



United States Department of the Interior
GEOLOGICAL SURVEY



Outreach
in the
Office of Earthquakes, Volcanoes, and Engineering
April 1992

by

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Open-file Report 92-438

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Preface

This report was presented to the Office of Earthquakes, Volcanoes, and Engineering (*OEVE*) Management Team at its April 1992 Meeting in Boulder, Colorado. The OEVE Management Team decided to adopt policies that support the concepts that outreach is the concern of everyone in OEVE, and the outreach efforts and contributions of all OEVE employees are recognized and valued.

Specifically each OEVE branch is encouraged to:

- Add outreach to Position Descriptions (*PDs*) and workplans.
- Add outreach list to Professional Technical Records (*PTRs*). OEVE will need to standardize format and content.
- Use promotion panels to ensure that outreach contributions are fairly evaluated under Factor IV in the Research Grade Evaluation Guide (*RGEG*).
- Incorporate outreach under other classification guides.
- Use awards and frequent acknowledgements to legitimize our vision of outreach in OEVE.
- Develop channels of informal communication, such as newsletters, wherein outreach and its impact are recognized.

The OEVE Management Team adopted the following program management policies:

- All program prospectuses prepared in OEVE will stress that the translation and transfer of research results will be a factor in the evaluation of all proposals submitted to all programs managed by OEVE.

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- The need for liaison contacts was accepted. It is important to establish local and regional delivery systems so that our expertise is available to the nation.
- OEVE will customize outreach programs for priority customers. Each branch will identify one priority customer, devise a customized program of outreach based on discussions with that customer, and report on the results at the next OEVE management team meeting. (The Office staff, under the direction of Walt Hays, will develop a customized program of outreach for one national or international customer group.) The experiences in establishing these programs will then be synthesized into a strategy that can be extended to progressively more customer groups.
- *Earthquakes and Volcanoes* is a critical OEVE outreach activity and will be supported as such.
- Videos are an effective and flexible means to explain our research. OEVE will continue to develop video outreach products.
- OEVE will prepare in advance materials that can be used to take advantage of “windows of opportunity.” Bakun will organize a team that will develop and prepare materials to be used nationwide after future noteworthy earthquakes, volcanic eruptions, landslides, etc.
- OEVE will continue to work to change inability of the Geologic Division (GD) to keep “bestsellers” in print. A successful OEVE outreach program requires that popular products be available to our customers.
- Partnerships to translate our research and transfer it into changes in policy and practice will be encouraged. Hays will circulate a list of partnership opportunities.

Executive Summary

OEVE outreach in FY91 and FY92 was measured through a questionnaire returned by more than 275 employees and an interview of 100 employees randomly selected from those who did not respond to the questionnaire. Numerous, diverse, and intensive activities and products are being provided to the 97 customer groups identified; OEVE does not know now which of these activities are most effective in meeting customer needs. Suggestions in the questionnaire responses describe a broad range of opportunities for additional OEVE outreach. With few exceptions OEVE employees consider outreach important, are willing to participate in outreach, and do not think outreach is sufficiently appreciated, recognized, or rewarded. These attitudes suggest that management can improve OEVE outreach efforts by more effectively legitimizing outreach as a valued responsibility and activity, and through support of an actual program that helps to focus outreach efforts.

Whereas the current outreach effort is an impressive blend of mandated and volunteer activities, it is not adequately funded, organized, or planned. OEVE needs an outreach plan which spells out strategies, priorities, and processes. A greatly-improved program can be developed by expanding the current program with a modest increase in funds, and by making significant changes in personnel and program management policies. An optimum program would require an increased commitment of personnel to outreach activities, for example as liaison contacts for specific customers or groups of customers.

Recommended changes in personnel policy and practices:

- Incorporate outreach in position descriptions and workplans;
- Incorporate outreach in Professional Technical Records (*PTRs*) and other performance documents through an outreach activity list;
- Fairly evaluate outreach in promotion panel deliberations through *Factor IV* in the Research Grade Evaluation Guide (*RGEG*) and through modifications of evaluation standards for nonresearch grades;
- Increase recognition of outreach through branch newsletters and meetings, and frequent compliments;
- Sponsor an annual OEVE award targeted at outreach to

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highlight, validate, and encourage outreach as an important component of the OEVE mission.

Recommended changes in OEVE program management policy and practices:

- Include translation and transfer of research results in all project proposals;
- Formally identify OEVE liaison contacts for customers or customer groups;
- Establish working groups, chaired by the appropriate liaison contacts, for priority customer groups. These working groups, composed of OEVE staff, customers, and transfer agents, would evaluate current and potential outreach activities and products and recommend optimum programs to serve those customer groups;
- Achieve the potential of *Earthquake & Volcanoes (E&V)*;
- Use video to inform the public on complex issues;
- Prepare to take advantage of *windows-of-opportunity* for outreach that follow major geologic disasters;
- Seek long-term partnerships with organizations committed to the use of earth science research information.

Recommended changes in USGS program management policy and practices:

- Assign a permanent, full-time employee to the position of Public Affairs Officer for the Central Region;
- Establish visitor information centers in selected offices in all regions.
- Effect a change in policy and practices that allows popular and effective outreach “bestsellers” to be reprinted and available for distribution to the public.

As noted in the preface, the OEVE Management Team at its April 1992 meeting considered and adopted as OEVE policy all the recommended changes in personnel policy and practices and nearly all the recommended changes in program management policy and practices.

Introduction

The USGS motto "**Earth Science in the Public Service**" emphasizes the rationale for OEVE programs —to serve the public. Since OEVE is largely concerned with hazard reduction programs (efforts to reduce the hazards posed by earthquakes, volcanoes, landslides, waste disposal, *etc.*), we strive to explain our research and to cooperate in ensuring that it will be used to reduce hazards to the public.

Recognizing the need for OEVE expertise in reducing hazards, responsible elected officials have established extensive mandates (*see Appendix A*) that authorize a vigorous OEVE effort to translate and transfer our research. That is, the public, through their elected officials, expects a vigorous, organized, and comprehensive OEVE effort not only to better understand earth science phenomena, but to translate our information so that it is easily understood and effectively used to reduce hazards. The need for the translation and transfer of earth science information is well documented. Examples of both are listed in Appendix B.

In this report we use "**Outreach**" to mean the translation and transfer of geologic hazard information, concepts, and practices beyond the earth science community to improve public policies and practices. This is an intentionally broad definition since our audiences, our users, - "our customers" -are so diverse. Outreach is comprised of two elements: (1) the translation of research into a language and format that can be readily used by our customers, and (2) the transfer of such translated information to those customers that are required to, or are interested in, reducing casualties, damages, or economic disruptions. Translation includes specification of likelihood and the location, severity, and extent of effects on ground, man-made structures, their contents, and their equipment. Transfer includes delivery to the customer of products such as maps, reports, and technical advice that convey the translated information, and assistance and encouragement in the use of the translated information. Numerous transfer agents are

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available to deliver our translated research information to our customers and to assist and encourage them in its use.

OEVE has recognized its responsibilities and opportunities in that outreach is formally included in its program plans. For example, as shown in *Appendix C*, the transfer of the earthquake research results to user communities is identified as one of the four program goals. Additional examples of outreach in natural hazard reduction programs are listed in *Appendix D*.

The OEVE Management Team considered a number of options for an improved outreach program (see *Appendix E*) at its November 1991 meeting in Monterey, California. The team agreed to undertake a serious, sustained outreach effort spanning the range of programs managed by the Office. The team empaneled a working group to develop a comprehensive outreach plan. The OEVE management team's mandate to this working group is in *Appendix F*.

The following report is not a comprehensive outreach plan. It is a summary of the working group's findings and recommendations toward improved outreach in OEVE presented to the management team at its April 1992 meeting in Boulder, Colorado. As noted in the preface, the management team adopted nearly all the recommendations.

Current Status (FY91&FY92)

The current status of OEVE outreach was measured by a **questionnaire** submitted to all OEVE personnel in January 1992. The questionnaire sought to define employee knowledge of outreach activities and solicited comments and suggestions and a listing of personal outreach activities during FY91 and FY92. More than 275 responded to the questionnaire (about 40% of OEVE employees) providing a representative sample of current OEVE outreach activities. The results of the questionnaire are tabulated in *Appendices G and H*.

Appendix H is taken from a database in *EXCEL* that can be searched to identify activities by customer(s), program(s), and/or affected region(s). Copies of the database and associated programs are available on request. Samples of the type of outreach activity lists that are available are given in *Appendices I and J*.

The attitudes and opinions of the 60% of OEVE who did not respond to the questionnaire (“**nonresponders**”) were sampled during February and March 1992 by anonymous **interviews**. The nonresponders interviewed were randomly selected to characterize in a statistically significant sense the OEVE Office staff and each OEVE branch independently. Professor Dennis Mileti, a sociologist at Colorado State University provided guidance on this procedure. The results of the interview are tabulated in *Appendix K*. A preliminary report on the results of the questionnaire and interviews (*Appendix L*) was distributed to all OEVE personnel on March 10, 1992.

Attitudes of OEVE Staff toward Outreach

Willingness. Based on our tabulations of the interviews, we conclude that, with few exceptions, OEVE employees are very willing to do outreach. The breadth of volunteer activities reported in the questionnaire (see *Appendix H*) suggest a readiness to participate. Additional participation hinges on requests for their assistance, approval by supervisors, increased familiarity with opportunities, more recognition, and adequate time for research. OEVE employees almost always do outreach when asked, but a significant number do not independently initiate outreach.

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Not all employees are interested in or inclined to do outreach. Technical/administrative staff and employees on temporary status were less inclined to see outreach as something they could or should do. These employees were often surprised to learn that there are many facets of outreach to which they can contribute, and often found that they had participated; for example, by setting up displays for an open house or mailing newspaper inserts.

Importance/Awareness of Outreach. The responses to the interviews indicate that 93% of OEVE consider outreach important, very important, or critical to OEVE program goals. There would be little employee resistance to an increased emphasis on outreach.

Many OEVE personnel are unaware of outreach not only within OEVE, but within their own branch. There are insufficient efforts (newsletters, branch meetings, award/recognition ceremonies, etc.) to instill status and pride in outreach efforts.

Reward and recognition. OEVE employees do not think outreach efforts are sufficiently recognized, appreciated, or rewarded. In the interview, 61% indicated that recognition is marginally adequate or grossly inadequate, whereas only 15% felt current recognition to be appropriate. (21% of those interviewed did not express an opinion on recognition.) Employees commented that they would do more outreach if these efforts were recognized and appreciated more. Among professionals, peer recognition and approval may be the most important key to contributing to outreach. Many in OEVE are unaware of recent OEVE outreach recognition except for the Loma Prieta earthquake awards and possibly the award to Peter Ward for the newspaper insert. Most employees are unaware of examples of recognition, perhaps reflecting on the form more than the amount of OEVE recognition.

Involvement. Of the more than 275 respondents to the questionnaire, more than 90 reported spending 50 or more person-days over the 2-year period, an average of 1/2-day/week. More than 50 performed 100 or more person-days over the 2-year period (See *Appendix H*). While some outreach was assigned, most was volunteer. Many contributions are outside normal working hours, or done while on annual leave.

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Existing Outreach Program

Activities and products. Outreach has been part of the Earthquake Hazards Reduction Program (*EHRP*) and Landslide Hazards Reduction Program (*LHRP*) in OEVE for many years. The National Landslide Information Center (*NLIC*), the National Earthquake Information Center (*NEIC*) and the National Geomagnetic Information Center (*NGIC*), are program-focused outreach in the OEVE. "Open Houses" are a huge success as an outreach activity.

OEVE assumed editorial responsibility in July 1991 for publishing *Earthquakes and Volcanoes (E&V)*, presumably to better focus and use this critical OEVE outreach vehicle. (The first two issues for 1992 are far from complete and there is thus far inadequate support from OEVE for *E&V* to fulfill its promise.) The Quick Epicenter Determination (*QED*) by NEIC with dialup capabilities for earthquakes anywhere in the world on a rapid basis has been a great success, and is used by scientists, schools, news media, and the general public throughout the world.

In addition to mandated outreach, there is a substantial *ad-hoc* outreach, much of it volunteer. Numerous, diverse, and intensive activities and products are being provided: answering postdisaster inquiries, providing presentations and technical assistance, mailing products, serving on public advisory bodies or working groups, organizing and chairing conferences and workshops, reviewing critical facilities programs, reporting seismicity, organizing and conducting training courses and seminars, producing films and videos, assessing site-specific hazards, and providing hazard reduction advice (see *Appendix H*). Unique products include a general audience newspaper insert, public exhibits, newsletters, a comic book, radio/TV programs, a newspaper column, posters, postcards, and earthquake and volcano model kits.

There is no evaluation of the effectiveness of the current outreach activities listed in *Appendix H*. We don't know which outreach activities are effective in addressing the needs of OEVE customers or which actually result in a reduction of hazards. We also haven't identified which customers are most important in achieving the goals of our programs.

Customers. The 97 customer subgroups identified in the questionnaire are a diverse and comprehensive list of users. Of the 9 general categories of customers, *general public* and *newsmedia* were identified most often. *Citizens-at-large*, *newspapers*, *television*, and

radio were the most frequently mentioned customer subgroups. An example of activities for one customer subgroup— *Museums*— is listed in *Appendix I*. There are many OEVE personnel particularly interested in specific customer groups, but there are no designated “liaison contacts” or comprehensive outreach plans in OEVE for specific customer groups.

Opportunities. A wide range of opportunities was suggested in the questionnaire: additional USGS publications (32%) such as videos (10%), various computer-based earthquake databases/displays, brochures, and 1-to-2-page-long project summaries intended for nonscientists; a coordinated OEVE outreach program (17%) with dedicated positions, priorities, improved dissemination and marketing, and additional funding; increased transfer of hazard information through direct communication with agencies, officials, etc. (11%), primarily through local conferences and workshops; additional public forums (10%) through slide presentations in classrooms and through a speakers bureau; increased media exposure (10%) through newspaper inserts and articles in magazines or newspapers. Numerous additional opportunities (see *Appendix M*) show that there is no lack of ideas for an enhanced OEVE outreach program.

Outreach Products in the Pipeline

There are many outreach activities in development in OEVE:

- *Workshop on Fundamentals of Earthquake Engineering.* This workshop, cosponsored by the *Central United States Earthquake Consortium (CUSEC)* and the USGS, built professional and political partnerships. The workshop will be introduced in several midwest states in 1992.

- *Engineering Monographs.* Monographs on hazard assessment, on the built environment, on social and economic impacts, on emergency response, and on recovery and reconstruction will be created at a May 1993 conference at Memphis, Tennessee.

- *International Training Course.* With increased support from OFDA and UNESCO, *BGSG* will offer again in 1992-93 the international

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training course *Understanding Earthquakes and Mitigating their Effects* .

- *Prototype Interactive Educational Video Kiosk*. Funds from the Geologic Division will be used to purchase an kiosk-enclosed, interactive (touch-screen) video display. The *California Academy of Sciences* located in Golden Gate Park, San Francisco, has 1.5 million visitors/year and is eager to field test the prototype and is attempting to secure hardware to copy it.

- *"CUBE" system for Northern California*. A northern California version of the prototype "CalTech-USGS Broadcast of Earthquakes" system in southern California is under development. The Branch of Seismology (*BSEIS*) and the *UC Berkeley Seismographic Station* will cooperatively provide real-time earthquake information, and companies in the San Francisco Bay Area will develop strategies to use that information for rapid response to damaging earthquakes. (An MOU between *BSEIS* and *PG&E* is under review.)

- *Earthquake Activity on a PC Public Bulletinboard*. The weekly summary of earthquake activity now faxed to 150 users worldwide will be complemented with a frequently-updated earthquake activity message on the *Compuserve* PC Public Bulletinboard.

- *Newspaper inserts*. Following the highly visible effort of Peter Ward, the Branch of Geologic Risk Assessment (*BGRA*) is producing newspaper inserts as educational and preplanning efforts in the New Madrid (Central US) seismic zone and the Pacific Northwest NEHRP project areas.

- *Intergovernmental demonstration project in Colorado*. *BGRA* is engaged in promoting an intergovernmental demonstration project towards natural hazards reduction in Colorado. The *BGRA* efforts are primarily devoted to landslide hazards, geologic hazards other than landslides and earthquakes, and geographic information systems (*GIS*). Some intended results are state hazards reduction plans to guide state and local governments, and to demonstrate how hazards reduction can be applied at the local and regional levels.

- *Brochures and Pamphlets*. The Branch of Igneous and Geothermal Processes (*BIGP*) is preparing "*Volcano Hazards at Mount*

Hood, Oregon, "Volcanoes of the United States," and "Plate tectonics — The Restless Planet," and preparing modular display panels of volcano hazard information.

- *Videos.* A video on earthquake hazards in the central US is in production, and BIGP is consulting with *Boeing* on a 25-minute video "Volcanic Ash Avoidance."

Recognition and Awards

The awards for outreach in OEVE in FY91 and FY92 are tabulated in *Appendix N*. Significantly, awards recognize efforts in response to a geologic crisis or to prepare a specific product. No awards were given in recognition of sustained efforts in developing or providing USGS hazard information or for consistently producing quality publications intended for the public. An exception to the general paucity of awards for outreach is in BIGP, which gave at least 48 awards, mostly for responses to volcanic eruptions, but awards for developing public displays and other activities were also given.

An analysis of the awards given for Loma Prieta outreach is illustrative. Of 211 cash awards given, only 23 (11%) were for outreach. However, of the 15 *Superior Service Awards* given for the Loma Prieta earthquake response, 7 (47%) were for outreach. Apparently the impact of outreach efforts, as seen by the managers who made the nominations, was considered to be relatively high compared to the numbers of individuals involved. These numbers are approximate because groupings were arbitrary as some individuals did science and outreach, and were recognized for their primary contribution. In addition to the Loma Prieta awards, there have been two Department of Interior (*DOI*) awards in the Office, and one cash award for an Open House building coordinator. A departmental group award was given for the Mt. Pinatubo response, which can be considered outreach.

Although the award system is effective when it is used, such as after the Loma Prieta earthquake, it is used infrequently in OEVE. There is generally little recognition that derives from the award itself in the formal award component of the reward system. There is no requirement to prepare a citation for the cash awards and presentation ceremonies are rare. Validation by peers is an important component of recognition so that citations and formal

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presentations by branches would augment the effectiveness of recognition at little or no expense.

Outreach may not always be considered in the promotion process. The primary vehicle for evaluating performance in OEVE is the RGEG. In recent years, the *Erickson committee*, the *Tilling committee*, and performance panel classes have tried to change attitudes and recognize the quality and impact of scientific work through activities other than publications in refereed scientific journals. These attempts have met with limited success.

Constraints and Obstacles to Outreach

OEVE outreach is constrained by administrative controls typical of government organizations. Sometimes these controls discourage outreach initiators so that they fail to pursue creative outreach ideas. For example, press releases are unnecessarily reviewed by too many people, each of whom feels compelled to change a word here or delete a clause there, so that the final product often is inaccurate. Products, like posters and videos, that don't fit into established USGS publication series, are not encouraged. Products that are viewed as primarily for nonscientists are tightly controlled by DOI and classified as *General Interest Publications*, a category for which there is inadequate distribution.

The *GD* feels that it cannot afford "bestsellers" (see *Appendix O*). In fact most of our most popular, and presumably most effective outreach products, are *out of print*. This situation stems from a financial structure that requires reprinting of products to be financed from project funds allocated for research and allows the proceeds from those same products to be deposited outside *GD*.

Optimum Program

The working group did not have the time or resources to develop a plan for an optimum outreach program —such a plan should be the consensus view of a larger group that builds on this report. We do discuss personnel management issues (see *Necessary Changes*) that need to be addressed by OEVE management to establish a foundation upon which an optimum outreach program might be built. **An optimum program will require additional funds and a commitment of personnel to outreach, at the expense of the science that might otherwise be done with these resources.** (Walt Hays and Steve Brantley have independently discussed issues relevant to an optimum program and their comments provide frameworks that should be considered in development of plans for an optimum program.) The following remarks are some thoughts on aspects of an optimum program.

Why OEVE's Existing Outreach Program is Suboptimum

The following deficiencies in OEVE's program were noted:

- OEVE outreach is not as well organized or funded as those of comparable units of other Federal agencies, but there are many low-cost, high-benefit activities we can undertake with little additional funding.
- OEVE's program could contribute more to hazard reduction policies and practices.
- The number of networks of organizations with which OEVE cooperates in its outreach is inadequate in terms of the dimensions of the problems in hazard reduction, resource development, environmental protection, and national security for which OEVE contributes to informed solutions. For example, 30,000 local jurisdictions throughout the Nation are threatened because of their locations in or near seismogenic zones, active volcanoes, and locales susceptible to landsliding. All need OEVE research information.
- OEVE's information is either unknown or poorly known in many local jurisdictions throughout the Nation.

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- OEVE has not yet fully met the needs of customer groups in many local jurisdictions throughout the Nation who need a scientific basis for devising realistic policies and practices.
- OEVE often is unable to seize “windows of opportunity,” even when *NEIC* and the volcano observatories have the latest information on damaging worldwide earthquakes or volcanic eruptions, and large scale landslides. Each geologic crisis creates new and dramatic opportunities for OEVE research, operations, and outreach programs.

Objectives of an Optimum OEVE Outreach Program

OEVE wants to establish an optimum outreach program. The objectives of such a program should include the following:

- An organized, adequately funded national outreach program.
- Contributions to advances in the number and quality of hazard-reduction policies and practices in every local jurisdiction throughout the Nation.
- An increase in the number of organizations with which OEVE can cooperate in serving the Nation.
- More rapid transfer of OEVE's information to priority customer groups throughout the Nation.
- More effective use of OEVE's information by these customer groups to devise, adopt, and enforce hazard reduction policies and practices.
- Increased participation of employees in outreach to OEVE's priority customer groups.
- Improved planning to increase OEVE's capability to capture the public service opportunities provided by damaging earthquakes, volcanic eruptions, and landslides nationally and internationally.

Need for Designated Customer Liaison Contacts

Designated liaisons have proven to be the difference between successful and failed research translation and transfer. Letters from the Director of USGS, or the Chief Geologist naming the liaison contact person may add to the effectiveness and prestige of the assignment.

Some Conclusions

Although we have not developed a plan for an optimum outreach program, some conclusions can be suggested:

- A **foundation** for an optimum program of outreach can be developed by expanding OEVE's current program with modest investments of fiscal and human resources; however, committed leadership and management are prerequisites. **Implementation** of an optimum program will require significant additional resources, both funds and people. Unless OEVE programs are expanded and augmented, these additional resources will inevitably come from the resources now committed to research.

- The working group believes that **designated liaison contacts** are effective and that employees should be selected to serve as liaisons for each targeted priority customer group.

- OEVE can and should **learn from other organizations** with successful outreach programs. OEVE might consider adopting NASA's Technology Utilization Program as a model.

Necessary Changes (Current Status → Optimum Program)

Add Outreach to PD and Workplan

Employees must consider outreach to be an integral part of their jobs. OEVE should encourage this attitude by including outreach as a component of jobs through additions to position descriptions. If outreach is an element in the position description, then outreach can be included in the annual workplan and performance evaluation of each employee.

Add Outreach Activity List to PTR

The ultimate form of recognition is career advancement through promotion. One obvious option is to include outreach activities under item no. 12 of the PTR, perhaps in tabular form as on the OEVE outreach questionnaire. Promotion and performance review panels could then compare the relative impact of contributions on the same basis that publications and other research products are now considered. Employees for whom a PTR is not compiled would need another method for keeping track of their outreach contributions.

An additional benefit in adding an outreach activity list to the PTR is that OEVE could easily create current outreach activity lists, such as in *appendices H, I, and J*. These lists would be useful in monitoring progress in future “optimum” outreach programs, in documenting our commitment to outreach to Congress, DOI, OMB, etc. Since the PTRs are now in word processors, compilation of the entries from the PTRs should be easy compared to the task of creating the outreach activities list for FY90 & FY91.

Branch chiefs and supervisors should document the impact of outreach activities in ways that can be cited on a PTR. For example, branches might select outreach activities that stand out, recognize these efforts with a commendation letter, and note the commendation on the PTR.

Promotion Panels and Personnel Policy

Outreach contributions must be fairly valued in the personnel evaluation system. Some guidance for scoring outreach contributions should be developed to be summarized in the "*Blue Book*" series and incorporated into the annual promotion panel training. Tom Casadevall was recently recognized by the aviation industry for his efforts in organizing the volcanic ash symposium, and Peter Ward's newspaper insert is well known. The impact of these contributions are of such magnitude that they might score in the personnel evaluation system as comparable to major, even seminal, research papers. Other types of outreach contributions should be scored according to their impact on meeting OEVE program goals.

The USGS should formulate a consistent guide for evaluating the outreach activities of all employees. Under the *RGEG*, it is clear that outreach contributions can be considered under **Factor IV**. We need to incorporate evaluations of outreach contributions under other classification guides used in *GD*. Standards for nonresearch and operational grade employees need to be modified to permit recognition of outreach in performance evaluation and promotion.

The USGS should make clear that the quality and impact of outreach activities are as important to the OEVE and USGS as the quality and impact of scientific research. Those who engage in outreach activities as a part of their assignments should have career advancement opportunities appropriate to their contributions.

Recognition and Rewards (Office level)

Last year the annual DOI award was given with outreach specifically in mind. This year "public service" was the criteria, as opposed to outreach specifically. Because we are all public servants in the broadest sense, the focus and significance of the award may have been diluted. An annual OEVE award targeted specifically at outreach could be effective in validating and highlighting quality outreach efforts as an important component of and contribution to Office missions and objectives.

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Recognition and Rewards (Branch level)

Recognition can take the form of official acknowledgment through the formal awards system, or informal, frequent, acknowledgment by a supervisor through positive, supportive comments, etc. Studies have shown that frequent supportive, positive comments and other unofficial forms of immediate acknowledgment are more effective than infrequent formal recognition. "A single kind word will keep one warm for years" (*inside a circa 1987 fortune cookie*).

An example of informal recognition occurred in one branch in conjunction with the recent Western Region Open House. After the weekend activity, the Branch Chief distributed a congratulatory memo and authorized compensatory time off for all participants. Few employees took the time off, but all appreciated the acknowledgment

Communication

The BESH newsletter is an effective tool for disseminating highlights of branch activities, including outreach, that would otherwise go unnoticed. While comparable newsletters exist in some branches, every branch should develop a means of informal communication wherein outreach and its impact are recognized.

Project Proposals

Proposals to the *LHRP* require specific targeting of products to entities supporting or benefitting from the proposed work. OEVE should require an implementation/applications aspect in all project proposals for *SIR* funding. The applicant should show the value of the intended project in terms of earth science in the public service, in accordance with the mission, goals, and legislative mandates of the USGS. Project proposals must be evaluated on these merits, and proposal evaluation teams must be given specific training and direction about what constitutes an appropriate proposal evaluation.

Formally-Identified Customer Group Liaison Contacts

OEVE outreach would be more effective if liaison contacts were named for critical customer groups. For example, a liaison contact in OEVE for *teachers and schools* would ensure that calls from schools and teachers received by the switchboard, by a PAO, etc. would be directed to a knowledgeable person interested in and responsible for helping this customer group.

Establishment of formal liaison contacts would make clear to all that OEVE is seriously committed to serving that customer group. Our visibility and credibility as a customer-driven organization would be greatly enhanced.

Custom Programs for Priority Customers

OEVE should select a few priority customer groups and establish programs that meet the needs of those particular customer groups. The liaison contact for that customer group (see *Formally-identified customer group liaison contacts*, above) would chair a working group composed of OEVE employees, internal and external transfer agents, and representatives of the customer group. The working group would be charged with evaluating current and potential products and activities with respect to customer needs and recommending a workable and efficient optimum outreach program. The working groups would need to survey the customer group, organize workshops, etc.

The effectiveness of these working group pilot projects should be evaluated with a view to extending a refined process to develop optimum outreach programs serving several diverse OEVE customer groups.

Achieve the Potential of E&V

OEVE should view *E&V* as a centerpiece of its outreach program. *E&V* is a regularly published report under our control that OEVE can use to translate its research for diverse customer groups. As such, it is a unique and powerful technique. Sufficient support should be provided *E&V* to enable it to achieve its potential. *E & V*

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should contain current and understandable articles aimed at our priority customer groups. The distribution should be expanded.

Capitalize on Potential of Video

Video is widely recognized as an effective technique to inform the public concerning complex technological issues. New procedures under consideration in *GD* will allow better distribution of videos through the open-file report system. Furthermore, there is some evidence that the public supports the production of videos by federal agencies such as the USGS (see *Appendix P*). OEVE should establish a improved capability to produce videos that translate our research to diverse customer groups.

Prepare for “Windows-of-Opportunity”

After every major geologic disaster, there are numerous “windows-of-opportunity” for OEVE outreach. Communication channels are more readily accessible, customers nationwide are particularly receptive to translated research information, and decisionmakers are inclined to chart new courses in hazard reduction policy and practices. Outreach available during a “window-of-opportunity” has a potential impact that dwarfs comparable efforts in normal times. Unfortunately, there is never enough time to prepare the outreach once a window-of-opportunity has opened because our limited resources are taxed in responding to the crisis and the windows close quickly.

OEVE should now prepare materials designed to be used in future “windows-of-opportunity.” For a “window-of-opportunity” after a large earthquake, the materials might be maps and illustrations demonstrating the potential for comparable hazards nationwide (e.g., liquefaction along the eastern seaboard).

Public Affairs Officer (PAO) in Central Region

The USGS should assign a permanent, full-time employee to the position of PAO for the Central Region. The PAO for the Western Region now covers both regions, resulting in missed opportunities for outreach throughout the western half of the Nation.

Information Centers

The USGS should provide visitor information centers in selected offices in all regions. These centers should be equipped with stand-alone displays, computer-interactive demonstrations, handout materials, and means of contacting someone for further information. Such centers are a logical outgrowth of the Open Houses, and the materials prepared for Open Houses can be adapted for permanent, evolving displays in these information centers. Materials and exhibits prepared for the centers may be transferred or circulated to other public display areas.

Keep "Bestsellers" Available

The inability of GD to keep outreach bestsellers in print must be changed. Without the ability to supply our most effective outreach products to our customers, OEVE is hamstrung in its efforts to maintain an effective outreach program.

Partnerships

OEVE should identify organizations with whom long-term outreach partnerships can be formed. The transfer of research results on hazard reduction is of interest to many organizations, such as the *Federal Emergency Management Agency (FEMA)*, the *United Nations Disaster Relief Office (UNDRO)*, the *Applied Technology Council (ATC)* for building code designers, the *Association of Bay Area Governments (ABAG)* for local governments in the San Francisco Bay area, and the *Earthquake Engineering Research Institute (EERI)* for structural engineers.

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- A. Outreach Mandates
- B. Examples of the Need for Outreach
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Appendix A.

Mandates for OEVE's Outreach Program

Principal legislative mandates:

- Public Law 96-480, the Steveson-Wydler Technology Innovation Act of 1980, which requires USGS to have a program of technology transfer to State and local governments and the private sector.
- Public Law 95-124 which established the NEHRP requires USGS to conduct a national program of earthquake research and technology transfer. It identified activities such as ground shaking, hazard mapping, the NEIC, and worldwide postearthquake investigations. Interagency cooperation and coordination is achieved through ICC (4 agencies) and ICSSC (25 agencies). Annual reports to congress and frequent hearings are required.
- Volcano Hazards Program requires USGS to conduct research and technology transfer to reduce loss of life and property from volcanic eruptions.
- Landslide Hazards Program requires USGS to reduce landslide losses through research and technology transfer.
- Public Law 101-614 (November 1990) which is the latest amendment to Public Law 95-124, introduced a new initiative on lifelines and postearthquake investigations.
- Presidential Executive Order 12699 which was signed in January 1990 requires USGS to conduct research applicable to siting, design, and construction of new buildings and other facilities.
- Public Law 93-288, the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988, requires USGS to provide emergency service functions in support of the Federal Emergency Management Agency, other Federal agencies, and volunteer organizations. Originally requiring planning for catastrophic earthquakes, the Act was

amended to include planning for all catastrophic natural hazards.

International mandates:

- United Nations Resolution 44-236 established the IDNDR in December 1989. By the year 2000, the United States is expected to have:
 - National assessments of the risks from natural hazards, with these assessments being taken into account in development plans,
 - Mitigation plans at national and/or local levels, involving long-term prevention and preparedness and community awareness, and
 - Ready access to global, regional, national, and local warning systems and broad dissemination of warnings.

State and Local mandates:

- Mandates exist in states which require USGS assistance (e.g., California Assembly Bill 3897, the Seismic Hazards Mapping Act).

