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COMMUNICATING EARLY FLOOD WARNINGS USING INTERACTIVE MAPS AND THE INTERNET

Over the past several years, greater attention has been given to computational and analytical components of the Australian Total Flood Warning System, and less time, research and funding has been allocated to message construction and dissemination, resulting in a low success rate of effective flood warning communication in Australia. This is a common occurrence in many countries with serious flood problems.

General modes of communication such as radio, fax and television are often used to communicate warnings to the public. Due to the dynamic nature of such modes, messages are broad and rarely provide those at risk with direct information on how or if the floodwaters will affect them or specific suggestions to maximise safety. In response to this, a research project has been implemented with the aim of investigating how the public respond to flood risks that are communicated through interactive maps accessed via the Internet. By using interactive maps to communicate flood warnings and associated flood risks, and the Internet as a dissemination medium, messages can be catered to individual properties efficiently and accessed from any computer that is wired to the World Wide Web.

The interactive maps are part of a Flood Warning Information System designed as part of this research. The maps depict the expected flood extents based on corresponding river heights collected upstream and posted online by the Bureau of Meteorology. Using a computer mouse, users are able to interact with the map and obtain flood information and safety suggestions relating to the expected floodwaters. All other map information is based on past events and engineered flood maps.

In order to evaluate the Flood Warning Information System, it has been customised to the flood-prone township of Myrtleford in northeast Victoria, Australia. Twenty eight members of the small alpine community evaluated the system by participating in a usability test. In addition, participants were interviewed in regards to their satisfaction with current warning modes, radio and fax, and the clarity and overall effectiveness of the message as disseminated by these two modes.

Flood warming messages are still not reaching the wider community in Australia

W H Y ?

There is a confusion as to WHO SHOULD DISTRIBUTE THE
Option THE INTERNET AND WWW

Messages are not reaching the majority of community members at risk and MESSAGES ARE NOT UNDERSTOOD
Option GRAPHICS ARE AN ALMOST UNIVERSAL LANGUAGE

General INTEREST in flooding from the general public IS SEEMINGLY POOR
Option "SPICE IT UP" WITH AESTHETICALLY PLEASING GRAPHICS

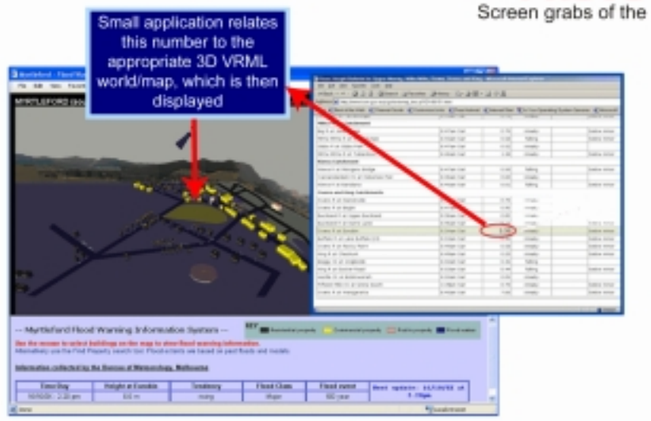
Lack of clarity as to who NEEDS to be warned?
Option PERSONALISE THE EXPERIENCE

THE FLOOD WARNING INFORMATION SYSTEM (FWIS)

- Using a spatial interface to communicate early flood warnings to the public
- Providing property specific safety information and flood warnings
- Accessed over the Internet

The Australian Total Flood Warning System
This research is mainly concerned with the communication component

>> PROTOTYPE <<
Screen grabs of the prototype FWIS



COMPARING THE FWIS TO RADIO (audio broadcast) AND FAX (text)

Thirty participants who are familiar with Myrtleford and have at least a basic level of experience with computers tested the prototype. Participants ranged in gender and age.

Study area: ***Myrtleford, Victoria, Australia***

Current modes of flood warning dissemination: ***RADIO AND FAX***

Results Summary

MAPS VIA THE FWIS

85% of participants said they would use the FWIS

- Those who indicated that they would not use the FWIS would encourage others to use it
- 75% of participants would use the Internet to access early flood warnings

RADIO

- 89% of participants feel that radio is a good mode for flood warning dissemination

Do they prefer radio to the FWIS? Most disagreed or were undecided

- Many liked the idea of receiving initial warnings via the radio and then using the FWIS to gather specific information and to confirm what they had heard

FAX

- 71% indicated that fax was a good warning mode
- They liked that the information was static hence giving them enough time to mentally process the information

75% did not know that warnings could be received by fax

- The method is liked but the technology is seemingly becoming dated