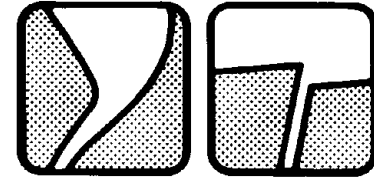


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ENSURING QUALITY MENTAL HEALTH CARE

—an invited comment

Regulations governing the provision of mental health services to disaster victims are being revised by the Federal Emergency Management Agency with a view toward decentralizing control and improving the timeliness of service delivery. Under the present system, agencies in a stricken area submit grant applications for such services to the National Institute of Mental Health for review and approval. FEMA's proposal to remove NIMH from this role may jeopardize the quality of care given to victims.

The Disaster Relief Act of 1974 (PL 93-288) provides

for professional counseling and financial assistance for relief of mental health problems resulting from disasters. Under Section 413, a president can authorize funds to local and state agencies for crisis counseling. The new directives recommend that ten days after a disaster declaration a needs assessment be conducted to verify that supplemental mental health services are necessary. The health administrator of the federal region will appoint a project officer to oversee the process.

Without any NIMH review or evaluation, funds for mental health services can be advanced by regional

CONTENTS

Mount St. Helens Map	2	On the Line	6
Planning Award	3	Center Publications	8
Washington Update	4	Grants	8
Conferences	5	Recent Publications	10

FEMA directors on a prorated basis while a six-month project is being developed and the proper documents prepared. Since regional NIMH offices are being shut down by budget cutbacks, the trained mental health professionals with disaster experience are no longer immediately on hand. The health administrator may be forced to appoint a project officer unfamiliar with some or all of the demands of the task at hand.

FEMA and NIMH officials agree that the new procedure will speed up service delivery, but disagree on the advisability of writing NIMH out of the script. Calvin Frederick, Chief of Disaster Assistance and Emergency Mental Health at NIMH, expresses these concerns: "The proposed change in regulations pertaining to NIMH would have a deleterious effect in that it would remove the quality control insured by a proper grant review by professionals who are experienced in this mental health issue."

FEMA Director of Crisis Services, Richard Roebuck, however, thinks differently: "Greater decentralization will place more responsibility on the regional offices and speed up the funding process. Technical assistance from NIMH or other private and public mental health authorities can be found at the local level."

Joseph del Monte, Director of Individual Assistance Programs for FEMA Region IX, has confidence that the new regulations will improve service to the community: "Decentralization will provide incentives to the states to work more closely with FEMA. By working more closely with their local and regional disaster systems, mental health professionals will be able to bring more effective services to disaster victims."

While the intent of the new FEMA directives is commendable, the exclusion of NIMH from the process is troubling. The needs assessment, review and monitoring can be done at the local level, but it should be done by professionals experienced with disasters and their attendant mental health crises and problems. The new directives should require that the project officer be such a professional, and that the needs assessment be done by a team that includes an experienced mental health counselor.

Norma S. Gordon
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Los Angeles, California

Natural Hazards Observer, Natural Hazards Research and Applications Information Center, Institute of Behavioral Science, Building #6, University of Colorado, Boulder, Colorado 80309.

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Application to mail at second-class postage rates pending at Boulder, Colorado.

MORE MAPS

A new topographic map of the Mount St. Helens area clearly depicts the effects of the violent eruption of May 18, 1980: the new crater and dome; landslides and debris flows; changes in water bodies, especially Spirit Lake; and the mudflows on the Muddy, Toutle and Cowlitz Rivers. The 36 × 40-inch map, done at a scale of 1:100,000, includes color photographs of the eruption and its aftereffects. It was published by the U.S. Geological Survey through a cooperative effort with the U.S. Forest Service and the Washington State Department of Natural Resources. "Mount St. Helens and Vicinity, March 1981" may be purchased for \$1.00 from *Branch of Distribution, U.S. Geological Survey, Box 25286, Federal Center, Denver, CO 80225, or from most USGS map dealers.*

The USGS has also recently released seismicity maps of Delaware, Maryland, New Hampshire, Pennsylvania, South Carolina, Vermont and West Virginia, including dates, locations and magnitudes of earthquakes known to have occurred since the end of the 17th century. Each of the maps measures at least 24 × 30 inches, includes marginal text and tables, and is available for \$.75 from *USGS Eastern Branch of Distribution, Maps Section, 1200 South Eads Street, Arlington, VA 22202. Specify map identification number: Delaware and Maryland, MF-1257; New Hampshire, MF-1261; Pennsylvania, MF-1280; South Carolina, MF-1225; Vermont, MF-1262; and West Virginia, MF-1226.*

The boundaries of the major river basins in the United States are delineated on a national scope for the first time on the "Hydrologic Unit Map of the United States." Previous hydrologic maps were issued only on a state-by-state basis. Designed for use in water resources management activities, the map provides a standard geographical framework for detailed water and land resource planning. At a scale of 1:2,500,000 and printed on two separate 41 × 52-inch sheets, it is available for \$3.00 from *U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202.*



WINNING THROUGH ANTICIPATION

The American Planning Association has given its 1981 Outstanding Planning Award to the U.S. Geological Survey for its San Francisco Bay region environmental and resources planning study. Intended to provide and interpret earth science information for planners and decision makers, the study was begun in 1970 as a demonstration project. Joint support came from the USGS and the Department of Housing and Urban Development; the Association of Bay Area Governments and William Spangle and Associates participated in the study, coordinating the efforts of various regional planning agencies with those of local governments.