APPENDIX B.**Examples of the need for outreach or evaluations of existing outreach programs**

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Appendix C

REFERENCES TO OUTREACH ACTIVITIES EXCERPTED FROM PAGE AND OTHERS (1992).

-
- o This report . . . discusses the transfer of program results to the planning and engineering communities
 - o Using research results--What new hazard-reduction strategies become possible as understanding of earthquake phenomena advances? What scientific information is needed and can be furnished to practitioners in the engineering, land-use-planning, and emergency-management communities? How can such information be most effectively communicated to these practitioners?
 - o Intensify cooperative efforts with State and local governments to map earthquake hazards and assess potential earthquake losses in local demonstration areas within urban centers
 - o Augment communication of earthquake-hazard information and hazard-assessment methods to users.
 - o Extend cooperative efforts with State and local governments to map earthquake hazards to several other high-risk urban regions. . . .
 - o . . . effective and timely flow of scientific information to the myriad of potential users, ranging from the general public to engineers, planners, government officials, business leaders, and many others.
 - o . . . technical information must not only be understandable to the would-be user, but also relevant and usable to the practicing professional.
 - o . . . inform engineers, planners, and emergency managers about new opportunities for hazard reduction arising from improved understanding of the earthquake threat or the availability of new earth-science information.
 - o . . . researchers must be heavily engaged in this dialogue with the user community. But researchers alone cannot carry the burden of implementation; the program must also engage those trained and skilled in communicating and applying research results.
 - o . . . the role of the program is to furnish accurate earth-science information for the education of the public and those responsible for mitigating earthquake risk.
 - o . . . to provide rapid and reliable scientific information on the size and location of the earthquake and on the likelihood of potentially damaging aftershocks and, where possible, maps depicting probable areas of severe ground shaking and extensive ground failure.

The term "transfer" is meant to encompass not just the delivery of information or an assessment method to a person or group interested in or responsible for mitigating risk but also the encouragement or assistance of the

person or group in the use of the information or application of the method. Encouragement and assistance are critically important. For effective transfer, the researcher must encourage and guide the use of information or the application of a method. Tasks include:

Deliver hazard-information products and methods for hazard assessment in a usable format to those responsible for mitigating risk.

Educate professional groups, government officials, the media, and the public about the nature, extent, and likelihood of earthquake hazards.

Advise users of hazard-information products and hazard-assessment methods about the applicability and limitations of the information and methods.

Review and comment on policies, procedures, regulations, and ordinances that cite, interpret, utilize, or apply earthquake-hazard information or hazard-assessment methods.

Document and evaluate the effectiveness of the transfer process.

- o Effective hazard reduction demands . . . two-way communication between researchers and those individuals charged with adopting and enforcing hazard-reduction measures.
- o Augment communication with and education of user communities and the public. Working groups would be supported to establish effective communication between the research and user communities.
- o Double efforts to map shaking and ground-failure potential and to estimate losses in at-risk urban areas
- o Expand communication with and education of user communities and the public.
- o . . . estimating losses to various classes of buildings for postulated earthquake scenarios,

Transfer techniques include creation of seismic-safety organizations, technical assistance, guidelines, geographic-information-system data bases, workshops and their proceedings, education projects, guidebooks, press briefings, newspaper inserts, magazine articles, serial publications, outreach programs, and many others.

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APPENDIX D**Examples of natural hazard-reduction programs that include Outreach**

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Appendix E

Presentation to OEVE Management at Monterey, 11/19/91

1. Develop a "Page Plan" for Outreach/Utilization

- a. Define and prioritize appropriate audiences—school children, the existing diverse citizenry, decision makers, engineers and architects, etc. Each group has a means appropriate to its particular needs.
- b. Define desired outcomes in terms of the audiences identified in a). I.e., What are present-day perceptions, existing policies, actual behavior patterns? What do we want to change? Do we inculturate risk— so that people think about risk from earthquakes in making decisions? What is the reason for communicating risk?
- c. Define and catalog state-of-art of risk communication principles that work and don't work, and why.
 - i. Variables of communication act.
 - ii. Constraints imposed by different audiences (regional, educational level, etc.)
 - iii. Catalog contextual factors (other agencies, etc.)
- d. Devise program and priorities, based on a) -c).

2. Set up an Outreach/Utilization Unit on OEVE staff

- a. Unit at OEVE level. Not in PAO, etc.
- b. Professionals with outreach/utilization the focus of position descriptions and performance standards.
- c. Includes special talents— technical writer, sociologist, video specialist, etc. (Steve Brantley already serves such a role for Volcano Program.)
- d. Team would work with scientists in different regions, programs, etc. as prioritized by Office.

3. Outreach Products

- a. Influence our future constituency through the curriculum in schools. Prepare supplements for maps, posters, etc. that

explain what can be seen and inferred so that teachers will use these products in class discussions, exercises, etc.

- b. Post-earthquake disaster products. Be ready for the 1-3 week window of opportunity after the next Loma Prieta eqk.
- c. Communicate directly with adult public (newspaper inserts, etc.)
- d. Give state and local policy makers information packaged how they can use it. Example: Shaking parameter maps superimposed on lifelines, or superimposed on an existing building stock category. (This would have a vast political effect if done for other regions, e.g., New Madrid, where little is known.)
- e. Products to assist in new developments of land. Little information available to decisionmakers on zonation, etc. (Prepare comparative risk maps for decisionmakers.)
- f. Real-time (30 minutes after the quake) isoseismal maps (avoid the Loma Prieta Santa Cruz fiasco). This is the necessary, and probably sufficient, condition for the USGS to assume a formal responsibility in the federal response plan. If the USGS is formally included in the federal plan, post-earthquake investigations might be supported in the emergency response appropriation rather than by our normal appropriation.
- g. Establish an early-warning aftershock capability, as done for Loma Prieta. The response community (OES, Corps of Engineers, Calif. Seismic Safety Commission, ATC who set up groups to evaluate damaged buildings, etc.) are all enthusiastic about this capability.
- h. Pressure PAO to reestablish the PAO officer in central region. Pat Jorgensen can't do the whole country.

4. Rewards

- a. Promote people for outreach/utilization. New position description must emphasize outreach/utilization.
- b. Publicize all examples of a). Rewards should be used to inspire others, not just pay an individual for a good job.

5. Restructure External Program

- a. Rewrite RFP, revise panels, etc. to stimulate and better evaluate utilization according to regional needs.
- b. Improve coordination between regional teams and external programs (grants and contracts, state workshops, etc.)

UNITED STATES GOVERNMENT

memorandum

DATE: 12/3/91

TO: Bill Bakun, Steve Bramley, Bill Brown, Walt Hays, Bill Kockelman, Carl
Mortensen, Wavely Person

FROM: Rob Wesson

for the Management Team

SUBJECT: OEVE Outreach Plan

The OEVE management team agreed at its November 19-20, 1991 meeting in Monterey to undertake a serious sustained outreach effort spanning the range of programs managed by the office. The logical first step is the development of a comprehensive OEVE outreach plan. I want to thank you for agreeing to serve on the committee to develop that plan for the management team.

The OEVE plan should evaluate the current status of OEVE outreach- by whom, where, how, and why. What are the resources, incentives, and rewards for outreach? What audiences (customers) are we reaching, and not reaching? Are these users satisfied with our products? -with our service? What do they want? How do they want it delivered?

The plan should define the optimum outreach program, that program we strive to achieve. It should identify all of our diverse potential audiences over the next 5 years. What is the desired impact of our outreach program on these customers? What are the products and services that can be developed that are likely to achieve the desired impact? What are the priorities for each of the diverse potential customer groups?

What changes are necessary to take OEVE from our current outreach program to the optimum program. What additional resources are necessary? Should our performance standards and our reward incentives be modified?

The plan should consider outreach appropriate to the earthquake, volcano, geothermal, and landslide programs. It should be relevant both to the internal program and to our non-USGS colleagues.

The OEVE management team recognizes that such a plan requires careful consideration and evaluation of information not yet in hand, or easily obtained. The management team will provide the resources and assistance necessary to obtain these data and prepare the plan. The management team further is committed to provide the resources necessary to seriously address the priorities justified in the plan and to encourage outreach through an environment of rewards and recognition.

The office needs such a plan as soon as it can be developed. The FY93 NEHRP external grants and contracts program RFP should reflect the thrust of the plan. Therefore the part of the plan relevant to the RFP needs to be available in draft form by February 1, 1992. The OEVE management team will meet in February and would welcome a progress report on the plan at that meeting.

APPENDIX G

6/1

OUTREACH QUESTIONNAIRE RESULTS

QUESTION #2, WHAT IS OUTSTANDING OUTREACH IN YOUR BRANCH IN FY90 AND FY91?

OUTREACH ACTIVITY	BRANCH (total # responses within branch)								TOTAL (240)
	ESG (29)	GRA (25)	GSG (15)	IGP (52)	LITH (9)	SEIS (76)	TECT (19)	OFF (13)	
News Supplement, The Next Big One	0	0	0	0	0	33	0	3	36
Western Region, Open House	13	0	0	3	0	6	6	1	29
Response, Loma Prieta	3	3	0	0	0	11	1	1	19
Response, Mount Pinatubo	0	0	0	18	1	3	0	0	22
Response, Redoubt Volcano	0	0	0	10	0	3	0	0	13
NEIC	0	0	10	0	0	0	1	0	11
Public Affairs Off (news media)	1	0	1	0	0	2	0	0	4
Landslide Information Center	0	5	0	0	0	0	0	0	5
<u>Various specific outstanding outreach, by branch</u>									
Conferences/Symposiums									4
Ash & Aviation Safety				2					
Stanford Zonation Conf.	2								
Geologic Hazard Assessments		4			2	1			7
Jordanelle Dam (Utah)		1							
Landslide/debris flows (HA)		1							
National Probabilistic Grd Motion		1							
Seismic reflection studies		1							
Earthquake hazards (OR, WA, CA, AK)					1				
Hazard research					1				
Parkfield experiment						1			
Overall earthquake/volcano hazards						5	1		6
CUBE						5			5
NEHRP, Central Region		1							
Field trips (for nonscience staff)	1								
Public Seismic Network (S. San Jose)		1							
New Madrid Experiment						1			
Bay Area future EQ project							1		
Building tours						1			
Acid rain effects guidebook					2				

OUTREACH QUESTIONNAIRE RESULTS**QUESTION #3, WHAT IS OUTSTANDING OUTREACH IN OEVE IN FY90 AND FY91?**

OUTREACH ACTIVITY	BRANCH (total # responses within branch)								
	ESG (29)	GRA (25)	GSG (15)	IGP (54)	LITH (9)	SEIS (76)	TECT (19)	OFF (13)	TOTAL (240)
News Supplement, Next Big One	13	8	3	23	1	28	10	7	93
Western Region Open House	4	0	1	1	0	14	3	1	23
Response, Loma Prieta ¹	1	1	0	0	1	10	2	5	20
Response, Mount Pinatubo	0	1	0	9	1	7	0	2	20
Response, Redoubt Volcano	0	0	0	7	0	2	0	1	10
NEIC ²	0	3	3	0	0	0	0	0	6
Public Affairs Off (news media)	1	0	0	0	0	2	0	0	3
Landslide Warning System	0	2	0	0	0	0	0	0	2
Videos about Loma Prieta	0	0	0	0	0	2	0	0	2
OTHER ACTIVITIES (combining similar types of activities together)									
Advisory, review ³									
office	1	0	0	0	0	0	0	2	3
branch	3	0	0	0	0	0	3	3	9
Congressional activities									
office	0	0	0	0	1	1	0	1	3
branch	0	0	0	0	0	0	0	2	2
Specific publications ⁴									
office	0	0	0	4	0	2	0	1	7
branch	1	0	0	7	2	2	0	1	13
Presentations, talks									
office	0	0	0	0	0	1	0	0	1
branch	0	0	0	0	0	2	0	0	2

¹ Includes overall effort regarding media coverage and USGS interviews, answering questions, field trips, brochures, etc.

² Includes range of activities, services, and products

³ Specifically, individual efforts by C. Mortenson, B. Joyner, B. Kockleman, W. Hays (FEMA, CUSEC, Ca. Seismic Safety Commission, SEAOC, OES)

⁴ Includes Prof Paper 1515, Circ 1053 & 1061, SF quake comic book, videos -- Loma Prieta & volcano hazards, weekly seismic report, guidebook on acid rain damage to buildings in Wash. DC

OUTREACH QUESTIONNAIRE RESULTS

QUESTION #4 & #5; SUGGEST ADDITIONAL OPPORTUNITIES FOR OUTREACH & ADDITIONAL COMMENTS

OUTREACH ACTIVITY	BRANCH (responses within branch)								TOTAL
	ESG	GRA	GSG	IGP	LITH	SEIS	TECT	OFF	
Hazard communication/coordination¹	5	3		13			1	5	27
Department of Interior								1	
Conferences/workshops/meetings	5			4					
State emergency services				2					
professional organizations, boards	5			1					
Contingency plans (emergency response)				1					
Publications, non-scientist audience	5	1	12	23	1	29	3	4	78
Video		1	2	10		10			23
Video laser disc			1						1
Brochures, pamphlets			1	2		3			6
Earthquakes & Volcanoes			1	2					3
USGS (Circ, OF rept, GIS)	1			2		2	1		6
Project summaries (1-2 pages)	1			2				1	4
Computer data bases/displays (EQ)	3		2			6			11
Teaching packets/curriculum/services			3	1	1				5
EQ/fault maps (by state, foreign country)			2			4	1	1	8
Reprint outdated publications						1	1		2
Media Activity²	5	2		9		7	1	1	25
Interpretive Displays (Natl Parks, museums)			2	1	1		4		8

1 Various activities that would increase or improve communication between USGS scientists and those in need of geologic hazard information and data, including primarily officials in Fed/State/local agencies (land use, emergency management, FAA, FEMA, California Seismic Safety Commission, etc).

2 Includes press releases, radio programs, interviews, authored articles/editorials/weekly features in newspapers & popular magazines, and news inserts.

continued next page

OUTREACH QUESTIONNAIRE RESULTS

QUESTION #4 & #5; SUGGEST ADDITIONAL OPPORTUNITIES FOR OUTREACH & ADDITIONAL COMMENTS

OUTREACH ACTIVITY	BRANCH (responses within branch)							
	ESG	GRA	GSG	IGP	LITH	SEIS	TECT	OFF TOTAL
Coordinated Program	3	7		18	1	6	4	2 41
funding, OEVE to Branches/Projects	1			1			1	3
positions/people dedicated to outreach	1	3		5		2	2	13
develop priorities, give direction	1			5			1	7
improved dissem/market USGS products		1		1	1	4		7
wait & see if committment is real		2						2
coordinate requests with projects				2				2
collaborate w/outside groups				1				1
don't force everyone to do outreach				2				2
force everyone to do outreach							1	1
develop plans for volc. regions				1				1
best outreach is on a national level								1 1
USGS-sponsored f-trips for nonscientists	1	1				1	1	4
Recognition/legitimize outreach efforts	1	6		6		2	1	16
Public Forums	4	1		4	1	13	2	25
presentations/speakers for public	2			1		5		8
classroom talks/teaching	2	1			1	6	1	11
educator conferences							1	1
open house				1				1
county fairs				1		2		3
follow-up disaster meetings		1						1
Other comments				7		10		17
Public seismic network		2						
Hire lower-grade geologists to do outreach		1						
Make gov't field equip available for outreach			1					
Courtesy during field work						1		
Incorporate outreach in work plans						1		
Develop prototype EQ Info kiosk (?)						1		
Seismic Warning System (?)						2		
Re-establish ESIC in LA						2		
Critical of DOI despite significant work							1	
No more outreach by anyone given shortage of funding								1
Need USGS - Cal Tech alert system in SF							1	

Appendix H

OEVE Outreach Activities

FY1990 and FY1991

Table of Contents

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Disclaimers

- About 40% of the office responded to the questionnaire so we consider this list to be a representative subset of OEVE outreach activities. Many known to be heavily engaged in outreach responded, so the list probably captures the scope and breadth of OEVE outreach.
- There has been little attempt to verify details of entries, for example, time spent. Caution must be used in any interpretations or inferences that rely on the details entered.
- There is disparity in the details. For example, one activity entry might refer to one 1-hour talk, or to dozens of comparable 1-hour talks. A simple count of the entries beneath a name is not necessarily a measure of the time, commitment, or effectiveness of that individual's outreach.
- Time spent may refer to a full-time outreach position or to volunteer time spent on weekends giving talks or leading tours.

Explanation

This listing of outreach activities is a compilation of outreach activities entered on responses to the OEVE Outreach Questionnaire circulated to all OEVE staff in January 1992. The listing is ordered by branch and then alphabetically by surname.

Column 1: **Name:** Responders are identified by bold type.

Column 2: **Activity:** Description of outreach effort.

Column 3: **Customer Groups:** The number code refers to the customer list on iii and iv. .

Column 4: **Programs:** A code is used to allow sorting by program.

DCS; Deep Continental Studies

E)arthquake,

G)eneral Geologic, etc,

Geomag)netism,

Geoth)ermal,

L)andslide,

V)olcano,

Y)ucca Mountain.

Column 5: **Time:** person-days of personal effort, both paid and unpaid time.

Column 6: **Effectiveness:** (1-10) No criteria or definition of effectiveness was given so many declined to enter effectiveness scores. The scores probably reflect the degree of personal satisfaction and willingness to do similar activities in the future.

Column 7: **Area:** A code is used to allow sorting by region.

CA)lifornia, WA)shington, etc.

N)ation-wide,

W)orld-wide,

SCA; Southern California,

NCA; Northern California,

SFBA; San Francisco Bay Area,

PNW; Pacific Northwest,

CUS; Central US (= New Madrid eqk. impact area),

WUS: Western US

EUS; Eastern US

Column 8: **Other Contributors.** This entry allows for cross references and provides an indication of structured or organized outreach (many contributors) versus entrepreneurial outreach (no other contributors).

Customer List

Code #	Customer Group
1	Environmental Protection Agency
2	US Dept. of Defense- Armed Forces
3	US Dept. of Defense- Army Corps of Engineers
4	Government Services Administration (GSA)
5	US Dept. of Agriculture- Forest Service
6	US Dept. of Interior- National Park Service
7	US Dept. of Interior- Bureau of Land Management
8	US Dept. of Energy
9	Federal Emergency Management Agency (FEMA)
10	US Dept. of Transportation
11	US Dept. of Energy- Nuclear Regulatory Commission
12	Bonneville Power Administration (BPA)
13	US Dept. of Commerce- Tsunami Warning Center
14	US Dept. of Commerce- National Weather Service
15	US Dept. of Interior- Bureau of Reclamation
16	US Dept. of Commerce- National Institute for Standards and Technology (NIST)
17	US Dept. Housing and Urban Development (HUD)
18	US Dept. of Interior- Fish and Wildlife Service
19	US Dept of Transportation- Federal Aviation Administration (FAA)
20	National Science Foundation
21	US Dept. of State- Agency for International Development (AID)
22	US Dept. of State- Office of Fooreign Disaster Assistance (OFDA)
23	US Dept. of State- Embassies
24	Other Federal Government Agencies
25	State Geologists and Geological Surveys
26	State and Interstate Emergency Services Communities
27	Interstate Government Agencies
28	State Highway Patrols
29	State Tranportation Departments
30	State Business Regulation Departments
31	State Insurance Departments
32	State Safety Commissions
33	National Guards
34	State Legislatures
35	State Water Resources Departments
36	State Public Safety Departments
37	State Public Health Departments
38	Other State Government Agencies
39	Police, Sheriff, and Fire Departments
40	Land Use Planners and Zoning Officials
41	Building Inspectors
42	School Districts
43	Mayors, City Councils, Boards of Supervisors
44	Multicounty Agencies
45	Hospitals
46	Tax Assessors
47	Airport Managers
48	Port Authorities
49	Other County and City Government Agencies

Customer List

Code #	Customer Group
50	Service Clubs
51	Youth Groups
52	Museums
53	USGS Open House
54	County Fairs, Airshows
55	American Red Cross
56	United Way
57	Citizenry At Large
58	Other General Public Customers
59	Teachers and Schools
60	University Departments
61	Textbook Publishers
62	National Association of Science Teachers
63	Other Education Customers
64	Newspapers
65	Television
66	Radio
67	Magazines
68	Documentary and Other Film Makers
69	Freelance Writers
70	Computer Software Designers
71	Other Media Customers
72	Chambers of Commerce
73	Power Industry
74	Transportation Industry
75	Banking Industry
76	Oil Industry
77	Mining Industry
78	Contracting Industry
79	Construction Industry
80	Insurance Industry
81	Telecommunication Industry
82	Real Estate Industry
83	Aviation Industry
84	Other Industry Customers
85	Engineers
86	Architects
87	Building and Land Use Code Designers
88	Risk Managers
89	Geotechnical Consultants
90	Applied Technology Council
91	Airline Pilots Association
92	Other Professional Associations
93	United Nations Disaster Relief Office
94	International Red Cross
95	Internat. Decade for Natural Hazard Reduction (IDNHR)
96	UNESCO
97	Other International Agencies

OEEV OUTREACH Questionnaire
for FY90 and FY91 (including Loma Prieta and Redoubt)

Your Name:

Your Branch(circle one):

ESG GRA GSG IGP LITHPROC SEIS TECT OFFICE STAFF

1. What were your personal outreach activities and products in FY90 and FY91? (Use the table on the back of this sheet).

2. What is the outstanding outreach in your branch in FY90 and FY91? Why?

3. What is the outstanding outreach in OEEV in FY90 and FY91? Why?

4. Suggest some additional opportunities for outreach? (Has a potential customer requested this product or activity?)

5. Additional comments or suggestions.

Please return to Bill Bakun, USGS, 345 Middlefield Rd, MS977, Menlo Park, CA 94025 before January 24,1992.

Program Key: E=Earthquake; V=Volcano; L=Landslide, O=Other-DCS, Yucca Mtn., etc. (specify)

SAMPLES

SAMPLES

14-6

OEVE OFFICE STAFF

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
AGNEW, PAMELA R.							
CHARONNAT, BARBARA E.							
	Answered Loma Prieta phone bank	57,64,65,66,26,39	E	60	10	N	OEVE, USGS, MP
	Distributed "Next Big Eq." magazine insert	57,55,56,53,39,42,45,9,26,36	E	75	10	N	Ward, P.; other OEVE staff
	Talked with public at Open House	53	E	1.5	7	SFBA	Ward, P., and Jorgenson, P.
	Answered questions from walk-in public regarding earthquakes	57	E	3	7	SFBA	Seiders, W., and Jacobson, M.
	Responded to phone inquiries regarding earthquakes	57,64,65,66	E	6	7	CA	Seiders, W., and Jacobson, M.
	Prepared fliers for seminars and mailings	60,57,89,9	E	12	7	SFBA	Seminar Committee
	Assisted workshop convenors	60,9,16,20,25,35,89,90	E	20	8	N,W	Seiders, W., and Jacobson, M.
COOK, SARAH ANN							
	Responded to telephone and visitor requests	1,8,9,14,19,20,21,22,23,25,27,44,52,57,59,60,64,65,66,67,68,69,70,73,76,77,83,91,95	V	30		W	other OEVE personnel
COSTELLO, JOYCE A.							
DIETZ, BARBARA D.							
FRIZZELL JR., VIRGIL A.							
	Presented overview on critical eq. issues to FEMA	9	E	1	7	SCA	Wesson, Updike, Padovani, Hays
	Gave interviews to news media regarding Browning and TV Miniseries	64,65,66	E	15	9	N	
	Answered questions; drafted letters; prepared testimony for Congress	24	E	50	9	N	

OEVE OFFICE STAFF

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Managed GS/EPA Soviet exchange RE eq. prediction	60	E	40	8	N	
	Coordinated and networked with NIST	9,20,24,16	E	20	8	N	
GEE, ROSIE G.							
HAYS, WALTER W.							
	Gave presentations, workshops and policy development for hazard mapping, CDMG	25	E	60	8	CA,CUS	CDMG, state geological surveys, universities, state OES's
	Gave presentations workshops, report, and technical assistance on policy implementation, CUSEC	27	E	100	10	CUS	FEMA; NIST; state surveys & OES's; TVA; universities; DOE; Ashland Oil; State Farm Insurance
	Gave presentations, media interviews, reports, and technical assistance on policy development, NAS/NRC, IDNDR	24,95	E,V,L	180	10	N,W	Decade Committee; Loss est. Comm.; federal agencies
	Gave presentations, report, attended meetings regarding policy development, IDNDR, OSTP	24	E,V,L	20	9	N,W	federal agencies
	Gave presentations, workshops attended meetings, served as chairman of ICSSC-3 regarding policy development and implementation, ICC, ICSSC	24	E	20	10	N	federal agencies
	Gave presentations, report, attended meetings, was chairman of working group on post-eq. investigations, ICC	24	E	20	7	N,W	NEHRP agencies, OFDA, CDL
	Gave presentations, reports, briefings, attended meetings, prepared slide sets, was chairman of EERI committee	92	E	20	10	N,W	public and private sector organizations
	Gave presentations, report, attended meeting regarding policy development, OFDA	22	E	10	10	Chile, Peru, Morocco, and Indonesia	NSF, NIST, World Bank, NCEER, insurance sector reps.
	Attended meetings, NCEER	60	E	4	10	N	SUNY; Cornell; NSF; Lamont Doherty; NIST; Princeton; NSF; FEMA, Westinghouse

OEEV OFFICE STAFF

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Involved in presentations, media interviews, publications, meetings, workshops, chaired committee on eq. risk, gave technical assistance; helped develop policy UNESCO, IDNDR	96,95	E,V,L	30	10	W	UNESCO, French Assoc. of Eq. Eng.
	Gave presentations, technical assistance workshop to develop national building code, UNESCO	96	E	5	7	Morocco	ministries, universities, private sector of Morocco
	Gave presentations, technical assistance, and workshop to develop national building code, UNESCO	96	E	5	7	Tunisia	Ministries, universities, private sector of Tunisia, Algerian and Moroccan experts
	Produced presentations, document, media interviews, chaired international forum on zonation, UNESCO	96	E	2	8	W, CA	Stanford University, EERI, IASPEI, IDNDR, Calif. Dept. of Conservation
	Produced presentations, publication, chaired international committee, EERI	92	E	5	10	W	20 sponsors, USGS
	Gave presentations, workshops, media, interviews, speeches, gave technical assistance RE policy development, UNDRO, IDNDR	95,97	E	15	10	W	UNDRO, UNDP, UNESCO, 18 Mediterranean country reps., Calif. SSC
	Gave presentations and attended meetings on eq. risk, IASPEI	97	E	3	8	N,W	IASPEI; reps. from Belgium, Peru, and USA; CDC
	Attended meetings, published and/or reviewed documents, Coun. Envir. Qual.	24	E,V,L	3	8	N	25 federal agencies, and 25 NGO's
	Produced presentations, documents, slides, video tapes, FEMA	9	E,V,L	12	10	N	FEMA, universities, state and local government
	Gave presentations, attended meetings, was steering committee liaison, Univ. of Colo. NHRIC	60	E,V,L	10	8	N	NOAA, NSF, NAS/NRC, FEMA, city of Los Angeles
	Produced publication and was on editorial board of periodical, Earthquake Spectra	92,95	E	10	8	N,W	12 public and private organizations

OEVE OFFICE STAFF

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Gave presentation, and attended meetings for committee on nuclear standards, Amer. Nucl. Soc.	92	E	1	8	N	USNRC, and nuclear industry
	Gave presentations, attended meetings; safety guide report, IAEA	97	E	10	10	W	USNRC, Japan, Switzerland, France, United Kingdom, Italy, Soviet Union
	Gave presentations, attended meetings, did reviews, gave technical assistance, NRC	11	E	3	8	N	Lawrence Livermore Lab., universities, consulting firms
	Gave presentations, attended meetings; wrote publications; attended workshops, NIST	16	E	10	10	N, Japan	NIST; NOAA; NSF; COE; DOE; DO D; NCEER; Japanese agencies; GRA and ES&G
	Gave presentations, attended meetings, was on steering committee, DOE	8	E	15	7	N	DOE, NSF, FEMA, NIST, NCEER, FEMA, CUSEC
	Gave presentations, attended meetings, was on steering committee, FEMA, IDNDR	9, 95	E, V, L	5	7	N	FEMA, NSF, NOAA, DOE, Oak Ridge Universities
	Gave presentation, was on steering committee of Intl. Conf., Univ of MO, Rolla	60	E	2	7	N, W	NSF
	Gave presentations, attended meetings, was liaison for DOI, FEMA	9	E	4	7	N	federal agencies, American Red Cross
	Presentations, attended meetings; speeches; slide sets, Amer. Red Cross	55	E	2	8	N	American Red Cross
	Gave keynote speeches at meetings; publications, DOE, INDR	8, 95	E, V, L	2	10	N	Lawrence Livermore Lab.; consultants
	Gave keynote speeches at meetings; publications, EERI, IDNDR	92, 95	E, V, L	2	10	N	NSF, FEMA, NIST
	Gave keynote speeches at meetings; publications, NCEER	60, 95	E, V, L	1	10	N	NSF

OEEV OFFICE STAFF

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Gave keynote speeches at meetings; publications, Prop. Loss Res. Bur.	80	E	1	10	N	USC
	Gave speeches; publications, John Hopkins Univ., IDNDR	60,95	E,V,L	1	10	N,W	NSF, OFDA, FEMA
	Gave speeches; publications. Utah Div. Comp. Em. Mgt.	26	E	1	10	UT	FEMA
	Gave speeches; publications, French Assoc. Eqk. Eng., French AEC	97	E	3	7	France	BRGM, IAEA
	Gave speeches; publications	84,95	E,V,L	3	10	N	
	Gave presentations; publications, Defense Ind.	24	E	1	7	N	DOE, FEMA, NIST, NSF, university professors, consultants
	Gave presentations; publications, AIC	92,95	E,V,L	1	7	N	FEMA, city of Los Angeles, University of Colorado, AIC, Cornell University
	Gave presentations; publications, Inst Gas Tech.	84	E	1	8	N	DOE, industry
	Gave presentations; publications, ENAE	97	E	3	10	Italy	Italian professionals
	Gave interviews to media	64,65,66,67,69,95	E,V,L	22	10	N,CUS	
	Authored report on site effects, CDMG	25	E	5	7	N,W	CDMG; LLNL; CALTRANS; EPRI; Dames and Moore; University of California, Davis; Geomatrix Corp.
	Authored publication, gave technical assistance regarding policy development, Kean Coll. of New Jersey	59	V	2	7	N	American Red Cross; New Jersey Office of Emergency Services; New Jersey Geological Survey; media
	Involved in technical program for national commission, EERI	92	E	1	7	N	universities; NSF; NIST, FEMA; DOE

OEVE OFFICE STAFF

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Authored report on reducing losses, Utah Geol. Surv.	25,59	E	5	9	UT; Int. Mt. seismic belt	USGS Branch of Geologic Risk Assessment
	Authored publications; involved in policy proceedings, UNESCO	96,61	E	3	8	Armenia	US team of post-eq. investigators; French team; Yugoslavian team; Soviet institutes
	Authored publication, report on national hazards, Penn. Acad. Sci.	63	E,V,L	5	7	N	educators, NOAA
HUEY, LINDA R.							
JACOBSON, MURIEL L.							
	Mailed magazine insert	57	E	80	N		
	Answered telephone	57	E	80	SFBA		
	Manned exhibit at Open House	57	G	1	SFBA		
KLICK, DONALD W.							
	Announced opportunities for research proposals (Creeds and Manson drill projects)	8,20,25,35,60,77,85,89	Cont. Sci. Drilling	10.0	8	W	DOE,NSF,NASA
	Prepared, Distributed fact sheet on ICG/CSD, US CSDP	1,3,6,7,8,18,20,25,34,35,42,43,50,51,52,57,59,60,62,64,65,66,67,68,69,70,72,75,76,77,78,82,85,89	Cont. Sci. Drilling	7.0		N	
	Authored Cont. Sci. Dr. quarterly newsletter	1,3,6,7,8,18,20,25,34,35,42,43,50,51,52,57,59,60,62,64,65,66,67,68,69,70,72,75,76,77,78,82,85,89	Cont. Sci. Drilling	6.0		N	Many others
KOCKELMAN, WILLIAM J.							

