATEMENTS

HOW DO THEY ADDRESS EARTHQUAKE HAZARDS?



A fault trace, rupturing through the earth's surface as a result of the 1987 Bay of Plenty earthquake. Where fault traces can be identified it may be possible to incorporate this information and make provisions for earthquake hazard areas in plans. Photograph: Environment BOP.)

INTRODUCTION

The Resource Management Act 1991 gives both regional and local authorities the function of controlling land use for the purpose of avoiding or mitigating natural hazards (Section 30 (1) (c) (iv) and 31(b)). Plans and policy statements must be prepared in accordance with council functions under Section 30, making it necessary for regional and district councils to consider the avoidance or mitigation of natural hazards when preparing such a document.

Several research projects have been completed by researchers in the United States on what constitutes a 'good plan' with regards to natural hazards (for example, Berke and French, 1994; Burby and Dalton, 1994; Dalton and Burby, 1994; Berke *et al.*, 1996; Burby *et al.*, 1997). A number of New Zealand focussed studies have also analysed what a 'good plan' consists of (for example, Dixon *et al.*, 1997; Berke *et al.*, 1999) but only limited research has been undertaken specifically on New Zealand policies that relate to natural hazards (Berke, 1994; Berke *et al.*, 1997).

To better understand exactly what makes a "good plan" with regards to natural hazards a project was initiated by the Institute of Geological and Nuclear Sciences (GNS) to analyse the relationship between natural hazard information, its incorporation into plans and policy statements, and the eventual implementation of those plans. The project has started with an initial study, analysing how earthquake hazards are addressed within a limited number of plans and policy statements. Later this research will be broadened to incorporate more hazards and a greater geographical area.

METHOD

For this initial study, three regions in the North Island of New Zealand (Hawkes Bay, Waikato, Bay of Plenty) were selected. We analysed twenty four district plans and regional policy statements from these areas to see how each plan and policy statement accounted for earthquake hazards. This involved:

Deciding which aspects of earthquake hazards we wished to look for in plans and policy statements. For example, does the district plan list earthquakes as a hazard in the district? Are there any specific policies in the plan for earthquakes?

Reading through each plan or policy statement and using a simple coding system to denote whether or not an element was present in the plan.

Statistical analysis of the coding to determine the frequency of elements and the correlation between regional policy statements and district plans.

RESULTS

The district plans and regional policy statements from the three regions varied a great deal. There appeared to be no strong correlation between the information contained in a regional policy statement and the information contained in the plans of district councils located in the same area. Research completed by Berke *et al.*, (1999) confirm this finding. They found a gap between regional and district councils with regional and district planning operating independently, weak inter-organisational coordination, variable policy direction, and little, if any, integration. There also appears to be a similar gap between some neighbouring district councils. The earthquake information included in plans and the means of addressing the earthquake hazard often varied between adjacent district councils, even where they shared the same hazard.

While a gap appears to exist, it is also important to note that some differences in plans may reflect differences in the hazards affecting districts. Berke and French (1994) noted this when comparing how two U.S states (Florida and North Carolina) accounted for coastal hazards in different ways.

OTHER RESULTS INCLUDE:

Most district plans have a "hazards section" where information on hazards affecting the

district and methods for dealing with those hazards is relayed. Only two of the plans analysed had a different structure to this.

The incorporation of earthquake hazard information into plans and policy statements, and the way that information is used varies between the various districts and regions. In general, plans and policy statements themselves have very little information in them about the nature of earthquakes, the location of fault lines in the area or about the possible effects of earthquakes.

Earthquake hazards are in most part dealt with as part of an "all hazards" framework, and are not specifically singled out for mention in district plans (although they may be recorded in a list of hazards that affects the district). Most of the objectives, policies, methods and environmental outcomes written in plans or policy statements, were based on the "all hazards" approach. Only a few district plans that were analysed had actual policies or methods that specifically mentioned earthquakes or made some attempt to plan for their specific nature. May (1997) suggests that while planning in an "all hazards" framework has advantages (for example, it allows hazards to be incorporated into broader policies) it can also be limiting because appropriate tools vary for different hazards. For example, a warning system could be used for a flood event, but is not feasible in the case of earthquakes.

The majority of districts did not have any specific rules written in their plan for earthquakes, although many districts have rules for other hazards such as flooding, land instability, erosion and coastal hazards. Only two district councils had rules in their plan regarding earthquakes. One was a more general rule that listed earthquakes as one of the hazards to have regard for when considering an activity. The other rule made any activity located 100 metres within an identified faultline a discretionary activity.

A number of district plans make reference to the Building Act 1991 to reinforce the fact that buildings in the district must be built to specification in order to perform in an earthquake. A third of local authorities' plans and policy statements made reference to the Building Act with regards to earthquakes. Only two councils had both referred to the Building Act regarding earthquakes and had formulated some earthquake specific policies for their plans.

Finally, a number of district plans acknowledged the nature and extent of earthquakes, but felt that a future event would have such wide-reaching effects that providing planning solutions for an event like this was not always practical.

Future research will allow us to expand our results and begin to link the information found in district plans and policy statements with the processes that occur in regional and local government. From this, we will be able to identify barriers to the effective implementation of natural hazard policy and compile a set of "best practice" guidelines for natural hazards.

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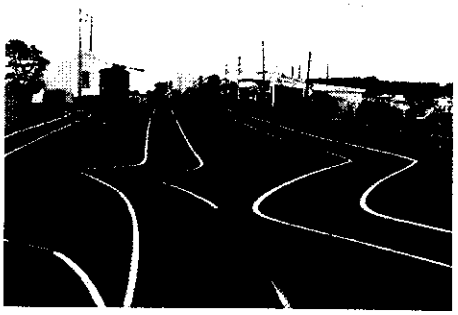

Top: Railway lines bent by the force of the 1987 Bay of Plenty earthquake. Planning for alternative transport routes after an earthquake is just one issue for consideration prior to an event such as this. (Photograph: Environment BOP.)

Above: Results of the 1987 Bay of Plenty earthquake. Damage to buildings occurred when houses shifted off piles, brickwork fell away, chimneys toppled, windows broke and structures (for example, sheds) collapsed. (Photograph: Environment BOP.)