The project required interdisciplinary teams to communicate and translate scientific information to non-scientists. One of the most important and helpful products of the project was the assistance provided to governmental entities in the nine-county area on planning to avoid damages from geologic hazards or to reduce them. According to William Kockelman, representative for the USGS Office of Earth Sciences Applications in Menlo Park, the study methods are applicable to any city, county or region that wishes to plan for orderly development while protecting resources, ensuring public safety, and minimizing environmental degradation.

In its 11 years, the project has produced at least 150 reports (many of which have been announced in the *Observer*) and maps on a vast number of topics: reduction of flood and earthquake hazards, unstable slopes, mineral and water resources management, erosion and sedimentation problems, engineering characteristics of hillside and lowland areas, and various other environmental problems.

For more information on this highly touted project, contact William J. Kockelman, U.S. Geological Survey, 345 Middlefield Road, Mailstop 22, Menlo Park, CA 94024, (415) 323-8111.

SOCIAL SCIENCE DISASTER RESEARCH

Proceedings of a conference held in May, 1979 (see *Observer*, Vol. III, No. 4, p. 5) have been published as *Social Science and Natural Hazards*, edited by James D. Wright and Peter H. Rossi. The meeting provided a forum for the presentation of the results of two studies undertaken by the University of Massachusetts Social and Demographic Research Institute (SADRI), and for discussion of the findings by those in attendance—over 40 persons involved in the study and/or management of societal responses to natural disasters.

The first project determined that long-term impacts of natural disasters on population and housing growth trends in communities are negligible (see *Observer*, Vol. II, No. 4, p. 4, and Vol. IV, No. 2, p. 8). The major conclusion of the second project, a survey of over 2,000 persons in policy-making positions in 20 states and 100 local communities, was that problems relating to natural disasters have a low political priority. Subsequent discussion at the conference focused on the theories behind and methods of the two studies, the

need for an improved data base for the conduct of research on disasters, and the effect of social research on the politics of disaster response.

The third segment of the conference, and of the book, is a retrospective evaluation of three significant research “traditions”: that of the National Academy of Sciences-National Research Council, of the Disaster Research Center at The Ohio State University, and of the Assessment of Research on Natural Hazards at the University of Colorado. Debate considers the worth of continuing to examine natural disasters by the case study method, and how social science research can or should affect public policy.

Obtain *Social Science and Natural Hazards* from *Abt Books*, 55 Wheeler Street, Cambridge, MS 02138, (617) 492-7100. \$24.00.

NOT IN YOUR FUNK AND WAGNALLS

A friendly mole at the U.S. Geological Survey furnished us with a list of research definitions set down by an unknown genius there who had perused one too many scientific papers. To spare others further struggle with the lingo, we feel compelled to publish the list here and now.

- “*It has long been known*”—I haven’t bothered to look up the reference
- “*Of great theoretical and practical importance*”—Interesting to me
- “*Though it has not been possible to provide definite answers*”—The experiments didn’t work out, but I need the publicity
- “*Three of the samples were chosen for further study*”—The results of the others didn’t make sense and were ignored
- “*Typical results are shown*”—The best results are shown
- “*These results will be reported at a later date*”—I might get around to this sometime
- “*Presumably over longer times*”—I didn’t take the time to find out
- “*The most reliable results are Smith’s*”—He was a student of mine
- “*It is believed that*”—I think
- “*It is generally believed that*”—A couple of other folks think so too
- “*It might be argued that*”—I have such a great answer to this objection that I shall now raise it
- “*Much additional work is needed before complete understanding*”—I don’t get it
- “*Correct within an order of magnitude*”—Wrong
- “*It is hoped that this work will stimulate further studies*”—This paper isn’t very good, but neither are any others on this subject
- “*Thanks are due to Joe Glotz for help with the experiments and to Jane Jones for valuable discussions*”—Glotz did the work and Jones explained to me what it meant

NEW CRITERIA FOR FEDERAL WATER PROJECTS

The President's Cabinet Council on Natural Resources and the Environment has set forth four principles to guide the planning and implementation of water projects in which the federal government is involved:

- National economic development is the appropriate objective for all projects; the greatest net economic benefit determines the most desirable project.
- State and local concerns should be considered, as should international ones, beyond the goal of national economic development.
- The costs of all services produced by water projects should be borne by the beneficiaries of those services.
- Water project services should be provided by the public or private organization that can do so at the lowest cost.

Still to come from the Council are principles on specific financial and cost-sharing arrangements. The Council has eliminated as an appropriate objective any consideration of the environmental impacts of water projects; however, such a consideration may be moot since the implication of the new principles appears to be virtually no water project starts during the Reagan Administration.

INSURANCE RATE INCREASES

Effective October 1, 1981, the Federal Insurance Administration has raised the chargeable rates for structures in communities still in the emergency phase of the National Flood Insurance Program. The emergency phase allows subsidized (chargeable) rates to be assessed of policyholders until more precise actuarial rates can be determined after mapping. Never before increased in over a decade of operations, the emergency program rates for residences will rise by 15¢ on both structure and contents per year per \$100 coverage; the old rate was 25¢ for structure and 35¢ for contents. For all other buildings, the rate will be 50¢ for structure and \$1.00 for contents per year per \$100 coverage.

Of the two million policies sold each year, 62% are charged at the subsidized rates. Since an average of \$125 is needed annually to cover the costs of each subsidized policy, and since an average of \$88 is paid for the annual premium, the FIA felt the need to raise the rates in order to meet the goal of fiscal self-sufficiency for the NFIP in the near future. Barring exceptionally heavy flooding next year, the rate increase should reduce the NFIP's drain on the U.S. Treasury by \$60 million.