OEEV OFFICE STAFF

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Distributed hazard assessments, maps, and reduction techniques	9,44,89,72,24,38,97,57,60	E,V	90.0	5	NY,CA, N, W	Olsen, A.
	Advised via phone/mail mapping, hazard-reduction techniques	9,92,44,97,72,60,25,57,2	E,V	80.0	8	CA, N, W, Universal City, CA	Shakal, T., CDMG, Brady, G.
	Authored, distributed hazards assessing, mapping, reduction techniques	9,25,26,32,26,40,41,42,43,44,57,50,52,55,59,88	E,V	180.0	7	Latin America, Caribbean, CA, N	Galloway, G., Plafker, G., other USGS
	Reviewed programs, reports, proposals, and papers	44,40,41,9,88,25,57,60,32	E,V	40.0	5	Japan, Ghana, Sierra Leone, SFBA	
	Organized geohazards reduction course in Italy	60,25,97	L,E,V	30.0	8	SCA, NE, Turkey, Italy	
	Organized panels for Intl. Conf.	9,16,25,26,32,40,44,90	L,E	5.0	6	CA, N, W	Tsoi, D.
	Served as co-editor for PP, State Geologist's Newsletter	25,57,60,88,89	E	20.0	7	PNW, UT, N	Rogers, A., Walsh, T., Priest, G., Jarva, J.
	Served as member, Calif. Seismic Safety Commission, and on its research and education committees	32,57,25,26,29,31,34,36,39,40,41,42,43,44,64,65,66,73	E	100.0	9	CA	Bakun, W., Lindh, A., Ward, P., other USGS
	Served as member on EERI Annual Meeting Planning Committee	25,26,29,31,32,36,41,44,73,74,78,80,85,86,87,88	E	10.0	7	CA, N	

OEVE OFFICE STAFF

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Greeted and directed WR Open House visitors	53	E,V,L	2.0	6	NCA	Other USGS
	Gave presentations, conference, seminars, meetings	40,41,43,44,57,9,16,25,26,32,49,44,90	E,L	30.0	7	NCA, SCA, Portland, OR, W, N	
MARSTERS, PAMELA W.							
MEDLEY, ELIZABETH P							
NEWHALL, CHRISTOPHER G.							
	Organized symposium on ash hazards to aircraft	2,14,19,47,83,91	V	30.0	9	W	T. Casadevall, S. Brantley
	Helped Govt. of Philippines (regarding Pinatubo)	2,3,21,22,23,57,60,64,65,66,67,68,83	V	180.0	9	Philippines	many other USGS people
	Worked on Federal & IAVCE, IDNDR planning	22,95	V	60.0	4	W	W. Hays, T. Casadevall, D. Swanson, others
	Helped Gov. of Philippines after M7.8 earthquake	21,22	E	30.0	5	Philippines	L. Wennerberg, G. Wreczareth, B. Sharp, J. Bicknell
NIXON, CLARISSA H.							
OLSEN, ALICE L.							
	Mailed 2500 copies of "The Next Big Eq"	57,59,60	E	50	10	N	
	Mailed hazard & haz.-reduc.materials	24,25,32,57,60,6585,97	E,L,V	250	9	CA, N,W	Kockelman
	Public contact via tel.	57	E,L,V	166	9	CA,N,W	Kockelman
PADOVANI, ELAINE R.							
PERRY, SANDRA C.							
PHELPS JR., WILLIAM E.							
RANDALOW, PEGGY ANN							
RIEHLE, JAMES							
	Gave invited talk about volcanic ash, at Kodiak, AK	59	V	2.0	2	AK	
	Gave invited talk on Cook Inlet volcanoes (at Univ. of AK)	60	V	1.0	5	AK	

OEVE OFFICE STAFF

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Gave invited talk on effects of volcanic ash, ARCO	58	V	1.0	6	AK	T. Casadevall
	Served as consultant for US Coast Guard (Kodiak) on volcanic ash in jet engines	2	V	2.0	10	AK	E. Bailey, F. Brown
	Served as consultant for Park Service Archeologists about volcanic ash samples, Katmai Nat. Park.	6	V	6.0	6	AK	
SEIDERS, WANDA H.							
	Greeted public, dist. flyers, answered questions for West. Reg. Open House	53	E	1.0	10	SFBA	Menlo staff
	Distributed "Next Big EQ" magazine	57	E	30.0	10	N,W	many others
	Set up phone bank for Loma Prieta EQ	57	E	60.0	10	N,W	Jacobson, Lopez, Charonnat
	Responded to public inquiries on earthquakes	57	E	60.0	8	SFBA	Menlo staff
	Organized workshops US and Foreign participants	57	E	60.0	8	N,W	OEVE Science convenor
	Organize workshops, meetings training, banquets, site visits, banking, lodging, field work, etc. for USSR and PRC visitors	97	E	25.0	8	USSR, CHINA	Filson, Bakun, Frizzell
UPDIKE, RANDALL G.							
	Assisted in briefings, DOI Eq. Prog.	6,7,15	E,V,L	10.0	6	N	
	Assisted in briefings Pinatubo Volcano Program	2,19,21,22,23	V	10.0	8	Philippines, AK	
	Participated in congressional discussions (budget requests-all programs)	24	E,V,L	75.0	8	N	
	Contributed in Pacific Northwest Initiative (Joint Geol. Surv. Project)	25	E	5.0	9	WA, OR, AK, PNW	
	Prepared sheets and reports to Peck, Lujan, etc., OEVE topics	24	E,V,L	20.0	3	N	
	Invited as Guest Lecture to State Geol. Surveys	25	E,V	10.0	8	PNW, CUS	
	Coordinated Interagency NEHRP (budgets, subcomm.)	1,3,9,13,14,16,20	E	75.0	4	N	
WESSON, ROBERT L.							

BRANCH OF ESG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
ACOSTA, ARNOLD V.							
AKINS, ROBERT J.							
ANDREWS, DUDLEY J.							
	Coordinated requests for & assigned speakers for 50 talks to user groups	4,39,42,50,51,52,54,57,59,82,83	E	12		SFBA	some OEVE
	Gave 3 talks to user groups	50,57	E	2		SFBA	
	Prepared & manned Open House exhibit	53	E	12	14	SFBA	H.-P. Liu, B. Westerlund, P. Spudich
ANDREWS, MARY							
ANJAL, EDNA C.							
BAKER, LAWRENCE M.							
BENNETT, MICHAEL J.							
	Participated in USGS Open House	53	E	5.0	8	SFBA	Bonilla, M.
	Lectured Collins School students on earthquakes, liquefaction	59	E	2.5	7	Cupertino, CA	
	Participated in Conference on Liquefaction/land use plan., Marina Dist.	26,40,44	E	5.0	5	SFBA	Several other USGS personnel
	Gave interviews on Marina Dist./Liquefaction	64	E	0.5	4	SFBA	
	Speech on Liquefaction, 28th Intl. Congress Engineers Club	63,85	E	3.0	5	SFBA	Several USGS Scientists
	Participated in USGS exhibit, Moffett Air Show	54	E	2.0	6	SFBA	Several USGS Scientists
BOATWRIGHT, JOHN							
	Discussed EQ risk for Newspaper article	64	E	0.2	3	SFBA, N	
	Gave speech at Exploratorium	52	E	2.0	10	SFBA	Menlo Staff provided slides
	Gave speech at SF City Museum	52	E	2.0	4	SFBA	Menlo staff provided slides
BONILLA, MANUEL G							
	Prepared exhibit on Marina Dist. for USGS Open House	53	E	31.0	8	SFBA	6 others
	Authored chapter on Marina Dist.-OFR 90-253	40,84	E	40.0	7	SFBA	
	Reviewed plans, designs for sewer (Golden Gate Nat'l. Rec. Area)	6,49	E	4.0	9	SFBA	B. Joyner
	Led field trip for Russian, Chinese scientists	97	E	2.0	8		R.D. Brown
	Gave talk on Marina Dist. (to Japanese Diet members)	23	E	2.0	8		G. Gryc
	Gave talk on earthquake hazards	57	E	1.0	7	Noe Valley, CA SFBA	
	Responded to phone questions about faults	3,11,57,84	E	1.0	7	N	

BRANCH OF ESG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
BOORE, DAVID M.							
	Provided Eq. info. Loma Prieta (to Citizens)	57	E	1.0	8	SFBA	almost everyone
	Prepared presentation at workshop on seismic hazards (Nat. Comm. Sys.)	24	E	2.0	5	N	
	Responded to questions on prediction of strong motion (to	78	E	2.0	9	N	W. Joyner
	Discussed eq findings with journalists	69	E	0.5	8	N	many others
	Participated in Press Conf. at AGU (L.P. Eq)	65	E	0.5	4	N	several others
BORCHERDT, ROGER D.							
	Co-Chair Conf. on Seismic Zonation	85,95	E	75.0	10	W	Prof. U. Shah (Stanford)
	Participated in US/Japan Workshop on Haz. Reduct.	85,90	E	8.0	8	N,W	S. Tubbesing (EERI)
	Keynote speaker at Pacific Conf. on Eqk. Eng.	85	E	8.0	10	SFBA, W	
	Gave invited speech to FEMA's Intl. Conf. on Loma Prieta Eq. "One Year Later"	9	E	4.0	9	SFBA	
	Participated in US-Chile Workshop	20	E	10.0	8	Chile	C. Poran (Univ. N.C.)
	Served on Eng. Criteria Review Board	49	E	2.0	9	SFBA	
	Served on Advisory Committee (NCEER)	20,85	E	5.0	9	N	
BRADY, A. GERALD							
	Manages and edits Newsletter (Eq. Eng. Res. Inst.)	85,86,87,88,89,90	E	48.0	10	N	J. Switzer
	Gave lunch talks to Lions Club	50	E	1.0	5	SFBA	
	Gave lunch talks to Senior Citizens	57	E	0.5	1	SFBA	
	Built pilot model demonstrating eq. response	59	E	1.0	10	SFBA	
	Provided strong-motion data, resp. to phone requests)	57	E	10.0	5	N	All strong-motion network staff
BROWN JR., ROBERT D.							
	Served as member/chairman BAREPP Policy Advisory Board	26	E	35.0	7	SFBA	
	Served as member BCDC Eng. Review Board	38	E	20.0	8	SFBA	Wallace, Borchardt

BRANCH OF ESG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Reviewed Diablo Canyon seismic program	11	E	190.0	9	CA,N	McCulloch, Lewis, Brocher, Eaton
	Reviewed grants, proposals, reduction, Loma Prieta eq.	9,26	E,L	10.0	8	SFBA	
	Gave testimony, nuclear power	34	E	3.0	5	CA	
	Gave appraiser's seminar	82	E,L	2.0	8	West Coast,N	
	Gave Chamber Commerce Lecture	72	E	2.0	6	SFBA	
	Gave Bay Area Federal Exec. Board Lecture	24	E	2.0	7	SFBA	
	Gave post-eqk. Cong. Forums lecture	24,43,57	E,L	7.0	8	SFBA	Ward, Page
	Designed, manned panel USGS Open House	57	E	2.0	4	SFBA	Clark, Ponti, other USGS
	Gave Fed. Safety/Health Council lecture	24	E	1.0	7	SFBA	
	Responded to citizen/media contacts	57,64,66	E,L	10.0	3	CA, WUS	
	Conducted field trips, NRC, OMB, foreign	24,11	E,L	10.0	5	CA	Many others
BUNDOCK, HOWARD G.							
CELEBI, MEHMET							
	Zonation Conference: Co-chief of Technical Committee	85,89	E	55	10	SFBA,W	Borcherdt, R.
	IONHDR Workshop moderator and participant	95	E	1	9	SFBA,W	Hays, W.
	Applied Biosystems, Talk/Advice - Eng.	84	E	0.25	9	SFBA	--
	Talk UC Berkeley SMIP/up-date research	60	E	1	9	N,CA	--
	Talk NCEER SMIP/up-date research	60	E	2	9	N	--
	St Louis/ St. Geologist Workshop/ speech - SMIP	25	E	2	9	CUS	--
	PUTTING THE PIECES TOGETHER Conference organizer	85,89	E	5	10	SFBA	--
	Organized ASCE and advised conference sessions	85	E	4	10	SFBA	--
CLARK, MALCOLM M							

BRANCH OF ESG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Coordinated USGS Open House exhibit	53	E	30.0	8	SFBA	Ponti, Brown, Schwartz, Hall, Niemi, Hamilton, Fosse, Powers, Ramseyer, McCrory, Rymor, Prentice
	Gave Loma Prieta speech (ASCE)	85	E	3.0	7	SFBA	
	Distributed circ. 1045	43,58	E	8.0	9	SFBA	
	Advise Grad. students/consultants	8,63,84	G	10.0	9	WUS	
	Gave Summit Road tour for ABC/NOVA	65,64	E	3.0	8	N, SFBA	Prentice
CONVERSE, APRIL MILLER							
CRILEY, COYN J.							
CUNEO, PATRICIA J.							
DIETEL, CHRISTOPHER M.							
DINGEL, EMMETT W.							
	Manned county fair exhibit	54	E,V,L	1	10	SFBA	
	Presented & discussed eqs & mapping with Boy Scouts	51	E	0.5	10	Los Gatos, CA	
DOWD, MAUREEN A.							
ETHEREDGE, EDWIN C.							
EVERNDEN, JACK F.							
FLETCHER, JON PETER B.							
	Gave speech for instrumentation engineers	81,84	E	2.5	6	SFBA	
FOOTE, LEROY J.							
FOSS, ALLYN J							
FRANKEL, ARTHUR D.							
FUMAL, THOMAS E							
GARVIN, CRISTOFER D.							
	Set up poster displays for WR Open House	53	E	3	8	SFBA	USGS
GIBBS, JAMES F							
GLASSMOYER, GARY N.							
HAMILTON, JOHN C.							
HANKS, THOMAS C.							
HARMS, KATHERINE K.							
HECKER, SUZANNE							
HELLWEG, MARGARET A.							
	Lectured middle school science class	59	E	1	7	Orinda Union School District, CA	none

BRANCH OF ESG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Talked at middle school career day	59	E,V	1	8	Orinda Union School District, CA	in Geosciences, none -other careers
	Manned Parkfield eq. model at Open House	57	E	1	7	SFBA	Most USGS MP
	Answered phones, addressed mail for newspaper insert	57	E	1	6	N,W	Ward, P., and many others
	Disseminated seismograms to university professors for teaching	60	E	0.5	7	Europe	none
HOLZER, THOMAS L.							
	Review of NCEER Grant Renewal	20	E	5	9	N	[Academics]
	Post L.P. Investigation of Marina District (OFR 90-253), SF Dept. Public Works	49	E	20	9	SFBA	Boatwright, Liu, Bonilla, Seekins, Warrick, Bennett
	Workshop -strong motion instrumentation	25	E	5	7	SFBA	Celebi
	Organized speakers bureau	50,51,52	E	1	10	SFBA	Andrews, J.; many others
	Responded to press after Loma Prieta eq.	64,65	E	15	10	N	Bakun, W.; many others
	Organized group with geotechnical consultants to oversee drilling	89	E	2	9	SFBA	Joyner, Gibbs, Mueller
HOTOP, SUZAN C.							
IRWIN, WILLIAM P.							
JOHNSON, DENNIS A.							
JONES, ALICIA H.							
JOYNER, WILLIAM B.							
	Participated on structural code-writing committee Str. Eng. Assoc. Calif., & Bldg. Seismic Saf. Comm.	85,87	E	40	10	N	
	Advised engineers & consultants, 50-100 calls/yr.	85,89	E	5	10	CA	
JUNGBLUT, WALTER L.							
KENNEDY, MARK W.							
LAJOIE, KENNETH R.							
	Discussed and supplied USGS pubs.	40	E	1.0		Oakland, CA	
	Discussed, Supplied USGS pubs.	2	E	3.5	5	SFBA	
	Discussed, Supplied USGS pubs., UNESCO	96	E	3.0	10	Latin America, Philipines	
	Supplied info., pubs, photos to Half Moon Bay citizens	57	Sea Cliff Erosion	1.5	10	SFBA	

BRANCH OF ESG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Discussed seismic hazards, articles, Oakland Trib.	64	E	0.5	10	SFBA	
	Discussed, supplied info, photos, pubs. cons. to local water district	49	L	1.0	8	SFBA	
	Supplied info, reviewed plans	5	V,E	2.0	10	Mono Basin, CA	
	Supplied info, inspec. trenches, reviewed reports	29	E	3.0	10	Ventura, CA	
	Discussed with citizens group Ventura site	57	E	1.0	10	Ventura, CA	
	Gave talk on coastal tectonics, U of Chile	60	E	1.0	10	Coast, Central Chile	
	Provided geologic interpretation to COE	3	E	2.0	4	SFBA	
	Discussed Yosemite NP with NPS	6	E	0.5	4	Mono Basin, CA	
	Coordinated EQ activity thru FEMA	9	E	2.0	2	SFBA	
	Supplied fault info to CAD Div.	25	E	1.0	5	SFBA	
LEE, MEE-YOU							
LIENKAEMPER, JAMES J.							
	Gave talk on Hayward Fault Haz. (Fremont City Plan.)	40	E	0.5	7	SFBA	
	Gave speech and field trip (Bay Area Earth Science) High School Teachers	59	E	1.5	9	SFBA	L. Gordon, M. Blanpied, W. Ellsworth, B. Kreckefer, R. Lester
	Gave talk on Hayward fault to Saber Soc.	58,79	E	1.0	8	SFBA	
	Gave talk Hayward fault (Engineers Club)	79,84	E	1.0	7	SFBA	
	Prepared/manned posters USGS Open House	53	E	10.0	7	SFBA	
	Made fault map for Bay Area newspaper insert	57	E	2.0	7	SFBA	P. Ward
	Directed helicopter over SFBA faults (National Geographic)	67	E	2.0	6	N,W	

BRANCH OF ESG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Gave newspaper interviews (Hayward fault)	64	E	4.0	7	SFBA	
	Gave TV, Radio interviews (Hayward Fault)	65,66	E	4.0	6	SFBA	
LIU, HSI-PING							
	Open House: prepared Marina District poster	53	E	2	7	CA	Most USGS MP
	Provided soil data from drillhole in Marina District to geotech. consultants	89	E	2	5	CA	Kayen, R.; Fumal, T.; Westerlund, R.
	Gave seminar on shear-wave attenuation, CDMG	25	E	1	5	CA	None
	Provided blue prints of shear-wave generator to CALTRANS	29	E	1	7	CA	Warrick, R. and Westerlund, R.
MALEY, RICHARD P.							
MCCRORY, PATRICIA A.							
	Prepared Open House display	53	E	5	?	CA	BES&G
	Assisted with eq education	59	E	1	?	SFBA	L. Gordon, M. Moore
MCGARR, ARTHUR F.							
	Gave earthquake talk and recording demo., Palo Alto Sch. Dist.	59	E	0.25	7	SFBA	
	Gave ground motion lecture, Savannah River Nucl. Power Plant	8	E	3.0	8	Savannah River-Nuclear Power Plant, GA	
	Helped map poster USGS Open House	53	E	0.5	9	SFBA	J. Andrews and others
MORK, PETER N.							
MUELLER, CHARLES S.							
	Respond to mailed requests	25,60,84	E	100		N	G. Glassmoyer
NOCE, THOMAS E.							
PONTI, DANIEL J.							
	Presented address on LPEQ future hazards forecasting (Circum-Pac Council)	97	E	7.0	8	W	
	Presented address on effects of LPEQ (Woodward-Clyde)	89	E	4.0	8	N	
	Gave talk on LPEQ effects-Haz. Reduct. (Kings Mtn. Homeowners Assoc)	57	E	1.0	7	Santa Cruz, CA	
	Gave talk on LPEQ effects/advice (Syntex Corp)	84	E	2.0	7	SFBA	
	Gave talk on LPEQ effects/advice (NASA)	24	E	2.0	7	SFBA	A. Lindh

BRANCH OF ESG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Gave talk on LPEQ effects (San Jose Lions Club)	50	E	1.0	6	SFBA	
	Served as consultant to NBC-TV News (surface rupture effects and hazards of LPEQ)	65	E	2.0	8	N	M. Clark
	Served as consultant to National Geographic Magazine for LPEQ article	67	E	3.0	8	N	M. Clark, R. Wells, other OEVE staff
	Led field trip to LP site for Gov. Reps	9,26	E	1.0	7	SFBA	
	Gave invited talk on origin of LPEQ surface ruptures (Cal State Geol. Club)	60	E	1.0	5	SFBA	
	Compiled slide set on LPEQ for OEVE speakers	24	E	8.0	7	CA	J. Andrews, several others
	Prepared/manned two posters for USGS Open House	53	E	6.0	8	SFBA	R. Wells, other BESG staff
PORCELLA, RONALD L.							
POWERS, THOMAS J.							
PRENTICE, CAROL S.							
	Lectures	25,59,60	E	10	---	CA,WA	---
	Two complete university courses	25,59,60	E	8	---	CA,WA	---
	Led L.P. Field trips	59,60	E	15	---	SFBA	---
	Consultant for NOVA programs on eqs.	65	E	2	---	CA	---
RAMSEYER, CYNTHIA C.							
	Assisted in fielding telephone calls from media, scientists, citizens After Loma Prieta Eq	1,3,5,20,2 5,36,40,43 ,44,55,57, 60,64,65,6 6,67,68,69 ,72,80,81, 13,23	E	100.0		SFBA,N,W	All scientists
	Assisted with telephone calls for Armenia earthquake	1,3,5,20,2 5,36,40,43 ,44,55,57, 60,64,65,6 6,67,68,69 ,72,80,81, 13,23	E	100.0		W	
	Helped in preparation of Loma Prieta Prof. Paper	85,88,89,90	E	10.0	5	SFBA	
	Helped out with USGS Open House	57	E	2.0	8	SFBA	other USGS personnel
RYMER, MICHAEL J.							
SAFAK, ERDAL							
SALSMAN, MARION J.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
SCHWARTZ, DAVID P.							
SEEKINS, LINDA C.							
SEMBERA, EUGENE D.							
SENA, JOE							
SHARP, ROBERT V							
	Manned Open House display	53	G	0.75	2	CA	Many USGS
	Escorted TV production group after LPE	65	E	1		SFBA	P. Wood
SIMS, JOHN D							
	Advised consultation-mercury levels, Clear Lake	1	EPA	2.0	5	NCA	
	Served on panel discussions (seismic studies)	11	E	2.0	9	N	Other NRC researchers
	Advised consultation, preparation of geologic map (Monterey sheet)	25	E	1.0	10	SFBA	
	Gave report on Green Valley Fault (City, Santa Clara)	43	E	2.0	7		
	Led field trip along San Andreas (Nature Conservancy)	63	E	5.0	10	CA	
SPUDICH, PAUL A.							
	Gave talk on Loma Prieta eq and safety	52	E	0.5	3	SFBA	
	Gave talk on Loma Prieta (electronics firm)	84	E	0.5	3	SFBA	
	Gave newspaper interview to LA Times after LP eqk.	64	E	0.2	3	SFBA, SCA	Boore, Holzer
	Manned exhibit for West. Reg. Open House	53	E	0.5	3	SFBA	D.J. Andrews
SULLIVAN, CAROL K.							
SWITZER, JOSEPHINE C.							
WARRICK, RICHARD E							
WENNERBERG, LEIF G.							
	Talked to 2 HS science classes	59	E	1		SFBA	
	Met with amateur seismologists	58	E	2		SFBA	E. Cranswick
	Talked to geol. hazards class, Hayward St. Univ.	60	E	1		SFBA	
WEST, THOMAS C.							
WESTERLUND, ROBERT E.							
	Prepared & manned Open House displays	53	E, L	7	8	SFBA	H.P. Liu, D. Warrick, J. Andrews
	Mailed magazine inserts	47,49,42	E	2	8	N	Most OEVE

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
BALDWIN, FRANCIS W.							
	Gave tours to tourists	57	E	10.0	8	CO,N	
	Answered phone enquiries regarding egks.	57,64,66	E	2.0	8	N	
	Sent out eqk. report form on felt and damage info.	31,57	E	2.0	8	N	
	Made Eqk. intensity maps	31,57	E	10.0	8	N	
BERARDUCCI, ALAN M.							
BERGMAN, ERIC ALLEN							
BORTZ, THERESA J.							
	Answered phone calls, maintained mailing lists for PDE, arranged tours, updated recorded eqk. message on answering machine.	57	E	360.0	?	N,W	
BOWMAN, ETHEL G.							
BREWER, LINDIE R.							
	Assisted in compilation /editing of US Eq Bulletin	25,57,80,89	E	240.0		N	C. Stover
	Assisted in preparation of isoseismal maps	9,25,57,80,89	E	40.0		N	C. Stover, G. Reagor, F. Baldwin
	Worked on field survey of damage after LPE	9,25,57,80,89	E	21.0		SFBA	C. Stover, G. Reagor, F. Baldwin
	Sent out questionnaires, EQ Canvass, felt & damage info.	25,57,80,89	E	120.0		N	F. Baldwin
	Lectured at Western State College and Ruland Middle School, Gunnison,	59,63	E	15.5		CO	
	Assisted in editing manuscript "Seis. of US 1568 to 1989"	25,57,80,89	E	5.0		N	C. Stover, J. Coffman
	Provided photos for slide sets of LPE for USGS and NOAA	57,59,60	E	1.0		CA	C. Stover, G. Reagor, F. Baldwin
BUFE, CHARLES G.							
	Planned, organized, & coordinated intl. earthquake training course	21,22,23	E	120	10	W	Many OEVE
BULAND, RAYMOND P.							
BUTLER, HOWELL M.							
BUZZARD, RONALD H.							
CACCIAVILLANI, JOSEPH M.							
CALDWELL, JILL E.							
	Responded to inquiries concerning the geomagnetic field	1,2,3,5,6,10,19,25,29,33,40,47,48,50,51,57,59,60,61,65,67,76,77,81,83	Geoma	2.0	9	N	Norm Peddie
CAMPBELL, WALLACE H.							
CARLSON, MARVIN A.							
CHOY, GEORGE LEONG							
	Developed software for routine computation, monthly listing	57,64,65,66,67,24,38	E	80.0	10	W	NEIC Group
	Developed software for inclusion in earthquake data report	24,38	E	100.0	8	W	NEIC Group

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Contributed to article in NEIC Semi-Annual Tech. Report	57,60,24,38	E	3.0	8	W	NEIC Group
	Presented overview of NEIC digital processing at ISOP Mtg	97,60,24,38	E	4.0	9	W	NEIC Group
	Served as NEIC Liaison with ORFEUS	60,97	E	48.0	9	W	
COSME-MERCED, VICTOR							
COVINGTON, JAMES H.							
CRAIG, KEVIN S.							
DERR, JOHN S.							
	Provided eq info to media	64,66,67,68,69	E	5	10	N, Canada, UK	
	Presented eq talks, Skeptics Assoc.	60,63	E	2		NM, MA, France	
	Arranged conference	60	E	5		N	
DEWEY, JAMES W.							
	Distributed earthquake data base	57	E	10.0	10	W	G. Dorphy, G. Reagor, M. Zirbes
	Taught short course on earthquake seismology (international)	21,22,23	E	10.0	8	W	C. Bufe
	Answered outside requests for info.	57,64,67,89	E	2.0	8	N	
DICKEY, JOHNNY R.							
DUNPHY, GERALD J.							
	Compilation of the Hypocenter Assoc. Data CD-Rolm and Assoc. Retrieval software	2,8,14,15,60,84,89	E	300.0	8	W	Susan Goter, CD-Rolm Committee
EICHORN, CHERYL LEIGH							
ENGDAHL, ERIC R.							
FILSON, JOHN R.							
	Joint Educational Demonstration project, HS teacher workbooks	59,60,61,62	E	7	7	N	
GARCIA, ALVIN							
GATSCHE, DIANNE V.							
GORDON, DAVID W.							
GOTER, SUSAN K.							
	Authored and distributed world seismicity roster	57,59,60	E	80	?	W	
	Authored and distributed Earthquakes in Utah map	57,25,59,60	E	60	6	UT	Utah Geol. Survey - Mike Machette and
	Distribution of seismicity maps(AK,CA,HI,UT,W)	57,25,26,34,59,60,85,86,89	E	30	8	N,W	Tatalaski, P.
	Compiled booklet -USGS/NEIC	57,59	E	40	?	N	Others in BGS
	Worked on Visitor's Center - Golden, CO	57, 59	E	15	10	CO	Nishenko, S.; Ward, S.
	Mailed Earthquakes in Utah map to all UT H.S.	59	E	4	8	UT	Tatalaski, P.
	Assisted with Bay Area Eq's poster	57	E	10	?	SFBA	Bakun, W.
GREEN JR., ARTHUR W.							
HAMMOND, WILLIAM R.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Advised earth science teacher, Colony Middle School on seismograph stations in the	59	E	0.1	5	Palmer, AK	
	Advised geologist, Wrangell-St. Elias Park, NPS, seismograph display in visitor's center	6	E	0.5	7	Wrangell, AK	
HARDIMAN, TERRENCE L.							
HATTORI, PAUL M.							
HERZOG, DONALD C.							
HOLCOMB, L. GARY							
HUNTER, ROGER N.							
	Prepared interactive mapping prog. for PCs	57	E	125		W	G. Reagor, CD-ROM review committee
	Produced Loma Prieta hologram	57,59,60	E	10		SFBA	D. Oppenheimer
	Operate public electronic bulletin board	57	E	60		W	
HUTT, CHARLES R.							
	Conducted tours of ASL for schools, groups, museums	51,52,59	E	10.0	10	Albuquerque, NM	S. Keane, L. Sandoval, T. Storm (BFEC)
	Installed seismograph exhibit at NM Museum of Nat. History	52	E	30.0	10	NM	S. Keane, L. Sandoval, T. Storm (BFEC)
	Gave talk on seismology and instruments to Boy Scouts	51	E	0.5	7	NM	
	Responded to press inquiries after NM Eqs	64,65,66	E	3.0	7	NM	T. Storm, S. Keane (BFEC)
	Prepared accelerometer survey of Albuq. Airports	47	G	1.0	10	NM	S. Keane (BFEC)
JACOBS, JAN M.							
	Replied to phone requests	57	E	120.0	?	N,W	
	Compiled, collected information for handouts for visitors	57	E	100.0	?	N,W	
	Edited compilations of "Significant Earthquakes"	57	E	200.0	?	N,W	W. Person
	Edited "Earthquakes" for Earthquakes and Volcanoes	57	E	84.0	?	N	W. Person
JACOBS, WILLIS S.							
	Provided earthquake data and information	57	E	130.0	8	N	NEIC staff
	Lead tours of NEIC facilities	57	E	10.0	6	Denver, CO	NEIC staff
KAUFMANN, HAROLD E.							
KAWASAKI, KOJI							
KHAN, NASREEN A.							
KIMBALL, BARBARA H.							
KLEINKOPF, NANCY E.							
KUTINA, JAN							
LEITH, WILLIAM S.							
LOGAN, NANCY J.							
LUPICA, CHARLES W.							
MACCALLUM, RENE C.							

BRANCH OF GSG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
MACRALL, CATHERINE M.							
	Answered EQ info calls	64,65,2,66,57	E	10.0	10	N	
MASSE, KAY E.							
MASSE, ROBERT P.							
MATZKO, JOHN R.							
MC MILLAN, JOHN R.							
MEDINA, EDWARD S.							
	Prepared telemetry for NM Museum of Nat. His.	52	E	1.0	5	NM	ASL Staff
	Conducted Lab tour and gathered lit. for science advisor, Steamboat Springs, CO. schools	59	E	1.0	5	CO	
MENDOZA, CARLOS							
	Gave slide presentation/seismograph demo. to Denver, CO elementary schools	59	E	3.0		CO	
	Planned 2 Geoscience career fairs for high school	59	E	1.5		CO	CMEAMESA, CO School of Mines, Alliance for Science
	Participated in meeting of Latin American Countries, Intl. Decade of Nat. Disaster Reduction	95	E	7.0		Latin America	D. Peck, B. Hamilton
	Compiled, edited, contributed to semi-annual summary of oper. and res. activities of the NEIC	25,26,57	E	50.0		W	other branch members
	Evaluate applicants to AGI Geoscience Scholarships	63		12.0		N	
MINSCH, JOHN H.							
	Provided info on significant eqs worldwide	2,3,7,8,9,11,13,14,15,21,22,23,25,26,64,65,66,55,58,39,94,96,93,57	E	94.0	8	W	Earthquake Early Alerting Staff
	Published data on 12,000 eqs, includes QED, PDE Service and PDC monthly list.	3,7,9,11,13,15,16,21,25,73,80,40,59,60,57,85,88,57	E	260.0	8	W	NEIS Staff
	Responded to various requests for earthquake info.	64,65,66,67,73,78,80,39,57,61,59,25,22	E	94.0	8	N	NEIS Staff
MURRAY, ERIC V.							
NEEDHAM, RUSSELL E.							
	Prepared & manned NEIS exhibit at IUGG mtg.	63	E	20	8	Europe, W	
NELSON, MAURICE M.							
NISHENKO, STUART P.							
	Served as advisor to FEMA on NEHRP allocation formula	9	E	14.0	9	N	D. Perkins

BRANCH OF GSG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Worked on earthquake probability studies in CA	9,25,26,39,40,44,57	E	30.0	9	CA	WGCEP
	Worked on Eq. probability studies in Utah	9,25,26,39,40,44,57	E	15.0	7	UT	D. Schwartz, ESG
	Worked on Eq. probability studies in Alaska/Aleutians	9,25,26,39,40,44,57	E	60.0	6	AK	
	Worked on Eq. probability studies in the central and eastern US	9,25,26,39,40,44,57	E	30.0	6	CUS,EUS	
	Served as advisor to NBC on miniseries "The Great LA Earthquake"	65	E	2.0	8	N	
O'CONNELL, RICHARD V.							
ODELL, LYNDON A.							
PANKRATZ, LEROY W.							
PEDDIE, NORMAN W.							
PERCIOUS, DONALD J.							
PERSON, WAVERLY J.							
	Gave lectures (Colleges, Middle School, High School, Elem. School)	59	E	7.0	10	Denver, CO	
	Dedication and Open House of the NEC	53	E	5.0	10	N	NEIC Staff
	Gave tours for training course	62	E	6.0	10	N	NEIC Staff
	Gave talks and prepared programs for Service Groups	50	E	5.0	10	Denver, CO	
	Gave speeches/advice to general citizens groups	57	E	5.0	10	Denver, CO	NEIC Staff
	Operated earthquake early alerting service	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	E	10.0	10	W	NEIC Staff
	Helped Textbook publishers	61	E	5.0	10	N	
	Gave tours for middle school, high school, and college groups	59	E	5.0	10	Denver, CO	
	Served on panel for Colo. science teachers	59	E	2.0	10	CO	
	Earthquakes in "Earthquakes and Volcanoes"	1,5,7,8,9,13,14,15,25,40,52,57,59,77	E	5.0	8	W	
	Lecture at Houston, TX magnet high school	59	E	3.0	10	Houston, TX	

BRANCH OF GSG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Served on Black History Month panel and discussed USGS employment opportunities for minorities	59	E	1.0	10	Boulder, CO	
	TV, radio, newspaper interviews	64,65,66	E	1.0	10	W	
	Appeared on education channel (12)	57	E	0.5	10	Denver, CO	
PETERSON, JON R.							
PRESGRAVE, BRUCE W.							
RACHLIN, JACK							
REAGOR, BOBBY G.							
	Supervise, manage, update eq. data base system Mc Mail Telegram	1,2,3,4,5,6,7,8,9,11,15,20,25,26,29,40,50	E	240	10	W	---
	Advise and assist global hypocenter data base CD-Rolm	55,57,59,61,64,67,68,69,70,73,74,76,77,78,79,80,81,82,85,86,88,89,94	E	24	10	W	---
RENZELMAN, GREGORY D.							
REYNOLDS, ROBERT D.							
	Conducted visitors on tour of seismic systems at ASL	2,78	E	2.0	5	NM	
	Provided telephone explanations of specific systems for vendors	84	E	3.0	4	N	
ROSS, JERRY D.							
SAUTER, EDWARD A.							
SAVAGE, JACQUELINE E.							
SCHMIEDER, WILLIAM H.							
SIKES, KATHRYN A.							
SIPKIN, STUART A.							
	Authored catalogs - Eq. source	60,89	E	10.0		W	Russ Nedham
	Prepared waveform/source plots for monthly PDE listing	60,89	E	3.0	8	W	Zirbes, M., Engdahl, B., Needham, R.
	Gave lecture in Seismology (Internl. train. course)	95,21	E	1.0		W	Bufe, C., and most of NEIC staff
	Supervised CD-ROM production and distr.	60,89	E	1.0	9	W	M. Zirbes
SPENCE, WILLIAM J.							
	Prepared circular on Browning prediction	26,57,64	E	80		CJS	B. Herrmann, A. Johnston, G. Rodger
STOVER, CARL W.							

BRANCH OF GSG

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Authored/edited U.S. Earthquakes-Annual Bulletin	3,7,9,11,13,15,25,26,31,36,40,60,73,78,79,80,85,88,89	E	120.0	9	N	
	Analyses/produces State Seis. Maps	25,31,40,44,60,73,79,80,85,87,89	E	20.0	8	N	Glen Raeger
	Authored OFR -Prelim. isoseismal map-damaging eqs	7,11,15,26,40,60,64,69,80,85,89,25	E	20.0	8	N	others
	Provided Eq Report Questionnaires data upon request.	25,60,80,85,89	E	60.0	8	N	others
TAGGART, JAMES N.							
TEETER, TOMMIE L.							
	Prepared packet of eq info for teachers and school children.	59,63	E	5.0	10	NM	
	Answered eq info calls.	64,65,2,66,57	E	10.0	10	N	
TOWNSHEND, JOHN B.							
UNGER, JOHN D.							
VARNER, CAROL A.							
WALZ, JANET A.							
WILSON, LANNY R.							
WOOD, JOHN D.							
WORTHINGTON, EDWARD W.							
	Provided geomagnetic data recorded in US and USSR to Geophysics Contractors.	2,84	Geomag.	10.0	10	W	Dr. A. W. Green
	Provided description of NGIC.	60	Geomag.	0.5	10	CO	Lanny Wilson
YOUNG, ROBERT L.							
ZIRBES, MADELEINE D.							
	Manned booth of NEIC products/services at AGU	60,89	E	20.0	10	W	

BRANCH OF SEIS

NAME	Activity	Customer Groups	Prog-rams	Time Spent	Eff.	Areas	Other Contributors
ALLEN, GREGORY L.							
ALLEN, MARY E							
BAKUN, WILLIAM H.							
	Developed SFBA seismicity poster	57	E	40	9	SFBA	Olsen, Sewalter, Tau Rho Alpha, Goter
	Developed Postcard for Open House	53,57	E	5	6	SFBA	Prescott
	Organized & manned Open House exhibit	53	E	3	8	SFBA	Prescott, Wentworth, Simpson, Johnston
	Presentations at 2 post-Loma Prieta Eqk. press conferences	65	E	2	9	SFBA	Prescott, Holzer
	Speaker at annual EERI mtg.	85	E	1	8	N	Thatcher
	Enlarged Bay Area seismicity poster for public displays(barry Museum, UCB, Stanford, etc.)	52	E	5	7	SFBA	Goter
	Produced video after Loma Prieta eqk., Shown on public TV.	57,65	E	5	8	SFBA	Prose, Holzer, Prescott, Lindh, Borchardt, Johnston
	Developed Seismic Early Warning System, warnings of Loma Prieta aftshks. sent to CALTRANS	26	E	5	10	SFBA	Van Schaack, Jensen, Fischer
	Presentation to Calif. Seismic Safety Commission	32	E	0.5	7	CA	
	Presentation at 4 EERI Loma Prieta briefings(Washington, Boston, Sacramento, Seattle)	85	E	3	7	N	Ellsworth, Mickail
	Presentation at UCLA Intl Conf. on nat. hazard reduction	97	E	10	5	W	Hays
	6-8 Television interviews	65	E	2	6	SFBA	
	6-12 Newspaper & magazine interviews	64,67	E	2	6	SFBA	
BENZ, HARLEY M.							
BROCHER, THOMAS M.							
	Prepared figures used in press briefing on BASIX at Fall AGU	64,65,66	E	2.0	7	SFBA	Others
	Reviewed geophysical work by PGE at Diablo Canyon for NRC	11	E	15.0	7	Diablo Canyon,CA	B. Brown, S. Lewis, D. McCulloch, D. Schwartz

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Prepared OFR describing seismic reflection data near Yucca Mtn.	8	Y	130.0	5	NV	P. E. Hart
BURDETTE, THOMAS R.							
	Set up & manned San Mateo Co. fair booth	54,57	E,V	2		SFBA	Many MP staff
	Presentations & tours for local service clubs	50,51,57,59	E,V	15		SFBA	
	Answer media questions	64,66,67,69	E,V	5		N	
	Reply to public inquiries	57	E,V	5		N	
	Led Parkfield tours	57,40,39,42,44,49,85,89,64,65,66,67,68,69	E	30		CA	
	Presentations on Parkfield	50,57,55,73,81	E	10		CA	
	Presentations after Loma Prieta Eqk.	57,43,34,50,51,85,86,89,64,65,66,69	E	15		SFBA	
	Interviews and presentations, Loma Prieta Refraction profile	39,50,59,64,66	E	5		SFBA	
	Presentations on New Madrid Refraction profile	50	E	0.5		CUS	
	Presentations on Loma Prieta Refraction profile, State Parks, State Forestry	38	E	2		SFBA	
BUTLER, FREDERICK L							
CALLAHAN, RUTHMARIE V.							
	Provided telephone information for news media	64,65,66,67,68,69,70	E	6	10	NCA	Various OEVE
CATCHINGS, RUFUS D.							
	Conducted tour, provided info. to Cong. Emerson, gave TV interviews	64,65	E	2.0	10	CUS	Mooney, W.
	Instrumented seismic experiment at Kirby Cove, G.G. Bridge (request of NPS)	6	E	2.0	8	SFBA	
	Provided info. on Yucca Mtn to DOE	8	Y	2.0	5	N	All Yucca Mtn. projects
	Gave speech to High School in N.C.	59	G	3.0	10	NC	
	Gave talks to Univ. Depts.	60	DCS	3.0	7	N	
	Conducted seminar at Stanford Univ. (Oil Indust. Report)	76	DCS	3.0	8	N	
	Gave interviews, photo sessions for Science text books (Science & Engineering)	61	G	1.0	8	N	
	Gave 10 TV Interviews re CUS Reflection Exp.	65	E	2.0	6	CUS	

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Gave 6 Radio Interviews re CUS Reflection Exp.	66	E	1.0	6	CUS	
CHOUET, BERNARD A.							
	Newspaper interview	64	V	0.5	3	AK	
	TV interview	65	V	0.3	5	AK, CA	
	Nat. Geogr. Magazine interview - Stromboli	67	V	0.3	5	S. Italy	
	Gave volcano seismology course, Univ. Geneva	60,95	V,E	70	8	W	
	Advised about volcano unrest, Govt. of Columbia, US Embassy in Bogota	22,23,21	V	30	9	Colombia	
	Time Magazine interview - Pinatubo	64	V	1.5	1	CA,N	
	Advised on hydrofrac process	76	V,E	1.5		AK, TX	
COAKLEY, JOHN M							
CRILEY, EDWARD E							
CROKER, DAVID S.							
CURTIS, LINDA A.							
	Assisted in Fannie Mae EQ Awareness Day	54	E	0.5	8	SCA	Hwang, L.
	Answered phone calls from public	57	E	12.0	8	SCA	USGS Pasadena staff
	Provided info. material to students	57,54,51,50,55,59	E	3.0	10	SCA	USGS Pasadena staff
	Answered media calls	64,65,66,67,68,69	E	6.0	9	SCA	USGS Pasadena staff
	Assisted speaker at Stanford Professional Women	50	E	0.3	9	SCA	L. Jones
	Assisted Ham Radio Operators	50	E	0.3	8	SCA	
	Assisted S. Calif. Eq. Prep.	36	E	0.3	8	SCA	
DAISS, CHARLES F.							
	Supported Seismograph display, Calif. Acad. Sci.	52	E	0.5		SFBA	
DAWSON, PHILLIP B.							
	Supported Seismograph display, Mt. Shasta Mus.	52	E,V	3	8	NCA	J. VanSchaack, D. Farrell
DELLAFOSSE, MARTHA S.							
DIETZ, LYNN D.							
	Manned display at rally, KNBR	44,57	E	0.8	7	SFBA	S. Walter
	Set up & manned booth, San Mateo Co. OES	44,57	E	1	7	SFBA	L. Gordon, J. Mottram
	Gave talk, Menlo Park Homeowners Assn.	57	E	0.6	6	SFBA	
	Gave talk	50	E	0.6	5	SFBA	

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Manned booth, Moffitt Airshow	54	E	1	7	SFBA	Many MP staff
DOLLAR, ROBERT S.							
EATON, JERRY P							
	Served as member of CEPEC	26	E	8	5	CA	
	Gave lecture at Cal State on use of P.C.'s	63	E	6	8	CA, W	
	Responded to media	64,65	E	2	5	SFBA	
EBERHART-PHILLIPS, DONNA							
	Public lecture on Loma Prieta	57	E	1.5	10	SFBA	K. Lajoie, R. Borchardt
	Conducted tour of CALNET facilities	76,77	E	1	5	N	J. VanSchaak, C. Aviles, P. Reasenber
	Answered telephone after magazine insert	57	E	0.25	5	SFBA	Many others
	Media interviews	64,66	E	0.5	2	SFBA, Monterey, CA, N	Many others
	Lectured on San Andreas fault, Pepperdine Univ.	60	E	3	7	SCA	
	Gave seminar on Women in Science, CalTech	60	E	0.5	8	SCA	
ELLIS, JAMES O							
ELLSWORTH, WILLIAM L.							
	Gave public lecture	57	E	5	8	SFBA	
	Gave lecture - hazards	26,40,45,76	E	2	5	SFBA	
	Conducted science fair classes, Menlo Park Sch. Dist.	59	E	0.3	6	SFBA	
	Gave lecture, Geotech	84	E	0.3	8	SFBA	
	Authored articles, Physics News, Geophysics News	64,69	E	1	4		
	Gave lecture, Hewlett-Packard in Santa Rosa, CA	84	E	0.5	7	SFBA	
	Gave lecture - frontiers, NAS Symp.	24,60	E	15	8	N	
	Member, AGU Public Info. Comm.	64,66,69,60,57	E,V	6	8	N	
EVANS, JOHN R.							
	Answered phone inquiries after Loma Prieta	57	E	4.0	7	SFBA	many
	Assisted in mailing Mag insert	57	E	3.0	7	N	many

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Prepared proposal to Caltrans for foundation studies of bridge structures	29	E	20.0	4	CA	
	Responded to inquiries from public	57	E,V,Geoth	2.0	7	CA	
	Helped USGS West. Reg. Open House	53	G	1.0	7	CA	
EWELL, BERT							
FARRELL, DONALD							
FISCHER, FREDERICK G.							
	Advisor for rebuilding of seismic net, Pinatubo Volc.	2,21,22,23	V	14	9	Phillipines	Most of CVO staff
	Prepared seismograph for public displays	53,54	E	0.25	9	SFBA	None
	Prepared display and distributed printed and verbal info. at Co. fairs, airshow, etc.	54	E	4	8	SFBA	Rambo, W.; Tsoi, D.; USGS MP volunteers
FOGLEMAN, KENT A.							
	Released seismicity reports of south and central Alaska	13,25,60	E	48	8	AK	None
	Distributed "Next Big Earthquake" insert	59,57	E	1	8	N	OEEVE staff
	Gave tours of Bldgs. 7 and 8	57	E	1	7	SFBA	none
	Manned souvenir table at Open House	57	E	0.5	8	SFBA	other people
	Assisted in creation of Alaska Eq. Information Center	13,25,60,57,60	E	4	7	AK	other people
	Informed public via phone about seismicity in CA and AK	57	E	2	7	AK,CA	None
FUIS, GARY STEPHEN							
	Gave talk on eq. preparedness	59	E	1	8	SFBA	Palo Alto Fire Dept.
	Assisted in Open House exhibit	53	DCS	7	10	SFBA	most USGS MP
	Advised insurance company	80	E	0.25	7	CA	Lindh, A.
	Distributed eq. pamphlet, map	57,82	E	0.5	8	SFBA	many USGS OEEVE staff
	Explained Loma Prieta seismic experiment	64,65,67	E	0.5	8	SFBA	Eberhart-Phillips, D.; Catchings, R.; Burdette, T.
	Answered phones regarding Loma Prieta eq.	57,2	E	2.5	10	SFBA	many USGS OEEVE staff
	Conducted seminars, Cal State Hayward, CalTech, Rice Univ.	60,92	DCS	60	7	CA, TX	most USGS MP
GEDDES, DONALD J.							
GIVEN, DOUGLAS D.							
HALL, WESLEY D.							
	Supplied equipment for sites at Mt. Pinatubo	2	V	5.0	9	Philippines	Radio's from operational staff
	Manned exhibit USGS Open House	53	DCS	0.5	5	SFBA	Menlo staff

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Supplied 8 discriminators to Mt. St. Helens Visitors Center	5	V	1.0	9	WUS	
	Repaired 2 discriminators for College of Siskiyou's, CA Acad. Sci, & San Juan Bautista	60	E	0.1	9	CR	
	Provided technical support for displays, Pt. Reyes	24	E	0.2	8	SFBA	
	Repaired 1 discriminator for Sonoma State College	60	E	0.1	9	SFBA	
	Built and Maintained exhibit, Chabot School	60	E	1.0	8	SFBA	
HARLOW, DAVID H							
	Prepared/manned poster for Open House	53	V	3.0	8	SFBA	Menlo staff
	Gave speech on Mt. Pinatubo response-to SFSU	57,60	V	1.0	5	SFBA	
	Gave talk to CDMG on Role of Monitoring-Mt. Pinatubo	25	V	1.5	8		State Officials, Scientists
	Pinatubo Volcanic response, advised Clark AFB	21,22,23,24,2	V	60.0	10	Philippines	many
	Gave newspaper, radio, TV interviews about Pinatubo eruption	57,64,65,66	V	7.0	8	N	USGS contributors, R. White, B. Tilling
	Filmed interview for NOVA on Pinatubo eruption	68	V	3.0	10	N, W	CVO Scientists, Several USGS people
HEATON, THOMAS H.							
	Coordinate CUBE real-time seismic info. system	2,3,9,19,73,74,81	E	30.0	10	SCA	Most of Pasadena staff
	Served on Policy Advisory Board SCEPP	9,26,36,39,40,43,55,59,75,80	E	25.0	8	SCA	Jim Mori
	Served on NAS Committee (real-time Seis.)	24	E	10.0	7	N	
	Served on Calif. Eq. Hazards Zonation Mapping Committee	25,32,40,85,86,87	E	4.0	6	CA	
	Lectures, workshops on Cascadia Eq. Hazards	9,25,32,85,86,87	E	6.0	9	PNW	
	Served as member of NEPEC	9,25,26	E	7.0	7	N	
HILL, DAVID P.							
	Authored volcanic response plan	5,6,9,15,25,26,28,29,39,42,44	V	150.0	10	Mammoth Lakes, CA	Johnston, M., Langbein, J., Miller, D., Mortensen, C., Pitt, M., Rajstaroer, S., McNutt, S.
	Advised United Command Meeting	5,6,9,15,25,26,28,29,39,42,44	V	3.0	10	Mammoth Lakes, CA	

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Authored Long Valley Caldera Monitoring Report	5,6,9,15,2 5,26,28,29 39,42,44	V	12.0	7	Mammoth Lakes, CA	Pitt, M., Johnston, M., Langbein, J., Mortensen, C., Mueller, B.
	Coordinated contracts with local officials	5,6,9,15,2 5,26,28,2, 39,42,44	V	14.0	10	Mammoth Lakes, CA	
	Served as Long Valley media contact	64,65,66,6 7,68,69	V,E	2.5	?	Mono/Inyo Co., CA, N	
	Gave lectures/field trips	50, 57, 77, 76, 89	V,E	4.5	?		
HIRSHORN, BARRY							
HITCHCOCK, TIM							
HOM, DAISY							
	Mailed magazine inserts	57	E	10	6	CA	OEVE
HWANG, LORRAINE JOYCE							
	Provided Television, newspaper, radio, interviews after eqs.	64,65,66	E	2.0	7	SCA	USGS, Caltech staff, Pasadena
	Manned Eq. Disaster Fair, El Cerrito High School	59,57	E	0.5	8	SFBA	Red Cross, Sheriff, Fire, Hospital, Private Groups
	General Earthquake talk- Fannie Mae	82	E	0.5	9	SCA	Red Cross, Fire Dept.
	Gave talk on Careers for Women in Earth Science (Sacred Heart-La Canada, CA)	59	E	0.5	9	SCA	Other speakers, Panel members
IYER, MAHADEVA							
JACKSON, THOMAS C							
JENSEN, EDWARD G.							
	Gave speech on Loma Prieta to 5th and 6th Grades	59	E	0.5	7	SFBA	
	Constructed early warning alarm	29	E	60	8	SFBA	Seis. Br. instrument development group
	Authored report on amp-filter circuits, Domestic & foreign eq network operators	38,58,63	E	4	6	W	
JOLLY, ARTHUR D.							
JONES, LUCILE M.							
	Gave TV interviews-NOVA	68	E	2.0	10	N	
	Gave interview (Today show)	65	E	2.0	10	N	
	Gave interview (Mathworks, BBC Documentary)	68	E	0.5	9	Great Britain	

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Gave interview (local news on Eqs.)	65	E	24.0	7	SCA	
	Gave interviews (Newspapers/Radio)	64,66	E	6.0	7	SCA, N	
	Gave EQ demos (elementary schools)	59	E	3.0	8	SCA	
	Gave lectures (Eq. Hazards) part of training seminars by SCEPP	44,46,42,39,59	E	2.0	7	SCA	
	Gave lectures on Eq. Research (Professional groups)	89	E	1.2	8	SCA	
	Advised OES and CEPEC on Eq. Hazards	26	E	3.0	8	SCA	
	Answered phone calls on Eq info.	57	E	2.0	6	SCA	
	Serves as member, L.A. City Plan. Dept. Advisory Committee (Seis. Safety element)	40	E	10.0	5	SCA	
	Gave talks on Eqs (local groups)	80,50,51,59	E	5.0	7	SCA	
	Developed real-time info. (local Gov. and industry)	3,2,25,26,29,39,73,74,81	E	50.0	10	SCA	T. Heaton, J. Mori, D. Given, R. Dollar
	Wrote article on Sierra Madre Eq. for So. Ca. Eq. Bull. (SCEPP)	9,26,39,40,43,44,57,72,73,74	E	12.0	8	SCA	D. Morton, E. Hauksson
	Provided Eq. Preparedness Training (for Day Care Ctrs., Schools)	59	E	2.0	7	SCA	
JULIAN, BRUCE R.							
	Advised for Geysers area	57	E,V,Geoth	10	5	SFBA	G.R. Foulger
	Advised for Iceland area	58	E,V	2.5	5	Iceland	G.R. Foulger
	Distributed literature & lectured at 1-day open house	58	E,V	1	5	Iceland	
	Conducted seminar on Geysers, UNOCAL	73 (UNOCAL	E,V,Geoth	1	5	NCA	G.R. Foulger
KEMPE, JON T.							
KLEIN, FRED W.							
	Designed Computer Display, for Open House	53	E	25	9	NCA	Walter, S.
	Produced video tape-Loma Prieta eq.	50,52,57,59,60,68,70,3	E	50	8	NCA	Walter, S.
	Showed video tape to service org.	50	E	1	8	NCA	Walter, S.
	Produced video tape-Central CA eq. animation	50,52,57,59,60,68,70,3	E	15	5	NCA	Walter, S.

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Designed Bldg. 7 display	57,65	E	17	incomplete	NCA	Silverman, S., Walter, S.
	Showed computer animation to reporters	65,68	E	2	7	NCA	Walter, S.
KOESTERER, CHARLES L.							
KOHLER, WILLIAM M.							
LAHR, JOHN C.							
	Mailed OFR model kit to teachers/newspapers	57,59,64	E	2.0	8	CA	Gordon, L.
	Gave lecture to Acuson (Med. Tech. Ind.)	84	E	2.0	5	SFBA	
	Prepared OFR-oblique map	57,59	E	5.0	3	SFBA	Alpha, T.
	Answered phones after Loma Prieta eq	57,64,65	E	2.0	8	SFBA	Many other USGS
	Prepared OFR model kit of Loma Prieta eq	59,57,64	E	14.0	8	CA	Alpha, T.
LAIRD, BRIAN T.							
LARSEN, SUSAN							
	Manned county fair exhibit	54	E	2	10	SFBA	Other USGS, Family members
	Coordinated New Madrid press packets	64,65,66	E	2	8	TN, MO, AR, IL	USGS
LEE, WILLIAM H. K.							
LESTER, FREDRICK WILLARD							
	Prepared Open House displays on seismic network	53	DCS	1.5	9	SFBA	Most USGS MP
	On duty at San Mateo County Fair explaining earthquakes and earth science	54	DCS	0.5	8	SFBA	Some USGS MP staff
	Gave 6 talks to public	50,52	E	2.25	5	SFBA	none
	Was interviewed by students regarding eqk. info. and jobs in science	60	E	0.5	6	SFBA	none
	Provided recent eq. info. and data via recorded message	57	E	30	8	CA	2 others
	Provided newspaper with latest eq. info. on Hollister area	64	E	4	7	SFBA	1 other
	Conducted tours of USGS Menlo Park facilities, especially Bldg. 7	50,51,57,59	E,V,L	1.5	6	W	2 others
	Helped maintain and interpret seismographs at several locations	52,60,6	E	1	5	NCA	2 others
	Gave news media interviews	64,65,66,67,68,69	E,V	6	8	NCA	many others in MP

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Notified public of recent earthquakes (usually via telephone)	3,6,9,26,81,29, 5	E	0.5	9	CA	3 others
	established emergency notification system regarding eq. activity	3,26,81	E	2	6	CA	3 others
	Helped public access/obtain eq. data	57,73,78	E	4	4	CA	none
	Mailed out newspaper insert	57	E	0.25	8	N	others
	Responded to phone calls asking for eq. info.	57	E,V,L	100	7	W	Many USGS MP staff
	Responded to phone, letter, or E-mail requests for info. on earthquakes	3,5,6,7,8,15,25,26,29,39,40,59,60,64,65,66,67,68,69,73,74,78,79,80,82	E	35	9	CA	others
LINDH, ALLAN G.							
	Prepared weekly seismicity reports for 150 newsp. & TV	8,11,15,20,24,25,26,42,52,59,60,64,65,66,67,70,73,80,81	E	50	7	W	S. Walter, B. Hishoru, N. MacGregor-Scott
	Gave public talks on eq risk	25,26,39,42,43,44,57,59,60,62,84	E	20	5	CA	
	Press interviews	64,65,66,67,68,69	E	10	7	CA	
	EQ notification to Calif. Off. Emer. Serv.	3,26,64,65,66	E	10	6	NCA	S. Walter, R. Lester, A. Michael
LOCQUIAO, ALEJO M.							
LUETGERT, JAMES H.							
	Advised media on LPE calibration shot experiment	64,65,66	E	8	8	SFBA	P. Jorgensen
	Advised media on PNW seismic refraction experiment	64,65,66	E	20	8	PNW	P. Jorgensen, W. Mooney
LUTTER, WILLIAM J.							
	Manned poster (TACT) USGS Open House	53	DCS	0.3	8	SFBA	Fuis, Brocher, Page
	Gave speech on Eq. Bulletin dist. in newspaper (Toastmaster Club)	57	E	0.5	8	SFBA	
MACBETH, HAROLD C.							

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
MACGREGOR-SCOTT, NANCY							
	Gives daily earthquake info. update (via phone recording)	57	E	60.0	9	NV, CA	R. Lester
	Reports daily seismicity for Mammoth	24,5	E	6.0	10	Mammoth Lakes, CA	R. Lester
	Reports earthquake info. update (written)	57	E	12.0	4	SFBA	R. Lester
	Responded to telephone requests for information	57	E	60.0	10	N	R. Lester
	Responded to telephone requests for data	63,25,26,40,76,73,84	E	12.0	8	SFBA	R. Lester
	Assisted in town preparedness meetings	39,42,43,64,58	E,L	5.0	7	SFBA	B. Page
	Demonstrated seismometer, distributed brochures, answered requests at County Fair	54	E,V,L	5.0	8	SFBA	Menlo staff
	Gave talks on seismology, displayed poster, dist. brochures at San Jose State Univ. Science Conf.	63	E	4.0	9	SFBA	SJSU, SCU, Stanford U.,
MCCLEARN, ROBERT							
	Radio rebroadcast of eqk. bulletin, US Army MARS network	2	E	1	10	CA, NV	
	Established radio link, to Calif. OES	26	E	24	10	CA	
	Established VHF communications link to FEMA, SF	9	E	1.5	10	CA	
	Mailed newspaper inserts to Stockton Sch District	42	E	0.5	?	Stockton, CA	
MEAGHER, KAREN L							
MENDOZA, GONZALO							
MICHAEL, ANDREW J.							
	Prepared/manned USGS Open House poster	53	E	5.0	8	SFBA	Many
	Manned USGS booth at SMC Fair	54	E	1.0	6	SFBA	Many
	Gave speeches Lions/Rotary clubs	50,51	E	3.5	6	SFBA	
	Conducted workshop for SJSU Teachers	59	E	4.0	10	SFBA	
	Distribute report to Computer networks	57	E	30.0	8	CA	Walter, S., et. al.