RIVER BASIN COMMISSIONS UP THE SPOUT

President Reagan signed Executive Order 12319 on September 9, 1981, and thereby terminated the activities of six river basin commissions. Originally established by the Water Resources Planning Act of 1965, five commissions ceased operations on September 30—the Pacific Northwest RBC, the Great Lakes BC, the Ohio RBC, the New England RBC, and the Missouri RBC. The sixth, the Upper Mississippi RBC, will stop rolling along on December 31.

The executive order directs all federal agencies to cooperate with the commissions and member states to carry out an orderly transition of commission activities to states, if the states so elect. Assets of commissions are to be transferred to member states, or to such entities as the states designate, to be used for water and land resources planning. Federal agency members of the commissions are to continue coordination and cooperation in state and inter-state basin planning efforts. The five commissions terminated in September have found successor organizations, for instance, the New England Governors' Conference, to carry on much work. It is anticipated that the Upper Mississippi RBC will do the same.



ALTERNATE ROUTE FOR WATER PROJECTS

Executive Order 12322, signed by the President on September 17, 1981, directs that any proposal or plan for a federal or federally assisted water resources project must be submitted to the Office of Management and Budget before introduction to Congress or any of its committees. OMB will examine all plans and assess them for consistency with: 1) the policy and programs of the administration; 2) the Principles and Standards for Water and Related Land Resources Planning, or other such guidelines that may be issued; and 3) other applicable laws or regulations relevant to the planning process.

The new executive order revokes Executive Order 12113, which enjoined the Water Resources Council to subject all water project proposals to a technical review to determine the degree to which the Principles and Standards were met. The WRC never actually did that, however, because Congress appropriated no money for the performance of the task.

LANDMARK LAWSUITS

In an unprecedented move early this summer, the Federal Emergency Management Agency sued two Louisiana parishes to recover more than \$93 million paid out in federal flood insurance claims. The suits maintain that negligence by St. Bernard and Jefferson Parishes, and by builders, developers, consultants and several levee boards within the parishes, resulted in flood damages in 1978 and 1980 for which the government paid claims.

The suit alleges that the defendants failed to plan and design proper drainage systems, failed to enforce elevation and floodproofing requirements of the National Flood Insurance Program, and allowed new developments to be built without provisions for flood water control or retention. In addition to damages, the suits ask the court to order that the parishes improve their pumps, canals, ditches and culverts, and take several other measures to control flooding and stop development in flood-prone areas.



CONFERENCES

Disasters: Problems and Solutions in Their Management. Florida Chapter of the American College of Emergency Physicians. Kissimmee, Florida: January 25-27, 1982. The conference will bring together physicians, firefighters, police, emergency room personnel, nurses, and representatives of federal, state and local emergency service agencies to analyze natural and human-caused disasters from the past year with an eye toward improving planning for future ones. Topics to be discussed include using a triage system, assessing emergency medical needs, organizing a crisis management team, community disaster planning, and dealing with the news media during a disaster. More information is available from *Florida Chapter, ACEP, Disaster Conference, 600 Courtland Street, Suite 420, Orlando, FL 32804, (305) 628-4800.*

Soil Dynamics and Earthquake Engineering. International Journal on Soil Dynamics and Earthquake Engineering, International Society for Computational Methods in Engineering. Southampton, England: July 13-15, 1982. The meeting will provide a forum for the presentation and discussion of new and advanced ideas in soil dynamics and earthquake engineering. Emphasis will be placed on problem-solving techniques in geology and seismology, soil and rock dynamics, earthquake risk analysis, and soil/structure interaction. Case studies of earthquake engineering projects will be examined. Papers presented at the conference will be published in a proceedings volume. For information, contact *C. Brebbia, Conference Secretary, University of Southampton, Southampton, United Kingdom, (0703) 559122, x 2345.*

Status of Volcanic Prediction Capabilities and Emergency Response Options in Volcanic Hazard Zones of California. California Department of Conservation, Division of Mines and Geology, and the State Office of Emergency Services. Sacramento, California: December 3-4, 1981. The latest developments in forecasting volcanic activity, its application to volcanic zones in California, and preparedness options recognized from Mount St. Helens will be explored. Presentations will be made on the following topics: seismic monitoring as a prediction tool; human response to eruptions; impacts of Mount St. Helens' eruption on industry and local, state and federal agencies; and methods of volcanic hazards assessment. Additional details are available from *Science and the Environment, University of California Extension, Davis, CA 95616, (916) 752-0880.*

Third International Conference on Microzonation for Safer Construction—Research and Application. National Science Foundation, UNESCO, University of Washington, American Institute of Architects, Earthquake Engineering Research Institute, Seismological Society of America. Seattle: June 28-July 1, 1982. The conference is intended to bring together persons from diverse disciplines to summarize the state of the art concerning techniques used worldwide to zone regions for earthquake impacts, and to identify research needs. Topics to be addressed include seismicity and global tectonics, soil and geological effects on sites, structural design considerations for earthquake effects, geophysical and geological investigation techniques for microzonation, urban planning for seismic effects, socioeconomic and insurance effects, and the responsibilities of local, state and federal governments. For information, contact *Mehmet A. Sherif, Conference Chairman, 132 More Hall, FX-10, University of Washington, Seattle, WA 98195, (206) 543-6777.*