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Respond to OES, Media on eqk predictions by amateurs.	57,25,26	E	15.0	8	SFBA	Fischer, F.
MOONEY, WALTER D.							
	Media interviews, New Madrid FZ	64	E	1	8	CUS	R. Catchings, Crustal Studies staff
	News conferences, New Madrid FZ	65	E	1	9	CUS	R. Catchings, Crustal Studies staff
	Media interviews	64	E	0.5	8	PNW	J. Luetgert, Crustal Studies staff
	TV interviews	65	E	0.5	9	PNW	J. Luetgert, Crustal Studies staff
MORI, JAMES J.							
	Gave talks on eqk. haz.	50,51,55,72,89	E	5	7	SCA	
	Gave talks on Pinatubo	52,0,89	V	3	8	SCA	
	Served on preparedness project, SCEPP	25,26,39,40,42,57,72	E	4	4	SCA	T. Heaton, L. Jones
	Responded to tel. inquiries	57,64,66	E	3	6	SCA	Other MP staff
	TV interviews - hazards, KNBC	65	E	0.5	7	SCA	
	Media interviews - sonic booms	64,65	E	1.5	7	SCA	
	Media interviews - Pinatubo, Good Morning America, etc.	64,65,66,68	V,E	5	9	N, Philippines	Other USGS & Philippine scientists
MOSES, MICHAEL J.							
NORRIS, ROBERT D.							
	Monitored seismic activity at Redoubt, notified, Fed. , State Agencies of eruptions	14,26,29,64,65,66,73,76	V	21.0	10	AK	AVO staff, CVO others
	Gave talk on operation of seismic network, Deming, WA	42,57	E	1.0	8	WA	U of WA., FEMA, WA State Emer. Services
	Answered inquiries about Mt. St. Helens eruptions	19,64,65,66,84	V	0.3	8	WA	CVO, USFS, U. of WA
	Gave multi-media presentation on volcanoes, Seattle schools	59	V	1.5	8.5	Seattle, WA	one volunteer
	Answered inquiries on seismic refraction experiment (Pac. NW)	5,27,57,60,64,66,73,77,82,84	DCS	60.0	7.5	WA	Menlo Park staff, U. of WA., others
	Authored report on monitoring history and land management of Cascade volcanoes	5,6,25,27,57	V	180.0	8	WA,OR,CA	

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Answered inquiries concerning seismic refraction experiment (New Madrid)	57	DCS	10.0	8	CJS	Menlo staff, area Universities
OLSON, JEAN ANN							
	Gave talk to service clubs	50	E	3	2	SFBA	
	Gave talk to city officials and citizens, Los Gatos, Saratoga, Monte Sereno	43,57	E	1	5	SFBA	
	Gave talk at Hayward St. Univ. science fair	57	E	1	2	SFBA	
	Gave talks, Santa Cruz Co. Sch. Dist.	59	E	3	2	SFBA	
	Helped prepare newspaper insert	57	E	14	8	SFBA	B. Bakun, C. Gortner, P. Showalter, et al.
	Prepared epicenter map and cross section, Nat. Geographic, Bay Area Seismicity poster	67	E	14	10	W	
	Prepared Open House poster	53	E	7	8	SFBA	C. Wentworth, P. Showalter, most USGS staff
OPPENHEIMER, DAVID H.							
	Speaker, NASA	83	E	0.5	4	SFBA	None
	Speaker, SYNTEX	84	E	0.5	4	SFBA	
	Speaker, Bay Area Environ. Ass.	89	E	0.5	4	SFBA	
	Speaker, Univ. Santa Clara	60	E	0.5	4	SFBA	
	Speaker, Palo Alto Police	39	E	1.25	7	SFBA	
	Radio talk show expert, Kcbs SF	66	E	0.25	4	SFBA	
	Radio talk show expert, KGO SF	66	E		4	SFBA	
	Open House	53	E	0.5	6	SFBA	Branch of Seismology
	Testimony, CEPEC	25,26	E	0.5	8	SFBA	Branch of Seismology
	Distributed eq data & info to public	64,65	E	3	7	NCA	Rick Lester, CALNET staff
	Distributed eq data & info to public	89	E	5	10	NCA	Rick Lester, CALNET staff

BRANCH OF SEIS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Distributed eq data & info to public	57,60	E	4	8	NCA	Rick Lester, CALNET staff
PAGE, ROBERT A.							
	Organized 5-year EHRP circ.	9,16,20,25,26,44,60,85,89	E	20.0	10	N	Many others
	Organized Loma Prieta staff response phonebook	25,26,36,64,65,66,67,57	E	15.0	10	SFBA,N,W	Many others
	Helped plan/conduct Loma Prieta forums	24,57	E	5.0	10	SFBA	Ward, P, Brown, B.
	Organized Loma Prieta symposium, 1990 AAAS Mtg.	59,64,65,66,60	E	5.0	3	N	5 or 6 others
	Participated in EERI earthquake panel	26,36,29,39,40,79,85	E	2.0	10	AK	5 or 6 others
	Contributed to Redoubt circ.	19,26,25,26,36,57,59,43,39,83	V	5.0	10	AK	Brantley S. and others
	Contributed to Loma Prieta Circ 1045, helped prepare pamphlet	57	E	5.0	10	NCA	Ward, P.
	Assisted in hazard updates/press releases	19,6,26,36,27,64,66,76,83	V	10.0	10	AK	many others
	Gave High School class talk on Redoubt Volc.	59	V	0.5	5	SFBA	
	Manned poster at USGS Open House	53	V	0.5	8	SFBA	Menlo Park staff
	Manned poster at USGS Open House	53	DCS	0.5	8	SFBA	Menlo Park staff
	Prepared OFR model kit of Loma Prieta eq	57,64	E	1.0	6	CA	Lahr, J., Alpha, T.
	Developed the Alaska Information Center at U of Alaska, Fairbanks	57,64,65,66,84,38,49	E,V	14.0	10	AK	Davies, J., Masse, B., Miller, T., Kieule, J.
PERRY, SUZANNE C.							
PITT, ANDREW M							
PROSE, DOUGLAS V.							
	Produced video OFR of Loma Prieta Earthquake	25,26,39,52,57,59,60,65	E	60	10	W	
	Provided video OFR: 6 hrs of scenes of Loma Prieta	25,26,39,52,57,59,60,65	E	40	9	W	

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Provided video OFR: USGS/DOI release	25,26,39,52,57,59,60,65	E	80	10	W	
REASENBERG, PAUL A.							
	TV interviews - Loma Prieta	65	E	10	10	SFBA, N	
	Newspaper interviews	64	E	10	10	SFBA, N	
	Radio talk-show appearances, KGO	66	E	1	10	SFBA	
	Documentary film to HS Curriculum	68	E	2		Great Britain, N	
	Talk on earthquakes, Cupertino School Dist.	42	E	1		SFBA	
	Talk on eqs., Insur. Underwriters Conv.	80	E	0.5		N	
RENEAU, DAVID B.							
REYNOLDS, SHARON L.							
RODRIGUEZ, ANSELMO							
	Provided eq material, Hayward HS	59	E	2.5	5	SFBA	
	Provided magazine insert to radio station KLOK	66	E	1	5	SFBA	
ROGERS, JOHN A.							
	Discussed eq potential, Yakutat	5,19	E	0.3	5	Cape Yakutat, AK	
	Discussed eq potential, Yakutat	57	E	0.2	5	Yakutat, AK	
	Discussed eq potential, Columbia	57	V	2	7	Pasto, Colombia Univ.	B. Chouet
	Video presentation, elem. sch., Belgrade MT	59	E,V	0.2	7	MT	
SANDERS, MARTY L.							
SMITH, MOSES H.							
	Discussed earth science career to youth groups, MPES	51	MPES	25	7	SFBA	
SOMERA, ROBERT G.							
STEPHENS, CHRISTOPHER D							
	Prepared poster USGS Open House	53	V	3.0	8	SFBA	D. Harlow, R. Page
	Provided reports on status of Redoubt volcano crisis	19,2,25,26,39	V	21.0	10	AK	AVO staff
STEWART, SAMUEL W							
STIHLER, SCOTT D.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
TAM, ROY							
TOFSRUD, ERIC							
	Distributed materials	57	E		8	CA	
	Distributed materials (Amat. Radio & E-mail networks)	57	E	3	8	NCA	
TOMEY, JACK W.							
VANSCHAACK, JOHN R							
	Erected/manned display at Moffet Field airshow	2,57	E	1.0	6	SFBA	S. Silverman, K. Breckenridge, F. Fischer, etc.
	Provided discussions with US COE on emergency responses	3	E,L	1.0	5	SFBA	Burdette, Kempe
	Advised FAA on emergency hazards warnings	19	E,V	4.0	9	W.coast, Yellowstone Park,WY	Kempe
	Gave lecture to San Jose School Dist. on safety	42	E,L	0.5	8	SFBA	
	Gave lectures to various Service Clubs	50	E,V	0.2	7	W Coast, SFBA	
	Manned exhibit at Santa Clara Co. Fair	50	E	1.0	5	SFBA	F. Fischer
VIDALE, JOHN E.							
	Served on shaking hazards committee	25	E	3	8	CA	W. Joyner
	Gave talk on strong-motion instrument program	25,26,31,32,36,40	E	5	8	CA	W. Joyner, G. Brady
WALD, LISA ANN							
	TV interviews	65	E	1	7	SCA	
	Radio & newsp. interviews	64,66	E	1	7	SCA	
	Talk & demo at high school	59	E	1	8	SCA	
	Gave talks	50	E	2	9	SCA	
	Gave talks, Consumer Prot. Comm., Calif. Assn. Realtors	82	E	1	9	SCA	
	Conducted tour of seis. lab, elem. sch.	59	E	1	4	SCA	
	Conducted tour of seis. lab, LA Fire Dept.	39	E	0.5	6	SCA	
	Answered tel. inquiries	57	E	1	7	SCA	
	Provided maps and eq lists	79	E	0.5	7	SCA	
	Provided info to Calif. DWR	35	E	0.5	6	SCA	
	Prepared Open House display, CalTech	59	E	15	7	SCA	
WALTER, ALLAN W.							
WALTER, STEPHEN R.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Wrote and distributed weekly seismicity summary	3,5,10,11,14 25,26,29,39,40,41,42,44,57,60,64,65,66,67,69,89	E	52	7	SFBA,N,W	Hirshorn, B.; Lindh, A.
	Prepared and manned poster at Open House	53	E,V	4	8	SFBA	None
	Planned and set up booths at Open House	53	G	3	10	SFBA	Geokids fundraising committee
	Co-produced video on Loma Prieta aftershocks for TV stations	65,68	E	20	10	SFBA,N,W	Klein, F.
	Planned and will help install panels for display area in Bldg. 7	57,51,65	E	10	8	SFBA	Silverman, S.; Klein, F.
	Proposed co-producing video on Catholic Television Network RE volcanoes	59	V	2	0	SFBA	2 producers from CTN
	Gave two talks to non-professional audience	50	E	1	5	SFBA	---
WALTER, WENDY GRANT							
	Presented Cascadia workshop poster	26,29,32,36,40	E	1.5	5	PNW	Other researchers
	Gave talk at workshop, FEMA	9,25,26,32,40,43	E	1	8	PNW	
	Media interviews	64,66,69	E	0.3	6	PNW,OR	R. Minor
	Prepared & presented poster, DOGAMI	25,26,32,40	E	1	6	PNW	C. Weaver
	Advised on forming Tsunami Task Force, Calif. Seis. Saf. Comm., NOAA	13,14	E	0.3	6	PNW	C. Weaver
	Provided slides & info., City of Bellevue, WA	40,39	E	0.2	7	Bellevue, WA	
	Provided slides & info., Skamania Co. Emer. Serv. Dept.	30	E			WA	
WARD, PETER L.							
	Edited Loma Prieta pamphlet	49,38,84	E	30.0	10	SFBA	B. Page
	Contributed to Loma Prieta circular	57	E	7.0	6	SFBA	Plafer and others
	Edited Next Big Earthquake Magazine	57	E	200.0	10	SFBA	Many others
	Interviewed Good Morning America ABC-TV	57	E	3.0	10	N	
	Interviews TV shows, Radio shows	57	E	15.0	8	SFBA	

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Gave public lectures	57	E	4.0	5	SFBA	
	Gave presentation at Congressional Community Meetings (Panetta, Mineta, Campbell, Brown, Lantos, Stark, Edwards, McDermott)	57	E	8.0	10	SFBA	B. Page, E. Brabb, B. Brown, T. Heaton, D. Morton, T. Holzer, C. Weaver
	Conducted OMB tour (Joel Kaplan)	24	E	1.0	10	SFBA	Many others
	Organized Tech. briefing	64,65,66	E	10.0	10	SFBA	Borcherdt, Brown, Ellsworth, Page, Wallace, Kockelman
	Conducted DOI tour (Bing and Topping)	24	E	1.0	10	SFBA	many
	Advised Swedish Geol. Survey	97	E	1.0	8	SFBA	
	Gave presentation Fed. United Campaign	58	E	1.0	8	SFBA	
	Designed display panels (Hayward Fault)	57	E	5.0	10	SFBA	D. Tsoi
	Manned two EQ Fair exhibits	57	E	4.0	9	SFBA	Prescott,
	Gave statement to Calif. Sesmic Saf. Comm.	32	E	2.0	9	SFBA	
	Gave statement, House Subcommittee	24	E	5.0	8	SFBA	
WEAVER, CRAIG S.							
	Gave presentation-US Senate Forum (Eq. in WA, are we ready?)	24,9,10,72,73,74,75,76,77,78,79,80,81,82,83,84,25,26,27,28,29,30,31,32,33,34,35,36,37,38,57,59,39,40,41,42,43,44,45,46,47,48	E	5.0	9	PNW	
	Gave presentation-7th Congressional Dist.	24,57	E	1.0	4	So. Seattle, WA, Reston,	P. Ward
	Testified at US House Subcommittee Hearing	24	E	1.0	4	PNW,N	R. Wesson and Director's staff

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Participated in Humboldt Bay EQ. Conf.	25,26,29,34,39,40,41,42,43,44,45,46,47,48,50,51,52,53,54,55,56,57,59,60,64,65,66,72,73,74,75,76,77,78,79,80,81,82,83	E	7.0	9	PNW,CA	B. Atwater, M. Lisowski, S. Clarke
	Discussed with WA State Geologists	25	E	3.0	5	WA	T. Yelin
	Discussed with OR State Geologists	25	E	10.0	5	OR	T. Yelin
	Presented paper at Regional Eq. Conf.	25,26,60,64,65,66	E	12.0	5.5	PNW	Most of Seattle Office
	Gave talk for various groups	9,24,29,80,60,59,64,65,66	E	8.0	3.5	PNW	
WHITE, RANDALL A.							
	Manned Open House poster	53	DCS	0.5	8	SFBA	Most MP USGS
	TV interviews, Spanish lang.	65	E,V	1	9	SFBA	
	Radio interviews, Spanish lang.	66	E,V	0.75	5	SFBA	
	Briefings about Pinatubo, USAF,USN	2	V	2	9	N	C. Newhall, D. Harlow, T. Casadevall, E. Wolfe, W. Duffield
	Briefings about Pinatubo, AID	21	V	0.25	5	N,W	C. Newhall, D. Harlow, T. Casadevall, E. Wolfe, W. Duffield
	Talks to service clubs	50	E	0.4	8	SFBA	
	Helped prepare newspaper insert	64	E	4	8	SFBA	P. Ward, B. Bakun, A. Lindh, W. Ellsworth, P. Reasenberg, R. Wallace, T. Holzer, W. Prescott, C.-Y. King
YELIN, THOMAS S.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Prepared presentation for 2 workshops sponsored by Oregon Geol. Survey	25,29,31	E	8.0	7.5	PNW	C. Weaver
	Served on planning committee for NEHRP Workshop	9,25,26,29,31,34,35,39,40,41,43,52	E	3.0	7.5	PNW	Several USGS scientists
	Gave advice to Wash. Seismic Safety Commission	25,26,29,31,32,34,35,36,40,43,74,75,81	E	4.0	9	PNW	Several USGS
	Gave elementary school presentations	59,64,65,66	E	1.0	9	PNW	
ZOBACK, MARY LOU							
	Answered tel. calls about Loma Prieta	57,64,65,66	E	3.5	2	NCA, N	Seismology
	Presentations at several elem. schools	59	E	1	9	SFBA	

BRANCH OF GRA

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
ALGERMISSEN, SYLVESTER T							
	Prepared probabilistic ground motion maps for the NHRP seismic code provisions	9	E	60.0	10	N	D. Perkins, P. Thenhaus, E. Leyendecker
	Cooperated with the Structural Engineering Assoc. of Cal. (SEAOC) to produce seismic design maps	84	E	10.0	10	CA	
	Prepared probabilistic ground motion maps of foreign areas	22,95	E	20.0	10	W	P. Thenhaus, E. Leyendecker, S. Hanson
	Presented lectures on hazard assessment to central US Eq Consortium (CUSEC)	84	E	5.0	10	CUS	
	Presented lectures on hazard assessment	84	E	5.0	10	W	
	Served as Chair, for committee for revision of the intensity scale, EERI	85	E	10.0	10	W	
ANDERSON, R. ERNEST							
	Participated in safety review, Jordanella Dam, Utah	15,34	E,L	22.5	9	Wasatch, Provo UT	Macbeth, Joiner, Swolfs, Schuster
	Reviewed Lake Mead structures	6	E	0.3	1	Lake Mead, NV, AZ	
	Gave lecture, UNLV	60	E	1	9	Las Vegas, NV	T. Barnhard
	Gave Lecture, CSM	60	E	0.8	7	CO School of Mines, CO	
	Gave talk - elem. school	59	E	0.8	7	Wheat Ridge, CO	
BALDINI, KELLY A.							
BARNHARD, THEODORE P.							
BAUM, REX L.							
	Presentation of preliminary findings RE landslide investigations	49,89	L	5	5	Honolulu, HI	Fleming, R.; Ellen, S.; and Reid, M. (WRD Honolulu)
BENDER, BERNICE K.							
BICE, WILBURN T.							
BRADLEY, LEE-ANN							
	Presentation on earthquakes to 3rd grade class	59	E	0.5	8	Mitchell Elem. School, Golden, CO	M. Cecil
	Judged science fair	59	G	1	8	Ash Grove Elem. School, Golden, CO	3 Branch scientists
BROCKMAN, STANLEY R.							
BROWN III, WILLIAM M.							

BRANCH OF GRA

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Member, speaker, exhibitor Colo. Hazards Mitigation Council	26	LE	10	10	CO	R. Schuster, R. Madole, E. Harp
	Lectured, Intl. course on earthquakes	95	LE	5	10	W	Many OEVE
	Member, speaker, exhibitor Assoc. State Floodplain Managers (ASFPM)	92	LE	15	10	N	Water Resources Division
	Member, speaker Colo. Society of Natural Hazards Research	92	LE	2	8	CO	
	Lectured on geol. hazards, Ital. Nat. Res. Coun.	97	LE	60	10	W	Several Geol. & Water Res. Divisions
	Advisor for ordinance, landslide hazards, Oahu	49	L	45	10	H	Several Geol. & Water Res. Divisions
BUCKNAM, ROBERT C.							
CAMPBELL, RUSSELL H.							
CANNON, SUSAN H.							
CARVER, DAVID L.							
CECIL, MERIDEE JONES							
	Presentation on earthquakes & equipment, 3rd grade class	59	E	0.5	8	Mitchell Elem. School, Golden, CO	Lee-Ann Bradley
	Field trip to NEIC, 3rd grade class	59	E	0.5	6	Mitchell Elem. School, Golden, CO	Waverly Person
CHLEBORAD, ALAN F.							
COLLINS, DONLEY S.							
CRANSWICK, EDWARD							
	Authored Newsletter (Public Seis. Net)	52,57,59,60,86,97	E	5.0	6	SFBA	Banfill, R.
	Gave interview (TV program Beyond 2000:Earthnet)	65	E	5.0	6	SFBA,N,W	Hammond, Dietel, Hanks,
	Liason for Public seismic network of So. San Jose, CA	57,58	E	10.0	10	SFBA	Gardner, Hammond, Chelberg, Dietel, Wennerberg
	Co-authored PSN newsletter #2	58	E	5.0	4	SFBA,N,W	Gardner, Shelton
CRONE, ANTHONY J.							
	Participated in Cent. US exhibit/poster session	53	E	1	2	Denver, CO	M. Machette
	Discussed hazard info on central US, state geol.	9,25,26,34,64,65	E	5	6	CUS	
DART, RICHARD L.							
DENISON, JUDITH S.							
	Manned exhibit for Colorado Natural Hazards Coun. Mtg.	38	L	1.0	9	CO	W.M. Brown
	Manned exhibit (AGU 91 Fall Mtg)	92	L	3.0	8	N	W.M. Brown

BRANCH OF GRA

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Responding to requests from public for Landslide bibliographic searches	57	L	1.5	8	W	
DEWOODY, JEAN M.							
DICKMAN, NANCY C.							
DIEHL, SHARON F.							
	Lectured on volcano hazards	59	V	1		Denver School Dist., CO	J. Odum
	Judged science fair	59	G	1		Denver School Dist., CO	
DIMENT, WILLIAM H.							
ELLEN, STEPHENSON D.							
ELLIS, WILLIAM L.							
ESPINOSA, ALVARO F.							
	Conducted post-Eq. study -Costa Rican Damaging eq.	21,22	E	20.0	9	Costa Rica, Panama	Univ. Costa Rica, Univ. Panama (Faculty members)
	Distributed/released post-earthquake study-Ecuadorian damaging eqs.	21,22	E	25.0	10	Ecuador	Univ Ecuador
	Conducted Eq. Damage evaluation/Advisory	23	E	4.0	6	Panama	Univ Nevada
	Serves as facilitator to mitigation, hazards studies, Cent US Eqk. Consortium	1,9,6,10,25,26,27,32,36	E	2.0	5	Latin America	Other experts in workshop
	Authored post Eq. paper (NAS)	24	E	30.0	9	Ecuador	Univ Ecuador
	Conducted seis. hazards, intensity damage seis. studies (State Dept Program) Project work	24	E	20.0	10	Spain	Univ Madria, Geograph. Inst. Spain
FLEMING, ROBERT W.							
	Authored several products, Honolulu Public Works	49	L	240	?	Honolulu, HI	Wilson, E. Baum, C. Reid
GOMBERG, JOAN S.							
GORI, PAULA L.							
	Advised FEMA	9	E	36	8	N	none
	moderated session for eq. planners	9,26	E	7	9	N	NEC
	Served as representative to disaster group	9,26	E	20	8	N	BGRA staff
	Expounded on report about outreach	9,26	E	30	7	N	Milliu, G. (from FEMA)
	Assisted communication between scientists and practitioners, EARTHQUAKE SPECTRA	89,85	E,L	20	8	N,CA	Berknopf, Campbell, Nishenko, Solter
GREENLEAF, BARBARA M.							
HALLER, KATHLEEN M.							
HANSON, STANLEY L.							
HARMSSEN, STEPHEN C.							
HARP, EDWIN L.							
HARTZELL, STEPHEN							
HIGHLAND, LYNN M.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Editor of Cent. US Preparedness Guide	39,40,41,42,43,44,45,57,59,64,65,66,67	E	10		CUS	
	Prepared color Landsat with overlain seismicity, Cent. US	39,40,41,42,43,44,45,57,59,64,65,66,67	E	10		CUS	
HOPPER, MARGARET G.							
	Helped in preparation of historical earthquake and intensity section for newspaper insert for CUS	57	E	20.0	9	MO, AR, IL, IN, KY, TN, MS, CUS	Staff of GRA Branch, Lynn Highland
JIBSON, RANDALL W.							
JOHNSON, MICHELINA J.							
KEEFER, DAVID K.							
	Authored OFR on geologic hazards	9,40,58,78,79,82	L	200	8	SFBA	E. Harp
	Member of ad hoc committees on landslide & eq hazards	25	L	8	7	CA	OEE
	Member of review committee to evaluate proposals	49	L	3	6	SFBA	
	Presentation at Career Day, elem. sch.	59	L	2	6	SFBA	
	Interviewed by newspaper, TV, & radio reporters	64,65,66	L	4	8	SFBA, N	
	Appeared in doc. film on eqs	65,68	L	2	7	SFBA	Many USGS
	Gave lectures	60,85,89	L	20	8	N	
KIBLER, JOHN D.							
KING, KENNETH W.							
	Briefings, Santa Cruz, Los Gatos	40,43	E	2		SFBA	Carver, Worley, Williams
	Taught short course	6	E	1	9	N	Carver
	Gave talks - vibration damage	6,40,43	E	1	9	N	Carver
	Presentation - vibration, Pueblo Grande, BIA	24	E	1	7	AZ	
	Gave talk - site response, OSM, COE	3,24,25	E	1	7	CUS	
	Gave talk - vibration	6,7	E	1	7	N	
KNIFONG, DONNA L.							
KNODEL, ELAINE M.							
LANGER, CHARLEY J.							
LEYENDECKER, EDGAR V.							
LOPEZ-CAVENDER, ETHEL P.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
MACHETTE, MICHAEL N.							
MADOLE, RICHARD F.							
	Served as expert witness in trial (USA v. Colorado), US Dept. Justice	5, 24	L	60.0	10	CO	
	Served on landslide hazards subcommittee, State of Colo.	38	L	1.0	10	CO	B. Brown, B. Schuster, E. Harp
	Led field trip	5,24	L	2.0	10	CO	
	Provided data & advice for preparing a series of models for museumRocky Mtn. Nat. Park	6, 52	G	5.5	10	CO	
MELARAGNO, JEAN K.							
MEREMONTE, MARK E.							
MICHAEL JR., JOHN A.							
NELSON, ALAN R.							
OBERMEIER, STEPHEN F.							
	Authored article - hazard	40,44	E	30		CUS	M. Hopper, R. Jibson
	Authored article - damage	40,44	E	20		CUS	M. Hopper
	Gave talk, Indiana Geol. Surv.	25	E	1		Wabash Valley, IN,CUS	
	Gave talk, Illinois State Mus.	25,52	E	1		Wabash Valley, IN,CUS	
ODUM, JACKSON K.							
OLSEN, HAROLD W.							
OMDAHL, ELEANOR M.							
OVERTURF, DEE E.							
PARK, ROBERT B.							
PERKINS, DAVID M.							
	Answered question & furnished maps about zpnation	34,40,41,44,57,64,75,80	E	14	9	N	P. Thenhaus
	Assisted FEMA in eq mitigation funding allocation to states	9	E	12	8	N	S. Nishenko
	Calculated eq probabilities for Wasatch Front, Utah GMS	34,36,57,79	E	3	7	UT	A. Rogers
	Participated in building code map workshops	9,36,40,44,57,64,67,79	E	8	8	N	E.V. Leyendecker
	Reviewed seis. hazard estimates for nuclear materials sites	8	E	130	7	CUS	B.K. Bender, P. Thenhaus, E.V. Leyendecker, M. Hopper
PERSONIUS, STEPHEN F.							
	Led field trip to active faults in Rocky Mtns., PRC geologists	97 (State Seismol. Bureau, PRC)	E	10	9	China	

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Assessment & post-quake recommendations in Costa Rica, AID, OFDA	21,22	E	14	8	Costa Rica & Panama	
	Gave workshop talk, NRC	11	E	5	8	PNW	
	Gave workshop poster talk, Ore. Dept. Geol. and Min. Ind.	25,60	E	5	8	PNW	
	Gave seminar talk, Chevron USA	76	E	1.5	6	Denver, CO	
	Judge at science fair, Jefferson Co. Sch. Dist.	59	E	1	5	Jefferson County School District, CO	
POWERS, PHILIP S.							
PRATT, THOMAS L.							
RHEA, B. SUSAN							
RICOTTA, RALPH J.							
ROGERS, ALBERT M.							
RUKSTALES, KENNETH S.							
SAVAGE, WILLIAM Z.							
	Supervised graduate student thesis (CIE Dept.)	60	L	7.0	10	W	
	Taught course in hydrogeologic hazards in Italy	97,60	L	40.0	10	W	
	Hosted foreign students	97,60	L	30.0	10	W	
SCHUSTER, ROBERT L.							
	Gave distinguished lecture on engineering geology, 33 University Depts.	60	L	30.0	8	N, CANADA	
	Gave presentation on landslide-dam hazards (Geotech Soc., Canada & L.A. Section AEG)	85	L	2.0	8	Vancouver, BC, SCA, CA	
	Gave presentation on landslide-dam hazards (Italian NRC)	97	L	0.5	8	Italy	
	Gave presentation on landslide dam hazards (Ecuador Eng. Preparedness Prog.)	97	L	0.5	7	Ecuador	
	Gave presentation on irrigation-induced landslides, Ecuadorian Gov.	97	L	0.5	7	Ecuador	
	Gave presentation on natural dams at Mt. St. Helens (Nigeria)	97	L	0.5	6	Cameroon and Nigeria	
	Gave panel presentation on earth-science education (ASCE)	85	L	0.5	9	N	
	Gave presentation on ground failure caused by 1949 & 1965 Puget Sound Eq.	92	L	0.5	8	PNW, N	
	Gave presentation on ground failure in W. Washington	60	L	0.5	8	WA	
	Gave presentation on slope-stability studies for mountain infrastructure projects	97	L	0.5	8	Himalayan Nations	
	Served as chairman for slope stability session	97	L	0.5	8	Himalayan Nations	

BRANCH OF GRA

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Gave presentation on tunnel drains for natural dams, Intl. Conf.	85	L	0.5	8	W	
	Gave presentation on landslide-dam hazards, ASCE	85	L	0.5	8	Washington, D.C.	
	Gave presentation on geologic hazards at Lake Nyos, W. Africa	60	L	0.5	8	CO	Michele Tuttle
	Served as keynote speaker on landslide hazard management - (Intl. Slope Stability Conf.)	85	L	0.5	8	W	
	Served as member of Geotechnical Advisory Board to Panama Canal Commission (slope stability)	2	L	5.0	9	Panama Canal zone	
	Served as member of UNESCO Joint Working Party on World Landslide Inventory	96	L	2.0	6	W	
	Served as advisor to Italian National Research Council on landslide problems in Calabria and Lombardia	97	L	5.0	6	Italy	
	Served as advisor to Civil Defence Agency of Ecuador (landslide-dam energy)	97	L	5.0	9	Ecuador	
	Served as advisor to ICIMOD (Intl. Center for Integrated Mt. Development) Himalayan Mtns.	97	L	4.0	7	Himalayan Mtns.	
	Served as advisor to Eng. teams (Gov'ts. of Cameroon and Nigeria) hazards from Lake Nyas	97	L	4.0	9	Cameroon and Nigeria	
	Served as advisor/reviewer to Interagency Tech. Adv. Group on Santa Cruz Geol. Hazard (response to LPE)	3	L	6.0	9	CA	
	Served as member on Committee for Natural Disasters -NRC	24	L	3.0	8	N	
	Served as member on Task Force on Landslides -(NRC)	24	L	2.0	8	N	
	Served as member on Committee for Natural Disaster Reduction (ASCE)	85	L	2.0	8	N	
	Served as member on Committee on Landslides Intl. Soc. for soil mechanics and Found. Engineering, ISSMFE	85	L	0.5	8	W	
	Served as member of Landslide Committee, AEG	85	L	0.5	7	N	
	Provided field cooperation with geologists of Wash. Div. of Natural Res. (Eqs and induced landslides)	25	L	7.0	9	WA	
	Served as member of USGS Review Team on safety of Vandenberg Dam, Utah (Requested by Utah Cong. Delegation)	24	L	8.0	9	UT	
	Served as member of Geotechnical Board, NRC	24	L	6.0	9	N	
	Provided field cooperation with geologists on Colorado Geological Survey (study of landslides)	25	L	2.0	9	CO	

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Provided field cooperation with geologists of Canadian Geol. Survey (study of B.C. and WA landslides)	97	L	5.0	9	CANADA	
	Served as official member of Colorado Natural Hazards Council (Comm. on Landslides/Geol. Hazs.)	26	L	2.0	8	CO	
SCHWEIG, EUGENE S. III							
SHEDLOCK, KAYE M.							
SMITH, ROBYN D.							
SMITH, WILLIAM K.							
	Served as Boy Scout Merit Badge Counselor for Geol. and for Surveying	51	G	20.0	6	Denver, CO	
STEPHENSON, WILLIAM J.							
SWOLFS, HENRI S.							
TARR, ARTHUR C.							
	Supplied digital spatial data to GIS users	25	E	1.0	5	OR, WA	
	Supplied digital spatial data to GIS users	26	E	1.0	5	OR, WA	
	Supplied digital spatial data to GIS users	40	E	2.0	10	Seattle, WA	
	Supplied GIS-prepared eq haz. & risk map	9	E	1.0	10	CJS	R. Wheeler, S. Rhea
	Supplied GIS-prepared eq haz. & risk map	60	E	3.0	6	Memphis, TN	
	Supplied GIS-prepared eq haz. & risk map	40	E	1.0	10	Pierce CO, WA	
	Gave briefings about NEHRP to user groups	25	E	3.0	10	OR, WA	
	Gave briefings about NEHRP to user groups	26	E	3.0	10	OR, WA	
TAYLOR, MONIKA M.							
THENHAUS, PAUL C.							
	Speaker at Nat. Inst. Building Sciences	85	E	2	8	N	
	Speaker at Bldg. Seismic Safety Coun	85	E	3	8	N	
	Workshop moderator & speaker, CUSEC	88	E	3	8	CJS	
	Workshop moderator & speaker, CUSEC	88	E	3	8	CJS	
	Workshop moderator & speaker, CUSEC	88	E	3	8	CJS	
	Speaker, CDC, CUSEC	24, 88	E	2	7	CJS	
	Press interviews	64	E	0.5	6	SFBA	GRA group
	Answered tel. inquiries on seismic hazard	57	E	18	9	N	GRA group
THOMAS, PATSY J.							
URBAN, THOMAS C							
VARNES, DAVID J.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
WEEDMAN, ROSALIE E.							
WHEELER, RUSSELL L.							
	Mapped Central US (infrastructure-New Madrid Eq)	9,26,85,88	E	45.0	5	QUS	S. Rhea, A. Tarr
	Helped design poster/Newspaper insert (New Madrid Eq.)	9,25,26,55,57,59	E	10.0	3	QUS	K. Shedlock, L. Highland, others
	Gave talk at Yucca Mt. Workshop	8	Y	2.0	1	NV	
WIECZOREK, GERALD F.							
	Advised Philippine government RE Luzon eq. in 1990	22	L	30	8	Luzon Philippines	Newhall, C.; Sharpe, R.; Wennerberg, L.
	Provided overview of program on ground failure to U.S.-Japan scientific committee	95	L	6	5	W	Branch Chiefs and Newhall, C.
	Presented keynote address for FEMA on geologic hazards	9,26,39,40,41,44	L	1	7	Washoe Co., NV	None
	Gave presentation on geologic hazards to teachers in Fairfax county	59	L	1	8	Fairfax Co., VA	Sutton, J.
	Gave presentation on geologic hazards to DOI committee	35	L	3	6	N	WRD
	Assisted NPS in reconciliation of rockfall problem	6,29	L	7	9	Lehighton, PA	Jibson, R.
	Prepared radio program on landslides, VOA	66	L	1	5	W	None
	Assisted in assessment of rockfall hazards, Yosemite Nat. Park	6	L	120	8	Yosemite, CA	Harp, E., and Swolfs, H.
WILLIAMS, ROBERT A.							
WILSON, RAYMOND C.							
WORLEY, DAVID M.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
ARP, NANCY E.							
BAKER, F. BRETT							
BARNHART, REBECCA K.							
BARTZ, DETLEV H.J.							
BASLER, DAVE S.							
BERMAN, FREDERICK A.							
BLACKWELL, RONALD S.							
BLANPIED, MICHAEL L.							
	Gave public lecture on first anniversary of Loma Prieta eq.	57	E	2	9	SFBA	---
	Was keynote speaker and panelist for "Safety Day", Lawr. Berk. Hall of Sci.	44,52,36	E	3	8	SFBA	local safety officials, museum staff
	Gave tours of lab. facilities to groups	51,57,59,68	E	5	8	SFBA	others in experimental lab.
	Presented lectures on Loma Prieta eq., AllState Ins. Co.	80	E	2	8	SFBA	---
	Provided technical assistance to Peter Ward in preparing newspaper insert	57	E	5	10	N	many
	Prepared posters and manned exhibits at Open House	53	E	3	8	SFBA	staff
	Manned USGS display at San Mateo County fair	54	G	0.5	5	SFBA	staff
BRECKENRIDGE, KATHERINE							
BYERLEE, JAMES D.							
CASTILLO, DAVID A.							
CHRISTENSEN, DOUG M.							
CLARK, KEVIN W.							
DIETERICH, JAMES H.							
EIS, RAYMOND R							
FOGLEMAN, ELAINE B.							
GALANIS JR., S. PETER							
	Organized Geothermal display for WR Open House	53	DCS	10	8	SFBA	Most USGS
GARCIA, KAREN N.							
GROSS, WALTER K.							
GRUBB, FREDERICK V.							
HAMILTON, GARY D							
HARRIS, RUTH A.							
HEALY, JOHN H.							
HICKMAN, STEPHEN H.							
JACKSON, DALE A.							
JOHNSTON, MALCOLM J.							
	Provided advice and explanations via phone and letter	5,6,13,18,26,34,38,40,49,60,78,84	E,V	7	7	CA,N	--
	Provided interviews to media	64,65,66,67,68,69	E,V	5	9	CA,N	---

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Prepared and manned exhibit at Open House	53	G	2	8	SFBA	USGS MP staff
	Reviewed legislation on technology transfer	34	E	0.5	3	CA	---
JONES, ALAN C.							
KATZ, GABRIELLE L.							
KELLER, VINCENT G.							
KENNELLY JR, JOHN P							
KILGORE, BRIAN D.							
KING, CHI-YU							
	Coedited magazine insert, Chinese lang. version	64	E	2	8	SFBA	Y. Tsa
	Prepared & manned poster for Open House	53	E	2	7	SFBA	
	,Western Elec.	57	E	0.5	6	SFBA	
	Gave talk, parents of Chinese lang. school	57	E	0.5	6	SFBA	
	Chaired Intl. Atomic Energy Agency meeting (IAEA)	97	E	6	7	W	
KING, NANCY E.							
	Gave talk on Earthquakes, Sunnyvale	39,84,44	E	1.0	9	SFBA	
	Gave talk on Preparedness, Santa Clara	39,84,44	E	1.0	9	SFBA	
	Gave talk on EQ Preparedness	39,84,44	E	1.0	9	SFBA	
	Gave talk on EQ Safety, Amdahl Corp	58	E	1.0	8	SFBA	
	Gave talk on EQs, S. SF High School	59	E	1.0	4	SFBA	CalTrans, Red Cross
	Gave talk on EQs, Calif. Assoc. Sch. Bus. Officials	59	E	1.0	7	SFBA	
	Prepared posters/demos for USGS Open House	57	E	1.0	9	SFBA	Lisowski, M., Srare, J., Hamilton, G., Langbein, J.
KIRBY, STEPHEN H.							
LACHENBRUCH, ARTHUR H.							
LANGBEIN, JOHN O.							
	Participated in press conf., Parkfield Eqk. Alert	64,65,66	E	1	7	CA	
	Gave talk, Am. Soc. Mech. Eng.	85	E	0.5	7	SFBA	
	Prepared Open House poster	53	E,V	2	7	SFBA	USGS
	Manned Open House posters	57	E,V	0.5	8	SFBA & Mammoth, CA	Tect. 2-color laser crew
	Gave talk to optical society	85	E,V	0.5	7	SFBA	M. Lisowski
	Gave talk to local citizens	57	E	1	7	SFBA	T. Parker, S. Wilkinson

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
LIECHTI, RICHARD P.							
LISOWSKI, MICHAEL							
	Prepared, Manned display at USGS Open House	53	E	2.0	6	SFBA	Most of Menlo Park Staff
	Gave talks to optical society	79,85	E	3.0	5	SFBA	John Langbein
	Gave presentation 4th grade class	59	E	1.0	7	SFBA	
	Consult with local surveying organization	29	E	2.0	6	SFBA	
	Assisted, interfaced with media	69,65,66	E	4.0	9	N	Jim Savage
	Served as point of contact for researchers, agencies	25,8,5,35	E	10.0	7	N	
	Gave seminars (other agencies/groups)	25,60	E	5.0	6	CA	
LOCKNER, DAVID A.							
MARSHALL, GRANT A.							
MELLO, DENNIS P.							
MOORE, DIANE E.							
	Prepared posters & manned display at WR Open House	53	DCS	4	8	SFBA	Most USGS
MORROW, CAROLYN A.							
MORTENSEN, CARL E.							
	Advisor to Exercise "Response 89"	9,26	E	6.5	9	CA,N	Crori
	Steering Comm. (RISC) for Emerg. resp.	9,26,55	E	4	10	CA	
	Advisor to Fed. Coord. Off., Loma Prieta Eq. response	2,3,9,26,55	E	20	3	SFBA	Nearly all of OEVE
	Tour for House Committee	9,24	E	4.5	10	SFBA	Ponti, Sieders, Wesson
	Presentation & tour to Cong. Subcommittee	24,80	E	2.5	8	SFBA	Tobin, other non-USGS
	State-Federal Haz. Mitigation Team-compile & edit rpt.	2,3,4,5,8,9,10,17,25,26,29,31,32,33,34,37,40,44,55,57	E	20	10	CA	Brown
	Response exercise, Newport-Inglewood fault	3,9,26	E	3	9	SCA	Given
	Drafted Emergency Response Plan for SF area, ties in to FEMA plan	9,26	E	18	5.-10	SFBA	Reviewers
	Coord. Presentations, Japanese Diet members (Japanese Consulate)	97	E	2	7	Japan	Prescott, Gryn, Schwartz, Bonilla, Dieterich, Crossley
	Displays for Red Cross workers	55	E	1	8	N	Tsoi
	Speaker	2	E	0.5	5.-6	SFBA	
	Speaker (Paper Mill Engineers Industry Group)	58	E	0.5	5.-6	SFBA	
	Speaker (Dow Chemical)	58	E	0.5	5.-6	SFBA	

BRANCH OF TECT

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Speaker(RayChem)	58	E	0.5	5.-6	SFBA	
	Speaker	1	E	1.5	8.-9	SFBA	Rambo
	Speaker	26,60	E	2.5	10	N	Brown, Shultz(non-USGS)
	Speaker	50	E	0.5	5.-6	SFBA	
	Speaker	59	E,V	0.5	5.-6	SFBA	Wife
	Tour & demonstration of GIS application	55	E	0.5	5.-6	SFBA	Wentworth
MOSES JR, THOMAS H							
MUELLER, ROBERT J. JR.							
MURRAY, MARK H.							
MYREN, GLENN D							
	Presentation for drilling permit, Alameda Co. Water Dist.	49	E	2	8	SFBA	M. Johnston, T. Moses
	Presentation-drilling proj., Alameda Co. Flood Control Zone	49	E	2	10	SFBA	M Johnston
	Presentation for drilling permit, East Bay Reg. Park	49	E	2	10	SFBA	M Johnston
	Newspaper interviews	64	E	0.2	8	SFBA	M Johnston
	Prepared & manned Open House exhibit	53	E	2	8	SFBA	MP staff
PARKER, TIMOTHY N.							
PINKSTON, JOHN C.							
PRESCOTT, WILLIAM H							
	Assisted with press article for LA Times on Loma Prieta insert	64	E	3.0	5	SCA	
	Had conversations with print and broadcast people on Branch activities relating to Loma Prieta	64,65,66	E	5.0	5	SFBA	
	Loaned equipment to Smithsonian for travelling exhibit	52	V	2.0	5	N	
	Gave talks to various groups	57,92	E	5.0	5	SFBA	
	Assisted at Hayward EQ Fair	57	E	0.5	5	SFBA	Ward, Roeloffs
	Increased Branch participation in Open House	57	E,V	1.0	5	SFBA	Barnhart
	Participated in West. Reg. Open House	57	E	5.0	5	SFBA	
	Served as member of US-Japan Working Group on Disaster Reduction	9,13,14	E	42.0	5	N,JAPAN	Newhall, Janda, others
	Responded to public's inquiries on station marks	49,57	E,V	5.0	5	WUS	Lisowski, Gross
	Provided discussions about water table in San Mateo	49		0.5	5	SFBA	Oliver

BRANCH OF TECT

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Organized mtg. on results of Loma Prieta EQ (County and CalTrans Officials as well as scientists)	29,49,85	E	5.0	5	SFBA	Savage, Stein, Thatcher, Lisowski, Marshall, Segall, others
	Gave NEPEC review of Utah seismic hazards	25,26	E	3.0	5	UT	Dieterich, Bakun, Wesson, others
PRIEST, SUSAN S.							
QUILTY, EDDIE G.							
REBELLO, ROBIN M.							
ROELOFFS, EVELYN							
	Presentation on Parkfield experiment, San Luis Co. Med. Soc.	92	E	1	8	San Luis Obispo Co., CA	
	Presentation on Parkfield experiment	50	E	4	8	SFBA	
	Led Parkfield field trips	24,60,67,69	E	3	8	CA	
	TV, mag., newsp., radio interviews about Parkfield alerts	64,65,66,67,68,69	E	15	7	CA	
	Prepared Parkfield poster for Open House	57,92	E	4	5	CA	
	Manned Parkfield poster	65,64,92	E	0.5	7	SFBA	
	Earthquake demo to 3rd grade class, Palo Alto Sch.	59	E	0.5	5	SFBA	
SANDERS, MICHAEL B.							
SANDOVAL, NANCY C							
SASS, JOHN H.							
	Gave invited talks (U. Utah, N. Arizona U., UC Riverside)	60	E, GPP	5.0	8	West. US	
	Served as Science Coordinator (Long Valley Explor. well)	8	DCS	60.0	9	Sierra Basin & Range, CA	D. Hill, R. Bailey
	Served as member DOE (scientific drill. review grp.)	8	DCS	10.0	7	WUS	Bob Fournier
	Served as science liaison USGS/KTB (German deep borehole)	24	DCS	30.0	9	Bavaria, Germany	D. Lockner, S. Komor
	Served as member review grp. on Canadian drill. Prj. (Can. Sci. & Eng. Res. Coun.)	97	E, DCS	5.0	8	Canada	
	Served as member of Continental Sci. Drill. Forum	24	DCS	6.0	6	N	Gary Olhoeft
SAVAGE, JAMES C.							
	Interviewed by reporters about Cascadia	64,65,66	E	0.5	5	PNW	
	Answered telephone about Loma Prieta	57	E	0.5	5	SFBA	OEVE
SEGALL, PAUL							
SILVERMAN, STANLEY A.							
	Grade school talks	59	E	1	8	SFBA	
	Manned Open House display	53	E	4	10	SFBA	USGS
	Developing Bldg. 7 display area	57	E	45	4	SFBA	S. Walter, F. Klein

BRANCH OF TECT

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Set up displays for tours & news broadcasts	57,65,68	E	4	6	SFBA	
SIMPSON JR., ROBERT W.							
	Assisted at Open House	53	E	1.5	5	SFBA	
	Answering questions of reporters	64	E	0.5	5	SFBA	
	Sent data and programs to other investigators	7,25,60,76,77	E,G	20	5?	N	
STEIN, ROSS S.							
	Lectured at elem. school	59	G	1	9	CA	
	Lectured at IBM, Santa Teresa and Almaden Labs	21	E	2	8	CA	
	Advised re post-eq control, Santa Cruz Co. Surv. Dept	40	E	2	5	SFBA	G. Marshall
	Lectured at high school, Oakwood, CA	59	E	1	5	CA	
	Responded to survey, Ut Geol. Surv.	25	E	2	3	UT	G. Marshall
	Open House presentation	53	E	2	3	CA	G. Marshall, W. Thatcher
	Radio interview, KBAY	66	E	1	7	SFBA	Red Cross & State OES
STERN, LAURA A.							
STIFFLER, CHARLES H.							
STUART, WILLIAM D.							
SUMMERS, ROBERT S.							
SUTTON, JAMES M.							
SVARC, JERRY L.							
SVITEK JR., JOSEPH F.							
	Open House Coordinator & prepared & manned display	53	E	20	9	SFBA	
	Gave talk & distributed flyers at seminar	57	G	2	5	SFBA	
THATCHER, WAYNE R.							
	Presentation: lecture, filmed for local Palo Alto TV	57	E	1	10	SFBA	Segall, Stanford faculty
	Manned poster at Open House	53	E	0.2	10	SFBA	Most of Menlo Park USGS staff
TYLER, VELMA M.							
WENDT, KAREN J.							
WENDT, WALTER E.							
WILKINSON, STUART K.							
WILLIAMS, COLIN F.							
	Prepared & manned Open House display	57	E	4	8	SFBA	Geothermal staff
	Lectured on Parkfield, SFSU	60	E	2	5	SFBA	
	Lectured on thermal studies, UCB	60	E,V	2	5	SFBA	

BRANCH OF LITH PROC

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
DILLENBURG, ROBERTA G.							
EMERY, JAMES V.							
EVANS JR., HOWARD T.							
	Co-authored article, AMateur Mineralogist	63	Min.	20.0	10	N	J. White,
FLOHR, MARTA J. K.							
HEARN JR., B. CARTER							
	Contacted land-owners RE water problems, oil/gas	57	DCS	3	9	MT	None
	Contacted Bur. of Mines RE heavy minerals	24	DCS	7	8	MT	Miller, M.
HELZ, ROSALIND L.							
	Sponsored high school student intern	59	V	10	8	Reston, VA	
	Conducted seminar on eruptions for Smithsonian docents	52	V	8	8	Washington, D.C.	
HEMINGWAY, BRUCE S.							
	Advisor for thermodynamic standard, Nat. Std. Data Grp.	16	V	12	8		
HUEBNER, J. STEPHEN							
JAMES, ODETTE B.							
	Merit badge counselor on geol field trip for Boy Scouts	51	G	1	4	Local	D.B. Stewart
KONNERT, JUDITH A.							
LUEDKE, ROBERT G.							
MCGEE, ELAINE S.							
	Prepared poster and manned exhibit for workshop for teachers	59	AcidRain	8	8	Washington, DC	none
	Led field trip examining stone buildings for science teachers	59	AcidRain	21	8	Washington, DC	none
	Authored OFR field guide	59	AcidRain	21	8	Washington, DC	none
	Gave public lecture at USGS on impact of acid rain	57	AcidRain	6	6	Washington, DC	Sherwood, S.
	Gave invited talk at international meeting	86	AcidRain	6	6	W	none
	Mentored high school students on project	59	AcidRain	15	9.5	Fairfax Co., VA	none
	Provided advice to students on science faire projects	59	AcidRain	3	9	Fairfax Co., VA	none
	Conducted workshop for 4th-6th graders	59,42	AcidRain	7	8	Fairfax Co., VA	Russell-Robinson, S.; Wilbur, R.
	Gave talk on careers to high school students	59	AcidRain	4	5	Montgomery Co., MD	none
	Advised NPS on stone in Jefferson and Lincoln memorials	6	AcidRain	10	9	Washington, DC	none
MCGEE, JAMES J.							
	Served on review panel	20	G	6	7.5	N	5 other panel members

BRANCH OF LITH PROC

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Evaluated microprobes for NASA	24		5	8	N	
NORD JR., GORDON L.							
ROBERTSON, MARY R.							
ROBIE, RICHARD A							
ROSS, MALCOLM							
RYAN, MICHAEL P.							
SATO, MOTOAKI							
	Consultation, Smithsonian Volc Exh.	52	V	1	3	N	
WOODRUFF, MARY E							

BRANCH OF IGP

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
BACON, CHARLES R.							
	Gave seminar at UCB	60	V	1.0	7	SFBA	
	Gave seminar at UCSC	60	V	1.0	8	SCA	
	Gave seminar at U. of Chicago	60	V	1.0	7	Chicago, IL	
	Gave Careers in Earth Sci. seminar	59	V	2.5	3	SFBA	
	Contributed to poster for USGS Western Reg. Open House	53	V	0.5	8	SFBA	M. Lamphere
	Manned microprobe lab for USGS Open House	53	V	0.5	6	SFBA	L. Clark and several others
BAILEY, ROY A.							
	Prepared/manned 2 posters for Open House	53	V	3.0	8	SFBA	Menlo staff
	Assisted San Jose High Schools teachers prepare volcano map	59	V	0.5	8	San Jose, CA, SFBA	
BANKS, NORMAN G.							
BARGAR, CHERE N.							
BARGAR, KEITH E.							
	Bldg. coordinator & manned lab for WR Open House	53	Geoth	10	8	SFBA	some IGP
BEESON, MELVIN H							
BOHLEN, STEVEN R.							
BRANTLEY, STEVEN R.							
	Provided Redoubt Response emergency info.	2,6,14,19,25,26,36,37,43,47,57,64,65,66,67,68,69,83	V	40.0	9	AK	Miller, T., McGimsey, R., Richter, D., Power, J., Neal, T., Stine, C., Ewert, J., Gardner, C., Casadevall, T., Miller, D., Hoblitt, R., Scott, W.
	Edited Redoubt Resp. Circ.	26,44,57,59,64,65,66,67,68,69,73,76,83	V	75.0	10	AK	Casadevall, T., Chouet, B., Gardner, C., Hoblitt, R., Lahr, J., LaHusen, R., Major, J., McGimsey, R., Miller, T., Murray, T., Neal, C., Page, R., Power, J., Waitt, R.
	Provided Mt. St. Helens Emergency info	5,64,65,66	V	10.0	8	WA, OR	
	Provided Mt. St. Helens monthly summaries	3,5,9,12,14,19,25,26,28,33,39,44,48,55,57,59	V	12.0	10	WA, OR	Wolfe, E., Myers, B.

BRANCH OF IGP

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Organized Mt. St. Helens Symp./slide presentation	5,25,26,28,29,36,37,39,40,44,47,48,57,59,64,65,66,72	V	15.0	10	WA, OR, CA	Wolfe, E., Pierson, T., Christiansen, B., Casadevall, T., Crandell, D.
	Provided Mt. St. Helens interviews	64,65,66,67,68,69	V	25.0	8	WA, OR	CVO staff
	Reviewed Volcano Hazards video	21,22,23,25,26,39,43,44,57,59,65	V	20.0	10	N,W	Newhall, C., Myers, B.
	Organized Mt. St. Helens Workshop	59	V	8.0	10	WA, OR, ID, CA	others, USFS
	Advised educ. workshop proposal review	59	V	4.0	10	WA, OR, ID, CA	
	Advised educ. volcano video proposal	59	V	10.0	10	N	
	Edited USGS Earthquakes/Volcano Magazine	57, 59	V	20.0	10	N	Wolfe E., Myers, B.
	Advised /designed USFS visitor centers	5,57	V	25.0	10	WA,N	
	Advised USFS volcanic videodisc	5, 59	V	25.0	10	WA, N	
	Advised Boeing video for pilots	83,91	V	3.0	10	N, W	Casadevall, T.
	Prepared and gave educational slide presentation	5,19,33,50,52,57,59,63,84	V	15.0	8	WA	
	Reviewed "Behind the Scenery" series	5,57,59,67	V	1.0	8	N	
	Organized airline safety symposium/field trip	14,19,47,67,83,91	V	5.0	10	N,W	Casadevall, T., Newhall, C.
	Prepared USFS interpretation display	5,57	V	5.0	10		Bequette, T.
	Advised Mt. St. Helens Annual Mtg.	5,84	V	2.0	10	WA	Costa, J.
	Authored Volcano brochure	57,59	V	15.0	8	N	
	Authored USFS Newsletter	5,57	V	2.0	8	WA	
	Reviewed USGS Circ. 1073	57	V	4.0	10	N	Wright, T., Pierson, T.
BROWN, EDWARD C.							
BRUGGMAN, PEGGY E.							
BRYAN, CAROL J.							
BUDDING, KARIN E.							
CALK, LEWIS C.							
CASADEVALL, THOMAS J.							
	Gave briefings about Redoubt eruption, FAA, NOAA, DOD, NTSB	2,14,19,47,48,83	V	1.0		W	
	Briefing on economic impacts of Redoubt, Anchorage Chamber of Commerce (broadcast on radio)	2,14,19,47,74,83,72	V	1.0		AK	

BRANCH OF IGP

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Presented brief. to Senator Stevens about Redoubt	24	V	3.0		AK	
	Gave lecture about Redoubt to Soldotna Rotary club	72	V	0.5		AK	
	Gave lecture about Redoubt and impact on environment to AK Assoc. of Environ. Profess.	77,80,82,83,88,89	V	1.0		AK	
	Gave lecture on Redoubt Eruption to 1964 Reunion of Ak Eq. survivors	57	V	0.5		AK	
	Gave briefing on volcanic hazards and Redoubt eruptions - ARCO Safety Staff	50,76,85,88	V	1.0		AK,N	
	Gave lecture about Redoubt-Geol. Soc. of WA	57,58	V	3.0		WA	
	Gave 2 lectures about Redoubt eruptions-USGS National Center	57	V	3.0		VA	
	Participated in Decade Anniversary (Mt. St. Helens Eruption) invited lecture "Science and the Public"	5,6,9,25,26,36,39,43,57	V	5.0		WA	
	Participated in Workshop on Volcanic Ash, lecture on aircraft incidents during eruption	19,97	V	14.0		Australia	
	Participated in Ash/Aircraft Workshop-Anchorage, AK for aviation community, FAA, NTSB, NOAA, DOD, ALPA, AIA	2,10,14,19,47,74,83,85,88,91	V	7.0		AK,N	
	Gave lectures about volcanoes, volcano hazards, -Denver Museum of Nat. Hist., Teachers Workshop	52,57,59	V	3.0		CO	
	Participated in discussions about Mt. St. Helens explosions - FAA, Seattle, WA/ CVO	19	V	2.0		N,WA,OR	E. Wolfe, B. Meyers, C. Newhall
	Served as member on Aerospace Indust. Assoc.,- hosted meeting	74,83,85,88	V	7.0		N,W	
	Gave public lecture about Redoubt and aviation safety-Denver Museum of Nat. Hist.	52,57	V	3.0		CO	
	Presented talk at AZ State Univ. (Redoubt and Indonesian eruption responses)	60	V	3.0		AZ	
	Served as Co-organizer of lecture series on "Modern methods of igneous petrology"-Denver Fed.	24,59,60	V	5.0		CO	
	Gave briefings about Pinatubo-DOD and DOI, at Pentagon to undersecretary for Intl. Security and Assist. Sec. for Programs	2,24	V	5.0		N,W	
	Gave 30 interviews about Unzen and Pinatubo eruptions	14,19,64,65,66,67,68,69,97	V	5.0		N,W	

BRANCH OF IGP

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Co-organizer of 1st Intl. Symp. on Volcanic Ash and Aviation Safety	2,9,10,14,19,24,26,47,57,64,65,66,67,68,69,74,83,85,88,91,97	V	168.0		N,W	
	Gave 3 lectures to Manila Airport Operators Council about volcanic ash hazards and aviation safety	47,74,83,91	V	5.0		Phillipines	
	Gave lecture on volcanoes (hazards and aviation safety)-Citizens, Japan, Kagoshima	38	V	3.0		Japan	
	Participated in US-Japan Seminar, gave lecture to Narita Airport Officials (volcanic ash, Impact on commercial aircrafts)	47	V	7.0		Japan	
	Gave speech to Manila American Chamber of Commerce (Pinatubo eruption)	72	V	2.0		Phillipines	
	Gave briefings at US Embassy, Manila for Director, USAID-Philippines, and newly arrived US Ambassador	21,23	V	2.0		Phillipines	
	Gave lecture to Beloit College Geol. Dept., on Pinatubo eruptions	60	V	1.0		WI	
	Gave USGS Central Region lecture (Eruption on Mt. Pinatubo)	24,57	V	2.0		CO	
	Gave lecture to Denver Museum of Nat. Hist. (Eruption of Mt. Pinatubo)	52,57	V	3.0		CO	
CASHMAN, KATHARINE V.							
CHAUDET, ROY E.							
CHRISTIANSEN, ROBERT L.							
	Resource Management Workshop, Lassen Volc. Nat. Park.	6	V	2.5	6	NCA	
	Open House	53	V, Geoth	2	8	SFBA	MP IGP personnel
	Lecture, Institute of Human Origins	58	V	2	8	SFBA	
	Helped Lassen Volc. Nat. Park.interpreters design nature trail	6	V, Geoth	4	6	NCA	Muffler, Clynne
	Prepared study of effects of geoth. production, Yellowstone Nat. Pqrk.	6	V, Geoth	10	7	WY	
CLAGUE, DAVID A.							
	Provided daily/weekly eruption update	6	V	40.0	5	HI	
	Provided eruption updates	26	V	6.0	8	HI	

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Authored weekly newspaper column	64	V	40.0	10	H	
	Gave volcanic hazs. briefing	17,31,40	V	6.0	2	H	
	Gave tours of Observatory/brief field tours (Dir. of NSF)	20	V	0.8	10	N	
	Gave TV interviews (lava diversion)	65	V	0.2	10	H	
	Gave telephone consultation with State Water Divisions	25	V	0.5	3	H	
CLYNNE, MICHAEL A.							
	Provided training for NPS naturalist	6	V	2.0	8	NCA	
	Prepared exhibit for West. Reg. USGS Open House	53	G	2.0	9	SFBA	M. Donato, B. Keith
	Gave geologic training at Lassen NP for school teachers group	59,68	V	2.0	10	NCA	
	Prepared/presented courses on Topo maps and earthquakes (Orion	59	E	1.0	7	SFBA	D. Trimble
	Gave interview for Science on Calif. volcanoes	65	V	0.3	9	SFBA	B. Tilling, J. Donnelly-Nolan, P. Muffie, B. Christiansen
	Served as judge for School Dist. Science Fair	59	G	2.0	5	SFBA	many
	Gave consultations with NPS Naturalists on geologic content of trail guides	6	V	2.0	9	NCA	P. Muffler
COON, SHERI L.							
COUCHMAN JR., MARVIN R.							
CRAFT, DORIS G.							
DELANEY, PAUL T.							
DONATO, MARY M.							
DONNELLY-NOLAN, JULIE M.							
	Prepared publication on lava-tube caves-USGS bulletin, Lava Beds Nat. Mon.	6,57	V	40.0		NCA	2 coauthors
	Led field trip, reviewed guidebooks for National Speleological Society	58	V	2.0		NCA,W	Other IGP staff
	Led field trip, reviewed guidebooks for National Speleological Society	58	V	5.0		NCA,W	Other IGP staff
	Responded to telephone inquiries for NPS and NFS	5,6	V	6.0		NCA	
	Gave talks on MLV at CDMG, and Hayward State Univ.	25,60,59	V	5.0		NCA	
	Organized poster and presentation for USGS Open House	57	V	5.0		SFBA	Several others in IGP
	Led field trip for State Conf of NFS	5	V	2.0		CA	

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Advised Scenic Byways Commission regarding highway across Medicine Lake Volcano	5,6,7,18	V	1.0		NCA	
	Responded to media questions on MLV and Clear Lake	57,64,65,66,69	V	2.0		NCA	
	Responded to requests from industry on MLV and Clear Lake	73,76,77	V	3.0		N	
DOUKAS, MICHAEL P.							
	Sponsored Boy Scout Explorer Post	51	V	45	8	CR	R. Waitt
	Demonstration, Science Fair	57	V	1	5	Anchorage, AK	
	Weekly Daily Newsletters	19,14,24,25,36	V	24	9	AK	
	Member, Advisory Panel on Volcano Public Info.	26,44	V	6	6	AK	
DUFFIELD, WENDELL A.							
	Helped produce film "Inside Hawaiian Volcanoes" and wrote Teachers Guide	5,6,25,50,52,53,59,60,62	V	90.0	9.9	N,W	D. Swanson, D. Fiske
	Helped teach training course in geology (for Science Teachers)	59	V	5.0	10	AZ	4 other geologists - USGS
	Gave lecture about volcanoes at USFS and USNPS	5,6,58	V	5.0	5		
	Gave lecture about volcanoes/geothermal energy (Service Clubs)	50	V,O	3.0	5	Flagstaff, AZ	
	Gave interviews to TV/Radio on volcanoes	57,65,66	V	1.0	?	Flagstaff, Phoenix, AZ	
	Prepared, manned poster Flagstaff Open House	53,57	V,O	3.0	7	Flagstaff, AZ	S. Priest
	Gave several talks at Universities	60	V,O	8.0		N	
	Explained interpretive strategies to Nat. Vol. Monument Staff	5	V	5.0	8	Mt. St. Helens, WA	
	Led trips to Mt. St. Helens Crater	57	V	3.0	10	PNW	
	Gave speech to Madera, CA Jr. High School class	59	V	0.1	5	Madera, CA	
	Gave talk on volcanoes to Portland State Univ.	60	V	2.0	8	Portland, OR	
	Gave talk to Airline Reps. on volcanic ash	83	V	1.5	6	W	
	Reviewed construction plans for road to Johnston Ridge Visitor Facility	5	V	3.0	8	Mt. St. Helens, WA	
DVORAK, JOHN J.							
	Led field trip -Kilauea (Caltech Alumni Assoc.)	58	V	1.0	4	H	

BRANCH OF IGP

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Authored Magazine article in Earth	67	V	3.0	5	H	
	Co-authored Magazine article (Sci. Amer.)	67	V	10.0	10	H	B. Tilling, C. Johnson
	Led field trip-Kilauea (College Instucters)	60	V	1.0	4	H	
DZURISIN, DANIEL							
	Lectured on volcanology, Portland St. Univ.	60	V	2	5	Portland, OR	CVO staff
	Media interviews	64,65,66,67,68	V	3	7	PNW, N	CVO staff
	Presentations to elem. sch. classes	59	V	2	5	Vancouver, WA	
	Presentations at Yellowstone Nat. Park	6	V	2	5	Yellowstone, MT	
ELLORDA, RENEE L.							
ERD, RICHARD C							
EWERT, JOHN W.							
	Presentation on Pinatubo eruption & response/monitoring, HS Science Teachers	59	V	1	8	PNW	S. Brantley
	Interviewed by media about Pinatubo eruption, Portland	64,65,66	V	2	7	PNW	A. Lockhart
	Interviewed by NOVA about Pinatubo volcano	68	V	2	10	N, W	A. Lockhart, Hoblitt, Wolfe, D. Harlow
	Led level survey in Lassen Nat. Park with highschool students, EARTHWATCH PROG.	63	V	10	9	N	D. Dzurisim, Kleinman, Yamashita
FAHLQUIST, LYNNE S.							
FEINSTEIN, RAYNELLE R.							
FIERSTEIN, JUDITH E.							
	Gave tours at Open House	53	DCS	1	8	SFBA	K. Bargar, D. Erd, S. McKnight, T. Keith
	Gave speech to Alyeska pipeline owners	76	V	1	10	AK	
FOURNIER, ROBERT O.							
	Served on DOE/OBES review group on Const. Sci. Drilling	8	Geoth	4.0	5	N	J. Sass
	Served on Nat. Academy Panel on Yucca Mtn - Report	8	Y	12.0	8	Yucca Mtn., NV	M. Zoback, J. Bredohoeft
	Gave newspaper/magazine interviews (resource on the Geysers)	64	Geoth	1.0	6	N, CA	
	Gave talks at Universities	60	G	4.0	7		
	Served as Chairman, Advisory Panel for Geothermal Developments in Costa Rica	97	Geoth	14.0	10	Costa Rica	
	Served as Chairman on Advisory Panel for Geotherm. Dev. in El Salvador	97	Geoth	9.0	9	El Salvador	
	Served as member to review UNPD Geoth. Program in Honduras	97	Geoth	12.0	7	Honduras	

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Served as Executive committee for planning 1st Symp. on water-risk; Chair, Yellowstone field trip	92	Geoth	5.0	7	W	Y. Kharaka, J. Bischoff, R. Christiansen, other USGS staff
FUKUNAGA, PAULINE N.							
FURUKAWA, BRUCE T.							
GARDNER, CYNTHIA A.							
GARTNER, ANNE E.							
	Gave classes on eq preparedness	2	E	1	8	Oakland, CA	
	Judged science fair, Santa Clara Sch.	51	G	5	9	SFBA	C. Ostergren
GERLACH, TERRENCE M.							
GRIGGS, JIMMIE D.							
GUFFANTI, MARIANNE C.							
	Rewrote JGR paper for geothermal community	25,73	Geoth	10		Cascade Range of WA, OR, CA	
	Shepherded reports to Congress	5,6,7	Geoth	15		Crater Lake N.P., OR, Yellowstone N.P., WY	Nathenson, M.; Sorey, M.
	Answered questions regarding Cascades geothermal resources assessment	5,6,7,8,12, 25,73	Geoth	10		Cascade Range of WA, OR, CA	Muffler, P.
HANKINS, WILLIAM B.							
HELIKER, C. CHRISTINA							
	Briefed State Dept. on econ. development hazard zones	30	V	1.0	6	Puno, HI	
	Discussed haz. zones in relation to insurance act with State Ins. officials	31	V	0.1	8	HI	D. Clague
	Explained haz. zones to County Planning Dept. Director & State HUD	40,38	V	0.1	5	HI	D. Clague
	Answered eruption/hazard related questions via phone and mailed maps to real estate brokers, appraisers, local media, and public	57,75,82,64,65,66	V	50.0	8	HI	T. Moulds, T. Wright
	Gave eruption updates to Civil Defence, spoke to local groups on lava flows (provided maps)	26,36,57	V	30.0	9	HI	many
	Wrote public info. booklet "Vol. & Seis. Hazs. on the Island of Hawaii"	57,34,9,40	V,E	60.0	8	HI	
	Gave 8 talks for University, Professionals, public groups on lava flow hazs.	57,60,52	V	8.0	8	HI	
	Gave 3 briefings for Regional, State HUD officials on Kilauea hazs. (including field trip)	24	V	2.0	10	HI	T. Wright
	Took UHH student in field to advise on research project	60	V	1.0	8	HI	