ON THE LINE

STATES ILL-PREPARED FOR MANY RAINY DAYS

In order to assess current conditions and recommend improved emergency management standards and procedures, the National Governors' Association has been reviewing and analyzing state emergency legislation, organization, vulnerability analyses, emergency management programs, and federal-state cooperative funding agreements. Materials received from 26 states, to date, and other records show interesting patterns:

- All state disaster laws require a state emergency office and a preparedness plan coordinated by that office, but few specify participation by all agencies in developing the plan, or investing the accepted plan with the force of the law.
- About ten states have changed the name of the emergency office to (State) Emergency Management Agency, but few are specific about its responsibility for all risks—attack, man-made and natural. Those that allude legislatively to disaster prevention, mitigation and recovery are vague about authorities, responsibilities and coordination.
- Twenty-one state and territorial emergency offices operate under the adjutant general, 18 are in civilian divisions such as public safety, 15 are in the governor's office, two are in the state police department and one is under a state emergency council.
- Fewer than half the states have emergency contingency funds; such funds range from \$50,000 to \$2,500,000. Of these, many restrict the governor's access to, or use of the funds.
- Only two states appear to be actively seeking earmarked state or private sources of funding, with others totally dependent on categorical contract agreements from FEMA that must be matched separately by state funds. Federal and state budget cycles are often different and administrative paperwork is excessive. Pilot consolidated agreements are being tested in five states; however, few are seeking management safety or program expansion through multiple funding sources, even though program demands are proliferating.
- Many state vulnerability analyses cover natural hazards only, and most are out of date. Many rely on hazards data from the '60s and early '70s. Most provide some detail about the major natural hazard of the state, with only cursory review of other risks. Only one addresses the full range of natural, man-made and attack risks in the state.

- Few states maintain retrievable information on all-risk disaster and emergency incidence, or break-out management data on deaths, injuries, damages, economic effects, state and local responses and recovery costs, mitigation initiatives or improvement recommendations. They are hampered in making solid cases to their legislatures or the federal government for appropriate support, as well as in comparing disaster incidence or effects with other states since there is little standardization of definitions or descriptors.

Because of this state of affairs, NGA is working with state emergency directors, the National Emergency Management Association, the Federal Emergency Management Agency and the General Accounting Office to develop guidance for improved federal and state



legislation, vulnerability analysis, program development, federal-state agreements and data banking. A standardized incident report form for data banking and management review has been developed and is being evaluated by states and FEMA. We have completed a state *Comprehensive Emergency Management Review Leader's Guide* that will be printed this winter, to be available to governors' offices through NGA, and to others through FEMA or GPO. The project will be completed by April, 1982.

Hilary Whittaker, Director
Emergency Management Project
National Governors' Association

INTERSTATE FLOOD PLAINS POSE PROBLEMS

Because of a weak and fragmented legal authority structure, present programs are inadequate to manage effectively the Missouri River flood plains in Iowa, Kansas, Missouri, Nebraska and South Dakota. That was the main conclusion of a detailed analysis of federal and state statutes and court decisions done for the Missouri River Basin Commission by Peter N. Davis, University of Missouri Law School.

Beginning with the constitutionally derived federal authority over the nation's waterways—the navigation, commerce and spending powers and executive orders—the *Missouri River Flood Plain Legal and Institutional Framework Study* explores the means by which federal, state and local governments have legally undertaken differing and sometimes conflicting approaches to the use of the Missouri River and its flood plain. The report describes the evolution of federally subsidized flood insurance and its companion regulations, as well as environmental legislation such as the Clean Water Act, the Federal Water Pollution Control Act, and the National Environmental Policy Act, all of which have affected the course of flood plain management in the U.S.

At the state level, flood plain management is accomplished primarily by zoning, a function of the police power reserved to the states. A potent barrier to state flood plain management, however, is the delegation to cities and counties of "home rule" authority over local matters. Conflicts between the provisions of state and local statutes have been resolved differently by courts in each of the five study states, if at all.

Interstate compacts, uniform state legislation, federally chartered corporations, and informal agreements among states are some of the means available for achieving interstate cooperation when flood plain boundaries cross state lines. Legal questions still remain about the relative authority of a compact, a state constitution, and the U.S. Congress, and about whether interpretation of a compact may be sought in a lower federal court.



In a new two-year study, alternative legal and institutional mechanisms will be considered which should enable the five states to adopt a unified and coordinated approach to managing Missouri River flood plains.

Single copies of the executive summary of *Missouri River Flood Plain Legal and Institutional Framework Study* are available free from *Missouri Basin States Association, Suite 515, 10050 Regency Circle, Omaha, NB 68114.*

SMALL TOWNS MAKE GOOD

A severe tornado struck three Connecticut communities on October 3, 1979, killing three, injuring over 100, and inflicting \$250 million in damages. In just two years, however, Windsor Locks, Suffield and Poquonock have made a notable recovery. *The Phoenix Study: A Community Response to Disaster* is an excellent case study of how the Windsor area organized a recovery center and set about rebuilding the structures and lives torn up by the twister. The study also reports findings from a survey of victims on their economic, physical and psychological needs following the disaster.

Five miles north of Hartford, the Windsor area has a population of 27,000, about half of whom are white-collar professionals, and is predominantly built up with single-family residences. Many of those residences were destroyed by the tornado, as was the business area of Windsor Locks. By the following morning, the town of Windsor established a central information office on the grounds of a Poquonock school, and this evolved in a few weeks into the Tornado Recovery Center, a haven designed to meet all victims' needs in one place, and the nerve center for the complex recovery efforts.