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Led field trip to Kalapuna for OMB exam. and DOI staff	24	V	1.0	8	HI	T. Wright
	Gave seminar on volcanic hazs. mapping and gave field trip	60	V	2.0	8	HI	
	Briefed Bank officials on eruption status/hazs. zones	75	V	0.2	8	HI	
	Gave seminar on volcanoes for science teachers, Bishop Museum, Honolulu	59	V	1.5	5	Oahu, HI	
	Presented Kilauea eruption update for Univ. class	60	V	0.5	8	Hilo, HI	
	Gave talk on impact of current eruption, Bishop Museum, Honolulu	52	V	1.0	9	Honolulu, HI	
	Gave two briefings on current eruption	6	V	0.5	9	HI	
	Met with State and County officials to provide hazs. info.	26,43,36,37	V	1.0	10	Kalapana area, HI	
	Gave 4 briefings for FEMA officials on current eruption	9	V	4.0	10	Kalapana, HI	T. Wright
	Gave 4 briefings on the eruption and hazs. zones for Gov. task force	26,36,34,40,43	V	4.0	8	Puno, HI	
HILDRETH, EDWARD W.							
HINKLEY, TODD K.							
	Presented elementary school lectures	59	V,G	1.0	5	Denver, CO	
HOBLITT, RICHARD P.							
HOM, IRENE							
HON, KENNETH A.							
	Gave training lectures about Hawaii volcanism to NPS	6	V	2.0	8	HI	C. Holiker
	Answered questions about Kilauea eruption	57	V	10.0	7	HI	
	Helped plan field trips to active lava flows for Princeton Univ, Univ. of Colo., Univ. of Hawaii	60	V	5.5	8.5		
	Reviewed scripts, gave advise on educational videos	68	V	10.0	6.5	N, W	others
	Gave activity updates of potential hazards	26,39,43,55	V	60.0	8.5	HI	Staff at HVO
	Gave TV, Radio, and newspaper interviews on Kalapana Crisis	64,65,66,67	V	3.0	6.5	HI, N	Staff at HVO
	Gave two lectures for residents of Kalapana	57	V	1.0	10	HI	Civil Defense - Hawaii County

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Toured and explained eruption on Kaalapanana to Senator Akaka	24	V	0.5	9.5	HI	Civil Defense
	Presented poster at USGS poster review (public)	57	V	1.0	5	Denver, CO	
	Helped organize and teach course to school teachers (Inside active Volcanoes)	59, 52	V	4.5	8.5	Denver, CO	Crandell, Mullineax, Museum staff, other USGS people
	Taught class to museum volunteers for exhibit	52	V	0.5	5.5	Denver, CO	Crandell, Mullineax
	Gave lecture on Destruction of Kalapana, Denver Mus. Nat. Hist.	52	V	1.0	9	Denver, CO	Kjargaard
	Hosted Bulgarian Academy of Sciences research worker for Nat. Acad. Sci.	24	V	10.0	8.5	Bulgaria	J. Quick
	Gave talk on Hawaiian volcanoes to High School	59	V	0.5	3.5	Denver, CO	
	Gave interviews to newspaper about volcanoes in central Colorado and Honolulu paper about lava into	64	V	0.2	7.5	CO, HI	
HONMA, KENNETH T.							
HOWARD, JUDY R.							
HULTGRIEN, LYNN K.							
IVEN, MARK E.							
	Interviewed by middle sch. students	59	V	0.5	5	Lake Oswego, OR, School District	
IWATSUBO, EUGENE Y.							
JACKSON, MARIE D.							
	Manned Open House exhibit	53	E,V	4	5	Flagstaff, AZ	
JANIK, CATHY J.							
KAGIMOTO, MARIAN M.							
KAUAIKUA, JAMES P.							
KEITH, TERRY E C							
	Rewrote Geol. Newsletter for Katmai Nat. Park	6	DCS	2.0	9	AK	
	Provided support info for Sandia Lab (DOE Proj)	8	DCS	10.0	9	AK	
	Manned Exhibit USGS West. Reg. Open House	53	Geoth	2.0	9	WUS	
	Responded to reporters on volcanic, geothermal activities	64	Geoth, V	5.0	8	WUS	
KELLEY, CHRISTINE							
KLAUSNER, DELORIS E.							
KLEINMAN, JACK W.							
LARGO, ALLAN J.							
LEE, MILTON A.C.							
LIPMAN, PETER W.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	DOE advisory board	8	Energy	5	5	N	University professors
	Public Lectures, Soviet Coop. Studies	50,52,57	V	3	8	Denver, CO	
	Summary, USGS Volcano Prog.	59,62	V	1	8	SFBA	
	Aviation safety symposium participation	10,19,14,47,74 83	V	3	10	N	Many people from IGP
	Briefings, Pinatubo Erup.	64,65,66	V	2	8	WUS	
	Speaker at career seminar	60	V	1	8	Denver area, CO	
	Lectures & field trips	25,60	V	15	9	CA, AZ, CO	
LOCKHART, ANDREW B.							
LOCKWOOD, JOHN P.							
LOUGEE, ELLEN B.							
MANGAN, MARGARET T.							
MANKINEN, JEANNE C							
MARGRITER, SANDRA C.							
MATTHEWS, JANE R.							
MATTOX, T							
	Provided info on volcanic activity/lead tours to sites	64,65,68,67,6	V	18.0	8	H	HVO staff
	Gave lectures related to vol. haz. for state, fed., community programs	59,60,57,6	V	16.0	9	H	
	Participated in topical & areal conf.	60	V	4.0	8	H	
	Prepared and exhibited displays on hazards info.	57,54	V	4.0	7	H	HVO staff
	Participated in meetings w/local, district, state agencies - presenting hazards info.	39,43,36,57,49	V	30.0	9	H	
	Gave speech/info to public, local Gov. on volcanic hazards	57,63,49	V	24.0	9	H	
MCDUGAL, PATRICK J.							
MC GEE, KENNETH A.							
MCGIMSEY, ROBERT G.							
	Gave lecture on volcanoes (Univ of AK)	60	V	1.0	8	Anchorage, AK	
	Gave lecture on volcanoes to UAA extension class	60	V	1.0	8	Eagle River, AK	
	Gave presentation on volcanoes to Ak Public Lands & Info Bureau	38	V	3.0	7	Anchorage, AK	
	Gave presentation on Redoubt eruption to Rotary Club	50	V	1.0	8	Kenai-Soldotna, AK	
	Provided info to AK Geographic for Volcanoes issue, SP 1991	67	V	3.0	8	AK	B.Yount
	Gave presentation on Redoubt tephra to U.of AK Fairbanks	60	V	2.0	7	Fairbanks, AK	W. Scott
	Provided info on ash to writer for AK Magazine	67	V	0.5	6	AK	D. Richter, G. Duboss
MCKNIGHT, STEVEN B.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
MEEKER, GREGORY P.							
MELBOURNE, TIMOTHY I.							
MIKLIUS, ASTA							
MIKUS, MARY ANN							
MILLER, C. DANIEL							
MILLER, THOMAS P							
	Monitored eruption of Redoubt volcano, Hazard Assessment	1,2,6,14,19,26,32,64,65,66,67	V	30.0	8	AK	AVO members, Page, Lahr, Chouet, Harlow
	Monitored eruption of Redoubt volcano, Hazard Assessment	76	V	10.0	8	Cook Inlet Region, AK	AVO Members, Page, Lahr, Chouet, Harlow
	Monitored eruption of Redoubt volcano, Hazard Assessment	83	V	15.0	8	N	AVO Members, Page, Lahr, Chouet, Harlow
	Gave school, local societies, professional lectures	59, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83	V	5.0	7	AK	
MOORE, JAMES G							
	Manned poster for USGS West Reg. Open House	53, 59	V	2.5	8	HI, SFBA	R. Christiansen, D. Peterson
	Supplied info. to reporter for NY Times article	57, 64	L, V, E	2.0	8	NY	B. Raleigh
	Led field trip for UCSB (Sierra Nevada)	60	G	3.0	8	Sierra NV	C. Hopson
	Gave talk on Hawaiian landslides, Bay Area Min. Soc.	63	L, V, E	0.5	5	SFBA	
	Helped display petrified tree for USGS Menlo campus	53, 59	G	2.0	8	SFBA	C. Wrinke, H. Wagner, H. Oliver
	Collaborated with NPS on digitizing map of Sequoia and Kings Cany. Nat. Parks	6	G	10.0	8	CA	USPS (T. Sisson)
	Gave talk on Mt. St. Helens eruption (USGS Public Lecture Series)	58	V	3.0	8	SFBA	
MOORE, RICHARD B.							
MORRIS, JEAN							
MOULDS, TARI N.							
MUFFLER, L. J. PATRICK							
MURRAY, THOMAS L.							
	Responded to telephone inquiries and visitors concerning hazards	83, 64, 57, 65, 66	V	35.0	9	AK	
MYERS, BARBARA M.							
	Prepared Volcanic Symp. abstr./posters	2, 14, 19, 33, 47, 83, 91	V	8.0	10	W	1 USGS, 1 UOFW, 1 USFS
	Discussed emergency response with FAA, USFS, others	19, 26, 5	V	6.0	9	WA, OR	Wolfe, E., Brantley, S., Casadevall, T., Newhall, C.

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Initiated emergency call-down: prepare information statements	5,14,19,26,39,57,65,66,83	V	12.0	9.5	WA, OR	Wolfe, E., Brantley, S., and others
	Responded to media questions on regional Eqs	5,26,39,57	E	4.0	7	WA	Endo, E., Brantley, S., Wolfe, E.
	Prepared volcanic hazards films, displays, graphics	5,59,52,57,93,22,23	V	10.0	9	WA, OR	Varied others
	Gave demonstrations/tours	5,51,57,59,60,64,65,68,67	V	2.0	8	WA	Others at CVO
	Coordinated field interviews	64,65,66,67,68,59,60	V	5.0	9	WA, OR	Brantley, S., others
	Wrote article for E&V	58	V	18.0	7	N	
NAKATA, JENNIFER S.							
NAKATA, MARVIN							
NATHENSON, MANUEL							
	Review Crater Lake research for NPS	6	Geoth	4.0	7	Crater Lake Ntl. Park, OR	
NEAL, CHRISTINA							
	Assisted reported/film crews on Katmai story	64,65	V	1.5	8	N	J. Eichelbeyer
	Wrote synopsis of Katmai for NAS, Katmai Nat. Park	57	V	2.0	8	AK, N	
	Responded to inquiries about health effects of volcanic ash	57,37,64	V	1.0	7	AK	C. Nye
	Participated in volcano emergency test/drill	2	V	0.5	8	AK	
	Arranged meetings with environ. groups (Katmai drilling)	58	V	1.0	7	AK	J. Eichelberger
	Participated in discussions with community of King Salmon on Katmai drilling proposal and NPS	6,57	V	2.0	6	AK	J. Eichelberger
	Wrote report on AVO activities in Lake Clark Nat. Park	6	V	1.0	7	AK	AVO staff
	Responded to citizen inquiries in Palmer about ash	57	V	0.5	8	AK	
	Assisted filmmakers on project featuring Katmai science	65	V	0.5	9	N	
	Assisted in preparation of AVO brochure	57,24,25,60	V	0.5	7	N	AVO staff, UAF Geophys. Instit.
	Filled volcano slide requests	24	V	0.3		N	
	Gave speech on volcanoes to 3rd grade class	59	V	0.3	8	AK	
	Gave talk about volcanoes and AVO work to Kantishna Road House	57	V	0.5	8	AK	
	Gave talk about volcanoes to 10th grade class	57	V	0.3	8	AK	
	Reviewed manuscript for AK Nat. History Assoc.	57,69	V	1.0	8	AK, N	

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Provide ongoing TV, Radio, Phone, interviews and responses	57,64,65,66,67,68,69	V	52.0	9	N	AVO staff
OKAMURA, ARNOLD T							
OKAMURA, REGINALD T							
OKUBO, PAUL G.							
OSORIO, LORETTA J.							
PALLISTER, JOHN S.							
	Co-organized course on modern methods of Geology	25,49	V	6.0	8	Denver, CO	T. Casadevall and Univ. Professors (OR, Princeton, MIT, Brown U.)
	Gave lecture/presentation to Burroughs Nature Club	57	V	3.0		Cleveland, OH	
	Gave "Hands-on talk" on Volcanoes (1st Grade class)	59	V	1.0		Golden, CO	
	Gave talk (Am. Museum Nat. Hist.)	52,57	V	1.0		Portal, AZ	Ed duBrey
	Gave lecture on Mt. St. Helens to Rocky Mtns. Special Libraries Assn.	58,57	V	2.0		CO,WY,NM	T. Casadevall
PASKIEVITCH, JOHN F.							
PETERSON, DONALD W							
	Co-organized/chaired symposium of Mt. St. Helens eruption for Geol. Assoc. of Canada	25,59,60,64,65,66,69,76,77	V	20.0	9	Canada, N	C. Hickson (Geol. Survey of Canada)
	Gave two speeches on traveling exhibit "inside active volcanoes" at Lawrence Berkeley Hall of Science	43,52,60,72,75,81,52,57,59	V	5.0	9	SFBA	
	Served as Secretary of IAVCEI's Commission on Mitigation of Volcanic Disasters, and IDNDR	95,97	V	40.0	7	W	C. Newhall
	Helped prepare/manned poster for USGS Western Region Open House	53	DCS	3.0	8	SFBA	J. Moore, B. Christianen, B. Tilling
	Responded to query about tephra (for Airline Pilots Assoc.)	91	V	1.0	8	N	
	Gave talks on volcanoes and hazards (many Service Clubs, Schools,)	50,59,60,57	V	5.0	9	SFBA	
	Responded to questions from news media, T.V., Magazines, about Mt. St. Helens	64,65,66,67,68	V	3.0	7	SFBA	
POWER, JOHN A.							
	Responded to inquiries-emergency response to Redoubt volcano	19,26,37,32,14,39,42,45,2,83	V	45.0	8	AK	Staff of Alaska Volcano Observatory
	Gave presentation on eruption forecasting at Redoubt volcano, Fed. agencies and Airline Ind.	2,14,19,83	V	1.0	5	AK	Tom Miller
	Gave presentation at Geophysics Dept. U. of Washington on seismicity	60	V	4.0	8	WA	
	Gave presentations/briefings - USGS emergency response to Pinatubo eruption, Clark AFB and Subic Bay Naval Base	2,23,21	V	15.0	10	Philippines	C. Newhall, A. Lockhart, many others
	Assisted with USGS circ. 1061 - Redoubt volcano, AK		V	5.0	5	AK	S. Brantley and staff

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Gave presentation at Wood River School - 4th grade	59	V	1.0	8	AK	
PUNIWAJ, GARY							
QUICK, JAMES E.							
REED, BARBARA A.							
RIO, MARGO N.							
ROSE, WILLIAM I.							
SAKO, MAURICE K							
SCHNEIDER, DAVID J.							
SCOTT, WILLIAM E.							
	Reviewed environmental impact statements, Mt. Hood Nat. Forest	5	V	8.0	6	Mt. Hood Natl. Forest, OR	Pierson, T.
	Served on interdisciplinary team to advise preparers of EIS, Timberline, Mt. Hood	5	V	2.0		Mt. Hood Natl. Forest, OR	
	Advised on hazards in Oregon for pamphlet on Mt. Hood hazards	26	V	5.0	5	OR	R. Crandell
	Advised during response to Mt. Pinatubo	24,2,23,67	V	10.0	6	Philippines	many others
	Advised and education related to Redoubt eruption	64,65,57,42,39	V	20.0	7	AK	many others
	Taught volcano hazards course for NPS and USFS	6,5	V	5.0	8	WUS, AK	others
	Interviewed and reviewed for article on Mt. Hood hazards (local newspaper)	64	V	1.0	8	OR	
SHAW, HERBERT R							
SHERROD, DAVID R.							
	Responded to requests for geologic maps	89	Geol. Map	7.5	1.5	PNW	
	Responded to requests on geothermal/precious metals	73,77	Geol. Map	2.3	1.5	PNW	
	Responded to requests for general geologic info.	57	V	2.5	1		
	Responded to requests from State of Oregon -Mineral industries	25	Geol. Map	2.0	2.5		
	Responded to requests for info	5,7	Geol. Map	8.0	2.5		
	Gave talks on College geology	60	Geol. Map	6.0	??		
SIMEON, ALLAN G.							
SIMPKINS, MARSHA A.							
SMITH, GLORIA M.							
SMITH, JAMES G.							
SMITH, ROBERT L							
STINE, CYNTHIA M.							
STOKES, JOSEPH B.							

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Served as member of Hawaii County Vog Auth.	1,6,26,27,29,32,36,37,39,40,42,43,44,45,50,59	V	24.0	10	HI	
	Gave lecture and slide/talks for geochemistry program at HVO (info on gas emissions)	1,2,27,32,34,36,37,38,40	V	36.0	9	HI	
	Prepared exhibits/public info. displays on HVO's geochemistry program	42,43,44,45,50,54,57,59,60	V	10.0	8	HI	HVO staff
	Provided info., interviews for National/Local T.V., newspaper, and radio media	64,65,66,67,68,69	V	12.0	9	HI,N	HVO staff
	Participated/cooperated with local, national, and international filmmaking crews (relating to Geochemistry Program at HVO)	68,67	V	10.0	8	HI	
	Provided written/oral testimony to Fed. State, Local legislatures (in support of proposals relating to HVO Geochem. Prog.)	26,27,29,32,34,36,37,39,40	V	18.0	10	HI	HVO staff
	Met with American Lung Assoc. of Hawaii (status of geol. activity and hazards)	44,50,51,52,55,57,59,60	V	24.0	10	HI	
STRICKER, NANCY J.							
SULLIVAN, LISA E.							
SUTTON, ANDREW J.							
	Gave talks to local Schools about volcanoes	59	V,Global Change	4.0		VA	
	Gave talks to local Univ. on volcano monitoring	60	V,Global Change	1.0		VA	
	Reviewed local (Hawaii) development plan	44	V,Global Change	1.0		HI	T. Wright, L. Heliker
	Reviewed training guide for UNESCO (vol. hazs.)	93	V,Global Change	2.0		W	G. Wieczorek, P. Gori
	Served as Science Fair Judge	59	G	2.0		Winchester, VA	
	Served as mentor for local high school student	59	V,Global Change	15.0		VA	
SWANSON, DONALD A.							
	Explained interpretative strategies, Mt. St. Helens Volc. Mon.	5	V	5	8	Mt. St. Helens, WA	
	Led field trips to crater	57	V	3	10	PNW	
	Lectured at jr. high school, Madera, CA	59	V	0.1	5	Madera, CA	
	Lectured at Portland State Univ.	60	V	2	8	Portland, OR	
	Talked to airline reps, Intl. Conf. on ash	83	V	1.5	6	W	

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NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Reviewed road construction plans, Johnston Ridgw Vis. Center	5	V	3	8	Mt. St. Helens, WA	
SWENSON, DORIS R.							
TAKABA, AARON T.							
TAKAHASHI, TAEKO J.							
TANIGAWA, WILFRED R.							
TENGAN, IRENE S.							
THOMPSON, J. MICHAEL							
	HS Career Day speaker	59	G	1	6	SFBA	
	Menlo Park Emergency Preparedness Mtg.	44	E	1	6	SFBA	W. Rambo, D. Tsoi, M. Moore, M. Bonito
	Speech, Calif. Assoc. Chem. Teachers	59	Geoth	4	8	CA	
THORNBUR, CARL R.							
TILLING, ROBERT I.							
	Participated in Bay Area Teachers Workshop	59	V	2.0	5	SFBA	A. Lindh
	Gave talk on volcanoes to 5th graders, San Francisco school	59	V	1.0	9.5	SFBA	
	Continuing work on updating/revising a joint USGS-Smithsonian product	57,59,60,62	E,V	15.0	8	W	T. Simkin
	Invited participant in First Intl. Symposium on Volcanic Ash, Airline Ind.	57,19,26,29,83,95	V	3.0	8	W	many others, USGS
	Authored book "Born of Fire: Volcanoes and Igneous Rocks for Young People", Jr HS Level	59,60,61	V	60.0	?	N,W	
	Presentation on Volc. Hazards to Comm. on Nat. Disasters, NAS/NRC	60	V	2.0	5	N	
	Gave presentation on volcanic hazards to Committee on Natural Disasters of NAS/NRC	60,24	V	2.0	5	N	other OEVE contributors
	Gave interviews for TV series "Earth Revealed"	57,59,60,65	V	4.0		N	R. Hazlett, other OEVE contributors
	Gave lecture on volcanology, vol. hazs. - Stanford Univ.	60	V	3.0	8	N,W	
	Gave lecture on volcanology, vol. hazs. - CA State Univ. Hayward	60	V	1.0	8	N,W	
	Served on committee for USGS Open House, 91	57,59,53	V	3.0	8	N	many other USGS contributors
	Gave many TV and radio interviews during Unzen and Pinatubo eruptions	57,64,65,66	V	2.0	6.5	Japan, Philippines,N	
	Gave USGS Public Series Lecture "Volcano: friend or foe?"	57,59,64,65,66	V	4.0	9	N	
	Beginning to work on USGS general interest publication on plate tectonics	57,59,67	V	10.0		N	W. Kious, USGS volunteer

BRANCH OF IGP

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Authored "Hawaiian Volcanoes" for Scientific American	57,67	V	6.0		HI	J. Dvorak, C.E. Johnson (co-authors)
	Authored "Eruptions of Mt. St. Helens" Past, Present, Future	9,26,57,59,64,65,66	V	80.0	9	PNW	D. Swanson, L. Topinka, COV, ; staff of BVS/Reston
	Convened Workshop on Volcanism and Geotherm. Res., Lassen Volc. Nat. Park	6	V	20.0	5	HI, AK, Cascades, Yellowstone, PN W,WY	M. Sorey, (WRD), W. Scott (CVO)
	Gave lecture on Nat. Disasters and Global Change", Intl. Sym. San Jose, Costa Rica	?	V	6.0	7.5	Latin America,N, W	
	Introduced USGS-Smithsonian film "Inside Hawaiian Volcanoes" Peninsula Geol. Soc.	57,60	V	1.0	8	HI	USGS, Smithsonian colleagues
	Participated in mtg. regarding MOU between USGS and UNESCO	21,22	E,V,L	3.0	3.5	W	many colleagues
	Gave lecture on volcano monitoring and hazards-Univ. of WA, Seattle	57,60,83	V	14.0	7	N, W	
	Served as ombudsman/facilitator for USGS Circ. 1073, "Living with Volcanoes,"	9,21,22,25,24	V	14.0	9	N,W	T. Wright, T. Pierson, OEVE contributors
TOKUKE, JON P.							
TOMASELLO, CAROLE F.							
TOMORI, ALVIN H.							
TRUSDELL, FRANK A.							
WATT JR., RICHARD B.							
	Served as liason for CVO Explorer-Scout Troop	51	V	5.0	5	Vancouver, WA	Doubas, M.
	Interfaced with USFS on Mt. St. Helens monument	5	V	4.0	3	Vancouver, WA	Brantley, S., Swanson, D., Miller, D.
WATAI, MATTHEW S.							
WIEPRECHT, DAVID E.							
WILLIAMS, TAMMI M.							
WOLD, MARY BETH							
WOLFE, EDWARD W.							
	Gave talk-Annual Workshop (Vol. Haz. in Pacific NW)	26,40,44	V	3.0	6	PNW	
	Gave talk-Symposium (Mt. St. Helens monitoring successes and limitations)	26,44,57,59	V	3.0	6	PNW	Several CVO people
	Gave lectures-Univ. of Hawaii (Eruptions of Mt. Pinatubo)	60	V	5.0	4	HA, WA	
	Gave public lecture-Eruption and crisis response, Mt. Pinatubo (Exploratorium)	52,57,59	V	2.0	6	SFBA	
	Gave lecture-Portland State Univ. (volcano hazards)	60	V	6.0	4	Portland, OR	Several CVO people
	Gave news-media interviews (Explosions/response Mt. Pinatubo)	57,64,65,66,68,69	V	1.0	6	OR,N	Other CVO staff

BRANCH OF IGP

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Gave volcano response activities (Mt. St. Helens, explosions)	5,19,26,39	V	2.0	8	PNW	B. Myers, S. Brantley
	Gave Pinatubo Info. Res. Activities	2,21,22,23	V	30.0	8	PNW, Philippines	Numerous USGS colleagues
WRIGHT, THOMAS L.							
	Served as member of committee on Volcanic Hazards at Kilauea	9,36,40	V	6.0	8	H	C. Heliker
	Gave briefings on volcanic hazards (to County/State Gov.)	38,40,43,44	V	2.0	5	H	
	Gave briefing on Volcanic Hazards and Fair Ins. Bill (legislature committee)	34	V,E	0.5	10	H	
	Gave briefing on volcanic and seismic hazards (Puna Comm. Planning Council)	53	V	0.5	8	H	C. Heliker
	Provided fostering of outreach by other employees of HVO	24,36,37,44,54,57,59	V	1.0	10	H	B. Stokes, C. Heliker, J. Kauahakara, P. Okubo
YAGER, DOUGLAS B.							
	Manned poster presentation, USGS Denver, CO	53	V	1.0	5	Denver, CO	Lipman, Sawyer
YAMASHITA, KENNETH M.							

OTHERS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
BRABB, EARL (WRG)							
	Numerous speeches, lectures; briefings, advisory and review services, etc. See 2/6/92 memo for details.						
Pierson, T (WRD-CVO)							
	Gave talk on volcanic hazards at Symposium	39,40,57,59,64,65	V	3.0	8	PNW	many others at USGS
	Gave talk on Vol. Haz. at 10th Reunion of Pulitzer Prize Journalists	64	V	1.0	9	PNW	
	Gave lecture on debris flows for continuing education, Univ. Wisc. at Madison	24,25,84,85,86	L	3.0	6	CA,WUS	
	Assisted in writing USGS Cir. 1073 "Living with Volcanoes"	57	V	35.5	9	N,W	T. Wright and others
	Gave talk on volcanoes to 3rd graders, Hearthwood Elem. School, Vancouver, WA	59	V	0.5	6.5	Vancouver,WA	
	Presented workshop on volcanoes, 4th-6th graders, Hearthwood Elem. School, Vancouver, WA	59	V	1.0	7	Vancouver,WA	
	Gave talk on Vol. Hazs. in Cascades, Elderhostel, Welches, OR	63	V	2.0	8	W	
	Gave talk on Volcanoes to 1st graders - French-American School	59	V	0.5	0.5	Portland, OR	
	Gave talk on Vol. Hazs. in Cascades, Elderhostel, Welches, OR	63	V	0.5	8	W	
	Assisted in training Day for US Forest Service interpreter-naturalists, Mt. St. Helens	5	V	1.0	8	Mt. St. Helens,WA	
	Gave briefing in Philippines on excess sediment problems	97	V	0.5	5	Mt. Pinatubo area	
	Gave briefing at Clark AB for US Ambassador on lahar hazards	23	V	3.0	7	Philippines	W. Duffield
	Gave briefing in Manila for Philippine cabinet secretaries on lahar hazards	97	V	1.0	8	Mt. Pinatubo	
	Gave briefing to Brig. Gen. Crocker (US Army Special Forces) at Clark AB (on Pinatubo lahar hazards)	2	V	0.5	5	Philippines	W. Duffield
	Gave talk on volcanoes to 6th graders- Fircrest Elem. School	59	V	0.5	8	Vancouver,WA	
	Gave talk on volcanoes to 3rd graders - Hearthwood Elem. School	59	V	0.5	1	Vancouver,WA	
WALLACE, ROBERT (RETIRED)							

OTHERS

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
	Member of Engineering Criteria Review Board	38	E,L	11	18	SFBA	R. Brown, R. Borchardt
	Member of Governor's Board of Inquiry, LPE	38	E	15	9	CA	
	Taught docents for field trips	63	E,L	12	10	SFBA	
	Interviewed by magazines & newspapers	64,65,66,67	E	2	10	SFBA	
WENTWORTH, CARL (WRG)							
	Guided TV helicopter/News reporters to Loma Prieta Eq.	65	E	1.0	8	SFBA	
	Tutored Science Writer (Bay region geol., reflection profiling)	64	E	1.0	8	SFBA	
	Prodced Science Writer	64	E	1.0	8	SFBA	
	Gave talk on computer based map	25	E	5.0	7		
	Gave papers on application of GIS Tech. at Stanford Zonation Conf. Gave a press briefing.	85,64,65	E	100.0	8	SFBA	R. Borchardt

APPENDIX I. OUTREACH ACTIVITIES FOR CUSTOMER GROUP # 52 (MUSEUMS)

I-1

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Area	Other Contributors
COOK, SARAH ANN	Responded to telephone and visitor requests	,1,6,9,14,19,20,21,22,23,25,27,44,52,57,59,60,64,65,66,67,68,69,70,73,76,77,83,91,95,	V	30		W	other OEVE personnel
KLICK, DONALD W.	Prepared, Distributed fact sheet on ICGCSD, US CSDP	,1,3,6,7,8,16,20,25,34,35,42,43,50,51,52,57,59,60,62,64,65,66,67,68,69,70,72,75,76,77,78,82,85,89,	Cont. Sci. Drilling	7.0		N	
KLICK, DONALD W.	Authored Cont. Sci. Dr. quarterly newsletter	,1,3,6,7,8,16,20,25,34,35,42,43,50,51,52,57,59,60,62,64,65,66,67,68,69,70,72,75,76,77,78,82,85,89,	Cont. Sci. Drilling	6.0		N	Many others
KOCKELMAN, WILLIAM J.	Authored, distributed hazards assessing, mapping, reduction techniques	,9,25,26,32,26,40,41,42,43,44,57,50,52,55,59,88,	E,V	180.0	7	Latin America, Caribbean, CA, N	Galloway, G., Parker, G., other USGS
ANDREWS, DUDLEY J.	Coordinated requests for & assigned speakers for 50 talks to user groups	,4,39,42,50,51,52,54,57,59,82,83,	E	12		SFBA	some OEVE
BOATWRIGHT, JOHN	Gave speech at Exploratorium	,52,	E	2.0	10	SFBA	Menio Staff provided slides
BOATWRIGHT, JOHN	Gave speech at SF City Museum	,52,	E	2.0	4	SFBA	Menio staff provided slides
HOLZER, THOMAS L.	Organized speakers bureau	,50,51,52,	E	1	10	SFBA	Andrews, J.; many others
SPUDICH, PAUL A.	Gave talk on Loma Prieta eq and safety	,52,	E	0.5	3	SFBA	

Museums

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Area	Other Contributors
PERSON, WAVERLY J.	Earthquakes in "Earthquakes and Volcanoes"	1,5,7,8,9,13,14,15,25,40,52,57,59,77,	E	5.0	6	W	
BAKUN, WILLIAM H.	Enlarged Bay Area seismicity poster for public displays (Barry Museum, UCB, Stanford, etc.)	52,	E	5	7	SFBA	Goter
DAISS, CHARLES F.	Supported Seismograph display, Calif. Acad. Sci.	52,	E	0.5		SFBA	
DAWSON, PHILLIP B.	Supported Seismograph display, Mt. Shasta Mus.	52,	E,V	3	8	NCA	J. VanSchaack, D. Farrell
KLEIN, FRED W.	Produced video tape-Loma Prieta eq.	50,52,57,59,60,68,70,3,	E	50	8	NCA	Walter, S.
KLEIN, FRED W.	Produced video tape-Central CA eq. animation	50,52,57,59,60,68,70,3,	E	15	5	NCA	Walter, S.
LESTER, FREDRICK WILLARD	Gave 6 talks to public	50,52,	E	2.25	5	SFBA	none
LESTER, FREDRICK WILLARD	Helped maintain and interpret seismographs at several locations	52,60,6,	E	1	5	NCA	2 others
LINDH, ALLAN G.	Prepared weekly seismicity reports for 150 newsp. & TV	8,11,15,20,24,25,26,42,52,59,60,64,65,66,67,70,73,80,81,	E	50	7	W	S. Walter, B. Hishoru, N. MacGregor-Scott
PROSE, DOUGLAS V.	Produced video OFR of Loma Prieta Earthquake	25,26,39,52,57,59,60,65,	E	60	10	W	

Museums

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
PROSE, DOUGLAS V.	Provided video OFR: 6 hrs of scenes of Loma Prieta	,25,26,39,52,57,59,60,65,	E	40	9	W	
PROSE, DOUGLAS V.	Provided video OFR: USGS/DOI releases	,25,26,39,52,57,59,60,65,	E	80	10	W	
WEAVER, CRAIG S.	Participated in Humboldt Bay EQ. Conf.	,25,26,29,34,39,40,41,42,43,44,45,46,47,48,50,51,52,53,54,55,56,57,59,60,64,65,66,72,73,74,75,76,77,78,79,80,81,82,83,	E	7.0	9	PNW,CA	B. Atwater, M. Leowski, S. Clarke
YELIN, THOMAS S.	Served on planning committee for NEHRP Workshop	,9,25,26,29,31,34,35,39,40,41,43,52,	E	3.0	7.5	PNW	Several USGS scientists
CRANSWICK, EDWARD	Authored Newsletter (Public Seis. Net)	,52,57,59,60,86,97,	E	5.0	6	SFBA	Barilli, R.
MADOLE, RICHARD F.	Provided data & advice for preparing a series of models for museum Rocky Mtn. Nat. Park	,6,52,	G	5.5	10	CO	
OBERMEIER, STEPHEN F.	Gave talk, Illinois State Mus.	,25,52,	E	1		Wabash Valley, IN,US	
BLANPIED, MICHAEL L.	Was keynote speaker and panelist for "Safety Day", Lawr. Berk. Hall of Sci.	,44,52,36,	E	3	6	SFBA	local safety officials, museum staff
PRESCOTT, WILLIAM H.	Loaned equipment to Smithsonian for travelling exhibit	,52,	V	2.0	5	N	
HELZ, ROSALIND L.	Conducted seminar on eruptions for Smithsonian docents	,52,	V	6	6	Washington, D.C.	