The study describes all the activities of the Center in some detail, analyzes the findings from the survey conducted by professional staff at the Center, and then presents vital lessons learned and insights gained in the experience:

- The great sense of isolation felt by victims can be alleviated by a central place to go for help and for comfort from other victims.
- The victims' mental and physical exhaustion left them more susceptible to emotional change—both increased and decreased ability to cope—and the availability of therapeutic intervention was conducive to increasing that ability.
- The massive outpouring of volunteer help and materials wanes after a few weeks and can actually turn into a backlash—there grew a sense in some parts of the communities that the victims actually profited from the disaster.

Appendices provide ample documentation to the survey methods, and show some of the tools—a newsletter, for instance—used by the Recovery Center to get its job done.

A limited number of copies are available for \$3.00; make checks payable to the *Town of Windsor, Town Hall, Windsor, CT 06095.*



UNIQUE

STOCKING

STUFFERS

Just in time to help you meet the challenge of holiday gift-giving, the Center has issued one new monograph, a special publication, and two new working papers.

Four Communities Under Ash, by Richard A. Warwick et al., examines the effects of Mount St. Helens' ashfall on four different communities in Washington and Montana. Monograph #34 describes the immediate impacts of the ash on the communities—Ellensburg, Ritzville and Cheney, Washington, and Missoula, Montana—and assesses the responses of each locale to the exceptional circumstances. The study analyzes the relationship between ash depth and the various impacts and recovery times. Social consequences of the ashfall are discussed, and suggestions offered on future research to expand our concepts of volcanic risk and to improve our methods of risk assessment. The monograph is 150 pages long and sells for \$8.00.

Special Publication #1, *Population and Housing in Special Studies Zones*, grew out of a larger study of the impact of California's Alquist-Priolo Special Studies Zones on the purchasing patterns of home buyers. The Alquist-Priolo zones encompass areas that contain active or potentially active fault zones and may therefore

be at risk to earthquake damage. This special publication analyzes the population and housing composition of these areas, and compares special studies zones residents to the general population of California on economic, ethnic and other demographic characteristics. The findings have bearing on a geologically differentiated lending policy. Written by Claudia Grow and Risa Palm, SP #1 is 51 pages long and costs \$3.00.

Notices, Watches and Warnings: An Appraisal of the U.S.G.S.'s Warning System With a Case Study from Kodiak Alaska, Working Paper #42, was written by Thomas Saarinen. One of the U.S. Geological Survey's first hazard notifications was issued in 1977 to public officials in Kodiak, Alaska, about a potential landslide near the city. This paper examines the Survey's procedures, the responses of public officials, and the effects of both on citizen perception of the hazard. The paper finds a need for the Survey to determine the extent of its involvement in warning situations, and to consider the needs and perceptions of the communities it is warning. WP #42 is 91 pages long and sells for \$4.50.

Emergency Response to Mt. St. Helens' Eruption: March 20 to April 10, 1980, by John H. Sorensen, is the final product from a Quick Response Study funded by the Information Center. The situation in the weeks previous to the cataclysm of May 18th provided a rare opportunity to study the methods used by public officials and decision makers to assess the risk of eruption and the potential damages, and the ways in which they warned the public. This working paper identifies the key actors and organizations in the response, traces the information flow among those actors and from them to the public, indicates persistent problems faced by emergency personnel, and analyzes how all affected parties perceived and estimated the risks from a future eruption. Working Paper #43 is 70 pages long and costs \$4.50.

GRANTS



Earthquake insurance. "A Generalized and Global Study of Earthquake Damage and Insurance Risk," National Science Foundation, \$154,367, 2 years. Principal Investigator: *Haresh C. Shah, Department of Civil Engineering, Stanford University, Stanford, CA 94305, (415) 497-3074.*

The study is intended to convert current knowledge about seismic risk analysis, insurance risk and damage estimation into practical tools for use by planners, policy makers, insurance analysts and engineers. Three tasks will be undertaken: (1) development of loss assessment procedures; (2) development of algorithms for assessing risk for insurance and investment purposes; and (3) analysis of the current status of earthquake insurance with suggestions for improved uses of it.

FEMA flood insurance studies. "Flood Insurance Studies Research," Federal Emergency Management Agency, \$150,000, 30 months. Chairman: *Robert L. Smith, University of Kansas, Lawrence, KS;* Project manager: *James R. Smith, Building Research Advisory Board, National Research Council, 2102 Constitution Avenue, N.W., Washington, DC 20418, (202) 389-6981.*

The NRC will review for FEMA the flood insurance study research work plan developed by its research contractor. Additionally, it will assist in identifying the critical and minimum federal, state, and local information needs that must be accommodated in flood insurance studies, techniques and products if the National Flood Insurance Program and community flood plain management programs are to succeed. Consideration will be given to whether improved methods are technically and scientifically acceptable, meet critical and minimum National Flood Insurance and community needs, and are legally defensible.

Earthquake engineering research review. "Accomplishments and Opportunities in Earthquake Engineering Research," National Science Foundation, \$170,000, 12 months. Project manager: *O. Allen Israelson, National Research Council, NAS-NAE, Washington, DC 20418, (202) 389-6851.*

The progress and state-of-the-art in each of the major technical areas of earthquake engineering research will be determined during this project, and promising future research in the technical and societal subject areas will be identified. An 11-member committee and a number of working groups will review accomplishments and recommend future research in earthquake engineering fields including solid and rock mechanics, earth structures, structural dynamics, engineering and architectural design, fluid dynamics (reservoirs, tanks, tsunamis), and ground motion. The committee and its working groups will also review research accomplishments in other countries, particularly Japan, and suggest benefits to the U.S. and other countries from additional exchanges of information and experience. Earthquake engineering education, its progress and opportunities for improvements, will also be a subject for study by the committee.

Computer models for flood insurance studies. "Hydrodynamic Computer Models for Flood Insurance Studies," Federal Emergency Management Agency, \$130,000, 23 months. Chairman: *John F. Kennedy, Institute of Hydraulic Research, University of Iowa, Iowa City, IA;* Project manager: *James R. Smith, Building Research Advisory Board, National Research Council, 2101 Constitution Avenue, N.W., Washington, DC 20418, (202) 389-6981.*

This study will (1) review available hydrodynamic flood routing models which provide for either or both the variable flows and variable channels typical of sudden floods in erodable channels; (2) assess the applicability of a number of those models to the National Flood Insurance Program; (3) if none are applicable, suggest alternative methods of compensating for the effect of erodable channels; (4) assess the applicability to the National Flood Insurance Program of a number of existing computer models utilizing erodable channel hydraulics; and (5) assess the conditions and criteria justifying the use of the above-mentioned computer models, singly or in combination.

Committee on natural disasters. "Post-Event Investigation to Maximize Learning from Destructive Natural Disasters," National Science Foundation, \$115,500, 12 months. Committee chairman: *J.E. Cermak, Colorado State University, Fort Collins, CO;* Executive secretary: *O. Allen Israelson, National Research Council, NAS-NAE, Washington, DC 20418, (202) 389-6851.*

The goal of this program is to make possible the collection of perishable information after a natural disaster (such as earthquake) causes sudden and widespread destruction and disruption of the economic and social

structure of a region. Such a disaster is a test of facilities of varying ages and quality which were designed and built to a variety of codes, standards, and engineering and planning principles. The National Academy of Engineering and National Academy of Sciences are in a position to organize and dispatch interdisciplinary teams to collect and publish information which can provide a basis for in-depth studies at a later time. Such an arrangement is particularly of value for disasters in foreign countries.

Mudflows and the National Flood Insurance Program. "Study of Methodologies for Predicting Mudflow Areas," Federal Emergency Management Agency, \$85,924, 16 months. Chairman: *Russell H. Campbell, U.S. Geological Survey;* Project manager: *Abram B. Bernstein, Building Research Advisory Board, National Research Council, 2101 Constitution Avenue, N.W., Washington, DC 20418, (202) 389-6982.*

The continuum of phenomena ranging from floods to landslides, within which different kinds of mudflows are found, will be considered by this project. Criteria will be identified for distinguishing the mudflows from the other phenomena, and for assessing the appropriateness of methods that might be used to identify areas of mudflow hazard. The study will (1) assess the validity of the method used by the Los Angeles County Flood Control District for determining the mudflow hazard in Sierra Madre, California; (2) determine whether those methods, if valid, are likely to be applicable in other geographical areas; (3) identify any other mudflow prediction methods that may exist; and (4) make recommendations concerning methods for delineating areas of mudflow hazard.

Coastal flooding and the National Flood Insurance Program. "Study of Coastal Flooding From Hurricanes," Federal Emergency Management Agency, \$275,000, 14 months. Chairman: *Feenan D. Jennings, Texas A&M University, College Station, TX;* Project manager: *Abram B. Bernstein, Building Research Advisory Board, National Research Council, 2101 Constitution Avenue, N.W., Washington, DC 20418, (202) 389-6982.*

A review of FEMA's storm surge model for estimating potential coastal flooding from hurricanes will be the main focus of this study. In addition, the project will provide FEMA with assistance and guidance in the objective resolution of the appeal by Lee County, Florida, of the base flood elevations proposed by FEMA based on that model. The model uses the joint probability approach to assess the risk associated with the entire population of hurricanes capable of threatening a particular location. The study will address the statistical assumptions made in determining this synthetic population, the representatives of the historical data used, and the modeling of the dynamics of individual storms.

LOCAL DISASTER MANAGEMENT

The United States Conference of Mayors has recently published its findings from a two-year investigation of all aspects of emergency management at the local level. *Emergency Management: A Mayor's Manual* pinpoints important elements that serve as the basis for an effective and comprehensive management program. After a short introductory section on the mayor's unique role in organizing and guiding emergency preparedness and response, the 28-page manual addresses three areas at some length: 1) pre-disaster emergency functions, 2) emergency operations, and 3) post disaster recovery.

Chapter 1 describes how to assess hazard risk, how to lessen the risk, planning for emergency response, and involving the private sector in the planning and preparedness efforts. Chapter 2 details communication problems and solutions, necessities at an emergency operations center, and the helpfulness of mutual aid agreements with other government entities. Chapter 3 covers recovery operations and the types of federal disaster assistance.

Three appendices list U.S. Conference of Mayors Policy Resolutions on various natural and man-made hazards (A), FEMA activities and regional offices (B), and state capabilities and emergency management offices (C).

The *Manual* is available in limited quantities, at no cost, from the *Emergency Preparedness Project, U.S. Conference of Mayors, 1620 Eye Street, N.W., Washington, DC 20006, (202) 293-7330.*

RECENT PUBLICATIONS

Mount St. Helens, the 1980 Eruptions: A Bibliography. Caroline D. Harnly and David A. Tyckoson. *Public Administration Series Bibliography* #P-786. August, 1981. 42 pp. \$6.00. Order from Vance Bibliographies, P.O. Box 229, Monticello, IL 61856.

Over 500 citations to books, scientific articles, popular magazines, and government documents have been listed in this bibliography. The contents are arranged under such subject headings as social and health effects, chemical studies, and the impact on industrial and commercial ventures. For example, one entry describes how volcanic ash disrupted the functioning of automatic tellers in the fallout area. Brief annotations help to clarify the content of some materials.

Transition Housing for Victims of Disasters. Disaster Assistance Manual—Volume I. U.S. Department of State, Agency for International Development, Office of U.S. Foreign Disaster Assistance, Office of Housing. 1981. 230 pp. A very limited number of copies are available upon written request from AID/OFDA, Department of State Building, Room 1262-A, Washington, DC 20523.

This publication combines valuable information about the organization of post-disaster recovery projects with "how-to" structural tips for building or strengthening low-cost transitional family housing in hazard-prone areas. Primarily designed for AID officials, the guidebook should be useful to other agencies concerned with reconstruction problems following floods, hurricanes, and earthquakes. Sections are included on the financing of loan systems, the progressive upgrading of a core housing plan, and estimating a housing project budget.

Map Data Catalog. Department of the Interior, U.S. Geological Survey, National Cartographic Information Center (NCIC). 1980. 48 pp. \$7.00 (\$8.75 outside the U.S.). For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock #024-001-03360-7.

This catalog describes the wide range of mapping byproducts and services available from the NCIC. Only a few of the products are stocked, since most of them need to be custom-made to suit the user's special needs. A sample of each product is accompanied by a brief description of its potential use and appropriate ordering information. Products listed include color separates that depict a special topographic feature; out-of-print maps; digital terrain maps; maps available on microfilm; land use, land cover, and slope maps; and a variety of aerial and space imagery formats. There is also a description of computerized search and inquiry systems which aid the user in locating imagery for a specific area.

Flood Plain Management: Administrative Problems and Public Responses. E. Jackson Baur and Jack M. Weller. Contribution #206. University of Kansas, Water Resources Research Institute. 1979. 53 pp. Available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. Stock #PB80-128895. Paper copy: \$7.00. Microfiche: \$3.50.

The mayors of medium-size cities (5,000 to 100,000 residents) in four mid-western states were surveyed in order to discover the types of participation by organized interest groups in decisions about flood plain management and use. It was found that most communities were participating in the flood insurance program to the fullest extent their circumstances permitted, although compliance in a few instances was achieved only through legal inducements and the threat of penalties. In general, municipal officials were favorable to the insurance program and both public opinion and special interest groups were supportive.

Housing Survey for Disaster Relief and Preparedness—Latin America. U.S. Department of State, Agency for International Development, Office of U.S. Foreign Disaster Assistance. 1981. 141 pp. A very limited number of copies are available upon written request from AID/OFDA, Department of State Building, Room 1262-A, Washington, DC 20523.

Ten Central and South American nations that have received U.S. relief assistance for natural disasters were surveyed with respect to social and technological issues that affect disaster reconstruction. Each nation is examined for its industrial capacity to produce the construction materials needed for shelter projects; the institutions involved in financing and building low-cost housing; and, when information is available, the variety and acceptability of emergency shelters provided for past disasters. A second part of the report reviews structural mitigation techniques for seismic and wind-resistant housing. Criteria surveyed in this context include siting, design, materials and building codes.

"The Delivery of Mental Health Services in Community Disasters: An Outline of Research Findings." Barbara Baisden and E.L. Quarantelli. *Journal of Community Psychology* 9 (1981): 195-203.

Through literature reviews, case studies, survey questionnaires and interviews, the Disaster Research Center at The Ohio State University has identified the nature and extent of mental health services provided in catastrophes. Concluding that the social service delivery model is more appropriate than the medical treatment approach for providing such assistance, the study emphasizes that although some severe emotional problems do result from disasters, most of the problems encountered by victims are those involving everyday activities and needs that have been made difficult by the disaster. The realistic community planning requirements are, therefore, for availability after a disaster of a broad range of human and social services of which standard mental health treatment would be one, but not necessarily the most crucial, part.

Drought and Ground-Water Levels in Northern Wisconsin. Alexander Zaporozec. *Geoscience Wisconsin, Volume 5.* 1980. 92 pp. \$5.00. Available from the University of Wisconsin-Extension, Geological and Natural History Survey, 1815 University Avenue, Madison, WI 53706, (608) 262-1705.

After the 1976 drought, many well owners redrilled their dry wells only to discover that the previous depths had been insufficient to provide dependable water supplies even if the drought had not occurred. Subsequently, a study was carried out to determine the historical drought periods in Wisconsin's history and their relation to ground water levels. Based on the premise that water levels in areas with similar hydrological characteristics will exhibit normal probability distributions, a method was developed to estimate the lowest expected ground water levels. By using this information, wells can be designed efficiently to avoid the effects of future droughts.

Nonstructural Approaches to the Management of the Snohomish River Basin Flood Hazard. William B. Beyers, et al. Prepared for the U.S. Army Corps of Engineers, Seattle District. October 1980. 295 pp. Available for \$17.00 (paper) or \$3.50 (microfiche) from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. Stock #ADA 094981/8.

This report analyzes ways to control existing and possible future flood problems in the Snohomish basin in Washington through nonstructural methods, for instance, land use controls and small-scale modifications to buildings and property. Specific recommendations are made for control strategies in each of the eight subregions considered, information needed for the implementation of the strategies is indicated, and the responsibilities of various governmental entities are outlined.

Dynamics of Structures—A Primer. Anil K. Chopra. *Earthquake Engineering Research Institute.* 1981. 126 pp. \$6.00. Order from the Earthquake Engineering Research Institute, 2620 Telegraph Avenue, Berkeley, CA 94704.

With funds from the National Science Foundation, EERI is publishing a monograph series dealing with the criteria and structural design procedures applicable to seismically active regions. Written for the engineer who has not specialized in structural dynamics, this monograph (the second in the series) presents basic concepts necessary to understand how structures respond to seismically induced ground shaking. A relatively sophisticated knowledge of engineering mathematics is assumed.

Regulations to Reduce Coastal Erosion Losses. D.A. Yanggen. Prepared for the Wisconsin Coastal Management Program. 1981. 99 pp. Single copies are available free from the Environmental Resources Unit, University of Wisconsin-Extension, 1815 University Avenue, Madison, WI 53706, (608) 262-0020.

Designed for local planners and officials, this report discusses the role of local zoning and subdivision regulations in reducing monetary losses along Wisconsin's Great Lakes coasts. Part I describes the natural erosion processes and human intervention that can increase or decrease the hazard, and methods for estimating damages from erosion. Ways of adjusting land use to the erosion hazards and the legal considerations before selecting a regulatory policy are also examined. Part II presents and explains some erosion hazard provisions that can be included in zoning and subdivision ordinances.

Bibliography of Recent Works on Climate Variation and its Effects in Historic Times. Robert H. Claxton. *Studies in the Social Sciences, West Georgia College.* 37 pp. \$2.00. Copies are available from Robert H. Claxton, Department of History, West Georgia College, Carrollton, GA 30118, (404) 834-1405. Make checks payable to *Studies in the Social Sciences.*

One thousand titles of books, conference papers, dissertations and articles from periodicals are collected in this bibliography. Many perspectives on past effects of climate variation are covered, including climate and agriculture, long-term weather records, the impacts of natural hazards, biometeorology, and weather modification. Entries are listed alphabetically, by author.

Analyzing the Impact of Flood Plain Regulations upon Residential Land Values: The North Albany Case Study. Michael Frank Turner. Research study submitted to the Department of Geography, Oregon State University. 1981. 31 pp. \$3.00. Obtain from the Natural Hazards Research and Applications Information Center, Institute of Behavioral Science #6, Campus Box 482, University of Colorado, Boulder, CO 80309, (303) 492-6818.

Residential land parcels in North Albany, Oregon, were examined in order to assess the impact on property values of a land use ordinance which stipulated floodproofing measures for houses built on the flood plain. Statistical testing indicated little significant difference in the appreciation rate of either the regulated or non-regulated parcels, a result suggesting that the market demand for desirable properties may outweigh the restrictions imposed by flood plain regulations.

State-of-the-Art Summary of Incentives for Residential Water Conservation. Jacqueline Elder. NBSIR 80-2119. U.S. Department of Commerce, National Bureau of Standards, Center for Building Technology, National Engineering Laboratory, Washington, DC 22161. 1980. 37 pp. The report has been submitted to the National Technical Information Service, Springfield, VA 22161, but no identification number has been assigned.

The study suggests that incentives for the personal conservation of water fall into two categories: first, a conservation ethic appears to be emerging that concerns the use of all natural resources; and second, consumers will conserve water in order to save money. Among the report's features are reviews of 1) programs and techniques that might encourage water conservation, 2) the psychological literature treating resource conservation, 3) water pricing systems, and 4) incentives in mass-metered residences. An excellent bibliography cites many recent (1976-1980) references to water conservation and drought.

Volcanoes of the World: A Regional Directory, Gazetteer, and Chronology of Volcanism during the Last 10,000 Years. T. Simkin, L. Siebert, L. McClelland, D. Bridge, C. Newhall and J.H. Latter. New York: Academic Press, 1981. 248 pp. \$19.75.

The book features comprehensive and up-to-date information on known volcanism over the past one hundred centuries. Data on locations, heights, types, known eruptive history and behavioral characteristics of over 1,300 volcanoes are arranged by region. A chronological listing of 5,500 eruptions includes the duration, explosive magnitude and volume of products expelled for each event. A world map of volcanism is included, as well as an extensive bibliography which provides a selective guide to the volcanological literature.

"Coping with Floods: The Land Use Management Paradox." Raymond J. Burby and Steven P. French. *Journal of the American Planning Association* (July, 1981): 289-300.

The article examines the success of land use management programs in protecting flood plains from urban encroachment and in lessening future damages to development from floods. A land use management paradox is illustrated: communities normally do not become concerned about the flood hazard and willing to implement land use programs until the flood plain has already been developed. By then the investment of additional funds and effort to regulate development does little to mitigate flood damage. If local conditions are considered in selecting land use management measures, however, effective programs can be devised. The implications of the study's findings for state and federal flood plain management policy are also discussed.

Flood Disaster Assistance and Protection in the Form of Flood Insurance: an Introductory Bibliography. John P. Worsham, Jr. *Public Administration Series Bibliography #P-751.* 1981. 19 pp. \$3.00. Order from Vance Bibliographies, P.O. Box 229, Monticello, IL 61856.

Approximately 200 publications are cited from the years 1966-1980. A broad spectrum of flood insurance material is treated, ranging from graduate theses to federal agency reports. Useful features of the bibliography include the listing of entries in chronological order and the inclusion of many Congressional hearings and reports.

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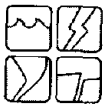
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