Museums

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Area	Other Contributors
SATO, MOTOAKI	Consultation, Smithsonian Volc Exh.	.52,	V	1	3	N	
BRANTLEY, STEVEN R.	Prepared and gave educational slide presentation	.5,19,33,50,52,57,59,83,84,	V	15.0	8	WA	
CASADEVALL, THOMAS J.	Gave lectures about volcanoes, volcano hazards, -Denver Museum of Nat. Hist., Teachers Workshop	.52,57,59,	V	3.0		CO	
CASADEVALL, THOMAS J.	Gave public lecture about Redoubt and aviation safety-Denver Museum of Nat. Hist.	.52,57,	V	3.0		CO	
CASADEVALL, THOMAS J.	Gave lecture to Denver Museum of Nat. Hist. (Eruption of Mt. Pinatubo)	.52,57,	V	3.0		CO	
DUFFIELD, WENDELL A.	Helped produce film "Inside Hawaiian Volcanoes" and wrote Teachers Guide	.5,6,25,50,52,53,59,60,62,	V	90.0	9.9	NW	D. Swanson, D. Fiske
HELIKER, C. CHRISTINA	Gave 8 talks for University, Professionals, public groups on lava flow hazards.	.57,60,52,	V	8.0	8	HI	
HELIKER, C. CHRISTINA	Gave talk on impact of current eruption, Bishop Museum, Honolulu	.52,	V	1.0	9	Honolulu, HI	
HON, KENNETH A.	Helped organize and teach course to school teachers (Inside active Volcanoes)	.59,52,	V	4.5	8.5	Denver, CO	Crandell, Mullineax, Museum staff, other USGS people

Museums

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Area	Other Contributors
HON, KENNETH A.	Taught class to museum volunteers for exhibit	,52,	V	0.5	5.5	Denver, CO	Grandell, Mulineax
HON, KENNETH A.	Gave lecture on Destruction of Kalapana, Denver Mus. Nat. Hist.	,52,	V	1.0	9	Denver, CO	Kjargaard
LIPMAN, PETER W.	Public Lectures, Soviet Coop. Studies	,50,52,57,	V	3	8	Denver, CO	
MYERS, BARBARA M.	Prepared volcanic hazards films, displays, graphics	,5,59,52,57,93,2,23,	V	10.0	9	WA,OR	Varied others
PALLISTER, JOHN S.	Gave talk (Am. Museum Nat. Hist.)	,52,57,	V	1.0		Portal, AZ	Ed duBrey
PETERSON, DONALD W.	Gave two speeches on traveling exhibit "inside active volcanoes" at Lawrence Berkeley Hall of Science	,43,52,60,72,75,81,52,57,59,	V	5.0	9	SFBA	
WOLFE, EDWARD W.	Gave public lecture-Eruption and crisis response, Mt. Pinatubo (Exploratorium)	,52,57,59,	V	2.0	6	SFBA	

APPENDIX J. OUTREACH PROGRAM FOR LANDSLIDE

J-1

Landslide Program

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
HAYS, WALTER W.	Gave presentations, media interviews, reports, and technical assistance on policy development, NAS/NRC, IDNDR	,24,95,	,E,V,L,	180	10	,N,W,	Decade Committee; Loes est. Comm.; federal agencies
HAYS, WALTER W.	Gave presentations, report, attended meetings regarding policy development, IDNDR, OSTP	,24,	,E,V,L,	20	9	,N,W,	federal agencies
HAYS, WALTER W.	Involved in presentations, media interviews, publications, meetings, workshops, chaired committee on eq. risk, gave technical assistance; helped develop policy UNESCO, IDNDR	,96,95,	,E,V,L,	30	10	,W,	UNESCO, Franch Assoc. of Eq. Eng.
HAYS, WALTER W.	Attended meetings, published and/or reviewed documents, Coun. Envir. Qual.	,24,	,E,V,L,	3	6	,N,	25 federal agencies, and 25 NGO's
HAYS, WALTER W.	Produced presentations, documents, slides, video tapes, FEMA	,9,	,E,V,L,	12	10	,N,	FEMA, universities, state and local government reps.
HAYS, WALTER W.	Gave presentations, attended meetings, was steering committee liaison, Univ. of Colo. NHRIC	,60,	,E,V,L,	10	8	,N,	NOAA, NSF, NAS/NRC, FEMA, city of Los Angeles
HAYS, WALTER W.	Gave presentations, attended meetings, was on steering committee, FEMA, IDNDR	,9,95,	,E,V,L,	5	7	,N,	FEMA, NSF, NOAA, DOE, Oak Ridge Universities
HAYS, WALTER W.	Gave keynote speeches at meetings; publications, DOE, INDR	,8,95,	,E,V,L,	2	10	,N,	Lawrence Livermore Lab.; consultants
HAYS, WALTER W.	Gave keynote speeches at meetings; publications, EERI, IDNDR	,92,95,	,E,V,L,,	2	10	,N,	NSF, FEMA, NIST
HAYS, WALTER W.	Gave keynote speeches at meetings; publications, NCEER	,60,95,	,E,V,L,,	1	10	,N,	NSF
HAYS, WALTER W.	Gave speeches; publications, John Hopkins Univ., IDNDR	,60,95,	,E,V,L,	1	10	,N,W,	NSF, OFDA, FEMA

Landslide Program

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
HAYS, WALTER W.	Gave speeches; publications	,84,95,	,E,V,L,	3	10	,N,	
HAYS, WALTER W.	Gave presentations; publications, AIC	,92,95,	,E,V,L,	1	7	,N,	FEMA, city of Los Angeles, University of Colorado, AIC, Cornell University
HAYS, WALTER W.	Gave interviews to media	,84,85,86,87,89,95,	,E,V,L,	22	10	,N,CUS,	
HAYS, WALTER W.	Authored publication, report on national hazards, Penn. Acad. Sci.	,83,	,E,V,L,	5	7	,N,	educators, NOAA
KOCKELMAN, WILLIAM J.	Organized geohazards reduction course in Italy	,80,25,97,	,L,E,V,	30.0	8	,SCA,NE,Turkey,Italy,	
KOCKELMAN, WILLIAM J.	Organized panels for Intl. Conf.	,9,16,25,26,32,40,44,90,	,L,E,	5.0	6	,CA,N,W,	Tsai, D.
KOCKELMAN, WILLIAM J.	Greeted and directed WR Open House visitors	,53,	,E,V,L,,	2.0	6	,NCA,	Other USGS
KOCKELMAN, WILLIAM J.	Gave presentations, conference, seminars, meetings	,40,41,43,44,57,9,16,25,26,32,49,44,90,	,E,L,	30.0	7	,NCA,SCA,Portland,OR,W,N,	
OLSEN, ALICE L.	Mailed hazard & haz.-reduc.materials	,24,25,32,57,60,6585,97,	,E,L,V,	250	9	,CA,N,W,	Kockelman
OLSEN, ALICE L.	Public contact via tel.	,57,	,E,L,V,	166	9	,CA,N,W,	Kockelman
UPDIKE, RANDALL G.	Assisted in briefings, DOI Eq. Prog.	,6,7,15,	,E,V,L,,	10.0	8	,N,	
UPDIKE, RANDALL G.	Participated in congressional discussions (budget requests-all programs)	,24,	,E,V,L,	75.0	8	,N,	

Landslide Program

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
UPDIKE, RANDALL G.	Prepared sheets and reports to Peck, Lujan, etc., OEVE topics	,24,	,E,V,L,	20.0	3	,N,	
BROWN JR., ROBERT D.	Reviewed grants, proposals, reduction, Loma Prieta eq.	,9,26,	,E,L,	10.0	8	,SFBA,	
BROWN JR., ROBERT D.	Gave appraiser's seminar	,82,	,E,L,	2.0	8	,West Coast,N,	
BROWN JR., ROBERT D.	Gave post-eqk. Cong. Forums lecture	,24,43,57,	,E,L,	7.0	8	,SFBA,	Ward, Page
BROWN JR., ROBERT D.	Responded to citizen/media contacts	,57,64,66,	,E,L,	10.0	3	,CA,WUS,	
BROWN JR., ROBERT D.	Conducted field trips, NRC, OMB, foreign	,24,11,	,E,L,	10.0	5	,CA,	Many others
DINGEL, EMMETT W.	Manned county fair exhibit	,54,	,E,V,L,	1	10	,SFBA,	
LAJOIE, KENNETH R.	Discussed, supplied info, photos, pubs. cons. to local water district	,49,	,L,	1.0	8	,SFBA,	
WESTERLUND, ROBERT E.	Prepared & manned Open House displays	,53,	,E,L,	7	8	,SFBA,	H.P. Liu, D. Warrick, J. Andrews
LESTER, FREDRICK WILLARD	Conducted tours of USGS Menlo Park facilities, especially Bldg. 7	,50,51,57,59,	,E,V,L,	1.5	6	,W,	2 others
LESTER, FREDRICK WILLARD	Responded to phone calls asking for eq. info.	,57,	,E,V,L,	100	7	,W,	Many USGS MP staff
MACGREGOR-SCOTT, NAN G.	Assisted in town preparedness meetings	,39,42,43,64,58,	,E,L,	5.0	7	,SFBA,	B. Page

Landslide Program

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
MACGREGOR-SCOTT, NANG	Demonstrated seismometer, distributed brochures, answered requests at County Fair	.54,	.E,V,L.	5.0	8	.SFBA,	Menlo staff
VANSCHAACK, JOHN R	Provided discussions with US COE on emergency responses	.3,	.E,L.	1.0	5	.SFBA,	Burdette, Kempe
VANSCHAACK, JOHN R	Gave lecture to San Jose School Dist. on safety	.42,	.E,L.	0.5	8	.SFBA,	
ANDERSON, R. ERNEST	Participated in safety review, Jordanelle Dam, Utah	.15,34,	.E,L.	22.5	9	.Wasatch,Pr ovo UT,	Macbeth, Joiner, Swolls, Schuster
BAUM, REX L.	Presentation of preliminary findings RE landslide investigations	.49,89,	.L,	5	5	.Honolulu,HI	Fleming, R.; Ellen, S.; and Reid, M. (WRD Honolulu)
BROWN III, WILLIAM M.	Member, speaker, exhibitor Colo. Hazards Mitigation Council	.26,	.L,E.	10	10	.CO,	R. Schuster, R. Madole, E. Harp
BROWN III, WILLIAM M.	Lectured, Intl. course on earthquakes	.95,	.L,E.	5	10	.W,	Many OEVE
BROWN III, WILLIAM M.	Member, speaker, exhibitor Assoc. State Floodplain Managers (ASFPM)	.92,	.L,E.	15	10	.N,	Water Resources Division
BROWN III, WILLIAM M.	Member, speaker Colo. Society of Natural Hazards Research	.92,	.L,E.	2	8	.CO,	
BROWN III, WILLIAM M.	Lectured on geol. hazards, Ital. Nat. Res. Coun.	.97,	.L,E.	60	10	.W,	Several Geol. & Water Res. Divisions
BROWN III, WILLIAM M.	Advisor for ordinance, landslide hazards, Oahu	.49,	.L,	45	10	.HI,	Several Geol. & Water Res. Divisions
DENISON, JUDITH S.	Manned exhibit for Colorado Natural Hazards Coun. Mtg.	.38,	.L,	1.0	9	.CO,	W.M. Brown
DENISON, JUDITH S.	Manned exhibit (AGU 91 Fall Mtg)	.92,	.L,	3.0	8	.N,	W.M. Brown
DENISON, JUDITH S.	Responding to requests from public for Landslide bibliographic searches	.57,	.L,	1.5	8	.W,	

Landslide Program

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
FLSMING, ROBERT W.	Authored several products, Honolulu Public Works	.49,	.L,	240	?	.Honolulu, HI	Wilson, E. Baum, C. Reid
GORI, PAULA L.	Assisted communication between scientists and practitioners, EARTHQUAKE SPECTRA	.89,85,	.E.L,	20	8	.N,CA,	Berknopf, Campbell, Nishenko, Soler
KEEFER, DAVID K.	Authored OFR on geologic hazards	.9,40,58,78,79,82,	.L,	200	8	.SFBA,	E. Harp
KEEFER, DAVID K.	Member of ad hoc committees on landslide & eq hazards	.25,	.L,	8	7	.CA,	OEVE
KEEFER, DAVID K.	Member of review committee to evaluate proposals	.49,	.L,	3	6	.SFBA,	
KEEFER, DAVID K.	Presentation at Career Day, elem. sch.	.59,	.L,	2	6	.SFBA,	
KEEFER, DAVID K.	Interviewed by newspaper, TV, & radio reporters	.84,85,86,	.L,	4	8	.SFBA,N,	
KEEFER, DAVID K.	Appeared in doc. film on eqs	.85,88,	.L,	2	7	.SFBA,	Mary USGS
KEEFER, DAVID K.	Gave lectures	.60,85,89,	.L,	20	8	.N,	
MADOLE, RICHARD F.	Served as expert witness in trial (USA v. Colorado), US Dept. Justice	.5,24,	.L,	60.0	10	.CO,	
MADOLE, RICHARD F.	Served on landslide hazards subcommittee, State of Colo.	.38,	.L,	1.0	10	.CO,	B. Brown, B. Schuster, E. Harp
MADOLE, RICHARD F.	Led field trip	.5,24,	.L,	2.0	10	.CO,	
SAVAGE, WILLIAM Z.	Supervised graduate student thesis (CIE Dept.)	.80,	.L,	7.0	10	.W,	
SAVAGE, WILLIAM Z.	Taught course in hydrogeologic hazards in Italy	.97,80,	.L,	40.0	10	.W,	

Landslide Program

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
SAVAGE, WILLIAM Z.	Hosted foreign students	.97.60.	.L.	30.0	10	.W.	
SCHUSTER, ROBERT L.	Gave distinguished lecture on engineering geology, 33 University Depts.	.60.	.L.	30.0	8	.N,CANADA	
SCHUSTER, ROBERT L.	Gave presentation on landslide-dam hazards (Geotech Soc., Canada & L.A. Section AEG)	.85.	.L.	2.0	8	.Vancouver, BC, SCA, CA,	
SCHUSTER, ROBERT L.	Gave presentation on landslide-dam hazards (Italian NRC)	.97.	.L.	0.5	8	.Italy,	
SCHUSTER, ROBERT L.	Gave presentation on landslide dam hazards (Ecuador Eng. Preparedness Prog.)	.97.	.L.	0.5	7	.Ecuador,	
SCHUSTER, ROBERT L.	Gave presentation on irrigation-induced landslides, Ecuadorian Gov.	.97.	.L.	0.5	7	.Ecuador,	
SCHUSTER, ROBERT L.	Gave presentation on natural dams at Mt. St. Helens (Nigeria)	.97.	.L.	0.5	6	.Cameroon and Nigeria,	
SCHUSTER, ROBERT L.	Gave panel presentation on earth-science education (ASCE)	.85.	.L.	0.5	9	.N,	
SCHUSTER, ROBERT L.	Gave presentation on ground failure caused by 1949 & 1965 Puget Sound Eq.	.92.	.L.	0.5	8	.PNW,N,	
SCHUSTER, ROBERT L.	Gave presentation on ground failure in W. Washington	.60.	.L.	0.5	8	.WA,	
SCHUSTER, ROBERT L.	Gave presentation on slope-stability studies for mountain infrastructure projects	.97.	.L.	0.5	8	.Himalayan Nations,	

Landslide Program

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
SCHUSTER, ROBERT L.	Served as chairman for slope stability session	,97,	,L,	0.5	8	,Himalayan Nations,	
SCHUSTER, ROBERT L.	Gave presentation on tunnel drains for natural dams, Intl. Conf.	,85,	,L,	0.5	8	,W,	
SCHUSTER, ROBERT L.	Gave presentation on landslide-dam hazards, ASCE	,85,	,L,	0.5	8	,Washington, D.C.,	
SCHUSTER, ROBERT L.	Gave presentation on geologic hazards at Lake Nyos, W. Africa	,60,	,L,	0.5	8	,CO,	Michele Tuttle
SCHUSTER, ROBERT L.	Served as keynote speaker on landslide hazard management -(Intl. Slope Stability Conf.)	,85,	,L,	0.5	8	,W,	
SCHUSTER, ROBERT L.	Served as member of Geotechnical Advisory Board to Panama Canal Commission (slope stability)	,2,	,L,	5.0	9	,Panama Canal zone,	
SCHUSTER, ROBERT L.	Served as member of UNESCO Joint Working Party on World Landslide Inventory	,96,	,L,	2.0	6	,W,	
SCHUSTER, ROBERT L.	Served as advisor to Italian National Research Council on landslide problems in Calabria and Lombardia	,97,	,L,	5.0	6	,Italy,	

Landslide Program

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
SCHUSTER, ROBERT L	Served as advisor to Civil Defence Agency of Ecuador (landslide-dam energy)	,97,	,L,	5.0	9	,Ecuador,	
SCHUSTER, ROBERT L	Served as advisor to ICIMOD (Intnl. Center for Integrated Mt. Development) Himalayan Mtns.	,97,	,L,	4.0	7	,Himalayan Mtns.,	
SCHUSTER, ROBERT L	Served as advisor to Eng. teams (Govts. of Cameroon and Nigeria) hazards from Lake Nyas	,97,	,L,	4.0	9	,Cameroon and Nigeria,	
SCHUSTER, ROBERT L	Served as advisor/reviewer to Interagency Tech. Adv. Group on Santa Cruz Geol. Hazard (response to LPE)	,3,	,L,	6.0	9	,CA,	
SCHUSTER, ROBERT L	Served as member on Committee for Natural Disasters -NRC	,24,	,L,	3.0	8	,N,	
SCHUSTER, ROBERT L	Served as member on Task Force on Landslides -(NRC)	,24,	,L,	2.0	8	,N,	
SCHUSTER, ROBERT L	Served as member on Committee for Natural Disaster Reduction (ASCE)	,85,	,L,	2.0	8	,N,	
SCHUSTER, ROBERT L	Served as member on Committee on Landslides Intl. Soc. for soil mechanics and Found. Engineering, ISSMFE	,85,	,L,	0.5	8	,W,	
SCHUSTER, ROBERT L	Served as member of Landslide Committee, AEG	,85,	,L,	0.5	7	,N,	
SCHUSTER, ROBERT L	Provided field cooperation with geologists of Wash. Div. of Natural Res. (Eqs and Induced landslides)	,25,	,L,	7.0	9	,WA,	
SCHUSTER, ROBERT L	Served as member of USGS Review Team on safety of Vandenberg Dam, Utah (Requested by Utah Cong. Delegation)	,24,	,L,	8.0	9	,UT,	

Landslide Program

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
SCHUSTER, ROBERT L.	Served as member of Geotechnical Board, NRC	,24,	,L,	6.0	9	,N,	
SCHUSTER, ROBERT L.	Provided field cooperation with geologists on Colorado Geological Survey (study of landslides)	,25,	,L,	2.0	9	,CO,	
SCHUSTER, ROBERT L.	Provided field cooperation with geologists of Canadian Geol. Survey (study of B.C. and WA landslides)	,97,	,L,	5.0	9	,CANADA,	
SCHUSTER, ROBERT L.	Served as official member of Colorado Natural Hazards Council (Comm. on Landslides/Geol. Hazs.)	,26,	,L,	2.0	8	,CO,	
WIECZOREK, GERALD F.	Advised Philippine government RE Luzon eq. in 1990	,22,	,L,	30	8	,Luzon Philippines,	Newhall, C.; Sharpe, R.; Wennerberg, L.
WIECZOREK, GERALD F.	Provided overview of program on ground failure to U.S.-Japan scientific committee	,95,	,L,	6	5	,W,	Branch Chiefs and Newhall, C.
WIECZOREK, GERALD F.	Presented keynote address for FEMA on geologic hazards	,9,26,39,40,41,44,	,L,	1	7	,Washoe Co.,NV,	None
WIECZOREK, GERALD F.	Gave presentation on geologic hazards to teachers in Fairfax county	,59,	,L,	1	8	,Fairfax Co.,VA,	Sutton, J.
WIECZOREK, GERALD F.	Gave presentation on geologic hazards to DOI committee	,35,	,L,	3	6	,N,	WRD
WIECZOREK, GERALD F.	Assisted NPS in reconciliation of rockfall problem	,6,29,	,L,	7	9	,Lehigh, PA,	Jibson, R.
WIECZOREK, GERALD F.	Prepared radio program on landslides, VOA	,66,	,L,	1	5	,W,	None
WIECZOREK, GERALD F.	Assisted in assessment of rockfall hazards, Yosemite Nat. Park	,6,	,L,	120	8	,Yosemite, CA,	Harp, E., and Swolfs, H.
MOORE, JAMES G	Supplied info. to reporter for NY Times article	,57,64,	,L,V,E,	2.0	8	,NY,	B. Raleigh
MOORE, JAMES G	Gave talk on Hawaiian landslides, Bay Area Min. Soc.	,63,	,L,V,E,	0.5	5	,SFBA,	
TILLING, ROBERT I.	Participated in mtg. regarding MOU between USGS and UNESCO	,21,22,	,E,V,L,	3.0	3.5	,W,	many colleagues
Pearson, T (WRD-CVO)	Gave lecture on debris flows for continuing education, Univ. Wisc. at Madison	,24,25,84,85,86,	,L,	3.0	6	,CA,WUS,	

Landslide Program

NAME	Activity	Customer Groups	Programs	Time Spent	Eff.	Areas	Other Contributors
WALLACE	Member of Engineering Criteria Review Board	,38,	,E.L.,	11	18	,SFBA,	R. Brown, R. Borchardt
WALLACE	Taught docents for field trips	,63,	,E.L.,	12	10	,SFBA,	

Appendix K

Confidential OEVE Outreach Interview

1. Why didn't you respond to the outreach questionnaire? (Circle all that apply)
 - A) Out of the Office on annual leave, fieldwork, or travel
 - B) Didn't receive the questionnaire
 - C) Lost the questionnaire
 - D) Meant to respond, but was too busy
 - E) Responded, but questionnaire response apparently lost in mail
 - F) Chose not to respond- Outreach is not important
 - G) Chose not to respond-No comments or activities to report.
 - H) Chose not to respond- Outreach is important, but it is not my job.
 - I) Chose not to respond- My supervisors might be upset if they knew how much time I spend on outreach.
 - J) Other (Please specify):
2. How important is outreach to OEVE? (Circle one)
 - A) Not important
 - B) Somewhat important
 - C) Important
 - D) Very important
 - E) Critical
3. Is OEVE recognition of individual outreach efforts appropriate ? (Circle one)
 - A) Grossly inadequate recognition
 - B) Marginally adequate recognition
 - C) Recognition about right
 - D) Too much recognition
 - E) Excessive recognition.
4. When were you last asked to participate in outreach, for example, talk to a group of nonscientists about OEVE programs? (Circle one)
 - A) Within the past month
 - B) Within the past 6 months
 - C) Within the past year
 - D) Within the past 2 years
 - E) Been so long I can't remember
5. When did you last participate in outreach? (Circle one)
 - A) Within the past month
 - B) Within the past 6 months
 - C) Within the past year
 - D) Within the past 2 years
 - E) Been so long I can't remember
6. What factors caused you to perform or decline the outreach activities referred to in questions 4 and 5? Please elaborate:
7. What factors would cause you to perform more outreach? Please elaborate:

RESULTS, NONRESPONDENTS RANDOM SURVEY -- 100 SURVEYS

RESPONSES

QUESTION

	1. Why didn't you respond to the outreach questionnaire? (circle all that apply)
10	A. Out of the office on annual leave, fieldwork, or travel
16	B. Didn't receive the questionnaire
5	C. Lost the questionnaire
29	D. Meant to respond, but was too busy
5	E. Responded, but questionnaire response apparently lost in mail
0	F. Chose not to respond -- outreach is not important
21	G. Chose not to respond -- no comments or activities to report
7	H. Chose not to respond -- outreach is important, but it is not my job
1	I. Chose not to respond -- my supervisors might be upset if they knew how much time I spend on outreach
19	J. Other (please specify)
	2. How important is outreach to OEVE?
1	A. Not important
5	B. Somewhat important
27	C. Important
42	D. Very important
20	E. Critical
5	F. Other (don't know)
	3. Is OEVE recognition of individual outreach efforts appropriate?
32	A. Grossly inadequate recognition
29	B. Marginally adequate recognition
15	C. Recognition about right
1	D. Too much recognition
1	E. Excessive recognition
21	F. Other
	4. When were you last asked to participate in outreach, for example, talk to a group of nonscientists about OEVE programs?
29	A. Within the past month
16	B. Within the past 6 months
19	C. Within the past year
3	D. Within the past 2 years
15	E. Been so long I can't remember
18	F. Other
	5. When did you last participate in outreach?
26	A. Within the past month
19	B. Within the past 6 months
18	C. Within the past year
4	D. Within the past 2 years
18	E. Been so long I can't remember
15	F. Other

# RESPONSES	QUESTION
-------------	----------

	6. What factors caused you to perform or decline the outreach activities referred to in questions 4 and 5?
--	---

(most of the factors listed include the following)

PERFORM

- | | |
|----|--|
| 23 | Personal responsibility; feel it's important |
| 18 | Received a request to do outreach |
| 8 | Like to do outreach; thought it would be fun |
| 7 | Never received a request |
| 6 | Required by work plan |
| 4 | Encourage students to get interested/involved in science |
| 2 | Encouraged by supervisor |
| 1 | Perceived a need to do outreach |

DECLINE

- | | |
|---|--------------------------------|
| 5 | Interference with other duties |
| 2 | No recognition |

	7. What factors would cause you to perform more outreach?
--	--

(most of the factors listed include the following:)

- | | |
|----|---|
| 26 | Request my assistance (especially by supervisor) |
| 23 | Improved recognition for outreach activities |
| 21 | Leadership/direction from OEVE managers & coordinated program |
| 15 | Awareness of & suggestions for outreach opportunities |
| 10 | Required in work plan or changes in work-plan priorities |
| 2 | Non-interference with research or existing responsibilities |

Nothing

- | | |
|---|--|
| 4 | --already do as much outreach as I can or want to do |
| 2 | --not interested or inclined to do outreach |
| 2 | --my work not appropriate for outreach efforts |

UNITED STATES GOVERNMENT
memorandum**DATE:** 3/10/92**TO:** OEVE Colleagues**FROM:** Bill Bakun, Steve Brantley, Bill Brown, Walt Hays, Bill Kockelman, Carl Mortensen, and Waverly Person**SUBJECT:** Preliminary Report on OEVE Outreach Questionnaire

In January a questionnaire on outreach activities in OEVE was distributed. Two hundred and forty-nine of you, more than 1/3 of the office, responded. The responses contain a great deal of information we will use to identify ways the office could be more effective in its outreach efforts. It will take considerable time to consider all the implications of these data, but some preliminary conclusions can be drawn.

Questionnaire, Front Page: Questions on the front page were intended to gauge perceptions on past "outstanding" outreach, to identify opportunities, and to provide a forum for suggestions and comments.

About 39% selected the Bay Area newspaper insert "The Next Big One- Are You Prepared?" as the outstanding OEVE outreach in 1990-1991 because of its widespread distribution and presentation. The responses generally suggest we think we do well in response to crises events. We were surprised that about 20% did not identify an outstanding outreach activity, and that many were unfamiliar with outreach activity in their branches.

A wide range of opportunities were suggested:

1) Additional USGS publications (32%) such as videos (10%), various computer-based earthquake databases/displays (5%), brochures (3%), and 1-2 page project summaries intended for nonscientists.

2) A coordinated OEVE outreach program (17%) with dedicated positions (5%), developed priorities (3%), improved dissemination and marketing (3%), and additional funding (1%).

3) Increased transfer of hazard information through direct communication with agencies, officials, etc. (11%), primarily through local conferences and workshops (4%).

4) Additional public forums (10%) through slide presentations in classrooms and through a speakers bureau.

5) Increased media exposure (10%) through newspaper inserts and articles in magazines or newspapers.

6) Improved colleague recognition for outreach activities (7%).

L 2

Questionnaire, Back Page: The back page was a table providing a format for describing personal outreach activities.

The breadth and depth of the activities listed are truly remarkable. We have entered these activities into a database that can be used in a variety of ways. A listing of the activities in the database can be borrowed (and copied) from all OEVE branch and observatory secretaries. We encourage you to scan these lists to get a sense of the remarkable outreach program we now have.

Interview of Questionnaire "Nonresponders": Although 1/3 responded to the questionnaire, the 2/3 that didn't are too large a number to ignore. That is, any conclusions from the questionnaire must be conditioned by the attitudes of the majority, the nonresponders.

To characterize the nonresponders, we devised an interview designed to gauge attitudes toward outreach, its importance to OEVE, the appropriateness of OEVE recognition for outreach, etc. We selected enough names by random sample from the list of nonresponders to characterize these attitudes for each branch independently. We interviewed each of these lucky few and their anonymous answers are now being analyzed.

We can draw some preliminary conclusions:

1) Nonresponders didn't respond because they were too busy (about 30%), or chose not to respond (about 15%) because they had no comments or outreach activities to report.

2) More than 90% considered outreach to be important, very important, or critical to OEVE.

3) About 75% felt recognition given to employees who engage in outreach activities was either "marginally adequate" or "grossly inadequate."

4) More than 50% had been asked and had participated in some outreach activity in the past year.

5) Many said they would participate in future outreach if asked, and if the activity were within their ability.

6) Some clearly indicated they did not want to participate in outreach for various reasons.

Appendix M

LIST OF OUTREACH OPPORTUNITIES IDENTIFIED BY RESPONDERS TO THE QUESTIONNAIRE

-
- o Improve hazard notification system.
 - o More materials and workshops for teachers.
 - o More hazards maps; e.g., GIS seismic zonation, faults, seismicity, microzonation, other hazards, shaking probability, products like San Mateo County, real-time earthquake locations, national intensities, and strong ground shaking.
 - o More Parkfield tours.
 - o Profiles of scientists; broadcast daily earthquake bulletin; radio miniprogram on hazards; retain advertising firm; short course for media.
 - o Publish weekly column.
 - o Strong-motion data distribution.
 - o Workshop on predicting strong ground motions.
 - o Involvement with engineering community.
 - o Circuit riders.
 - o Lectures at museums.
 - o Publicity of Video Library.
 - o Develop more ties to Electric Power Research Institute.
 - o Data/plots of seismic data.
 - o Estimate strong shaking and effects and damage.
 - o Data bases on CD-ROM.
 - o One-half day field trips.
 - o Make earth sciences a required course.
 - o Establish information clearinghouses.
 - o Coverage of volcanoes in a national magazine.
 - o Develop hazard-reduction plans.
 - o Additional public contact.
 - o Emergency services hazard information for state and government agencies.
 - o More information to general public.
 - o Ensure that all hazard research is translated.
 - o Create PR office in Central Region.
 - o Advertise widely.
 - o More magazine inserts.
 - o NOVA-style documentaries.
 - o Interactive laser disks to answer public's questions.
 - o NEIC services to private citizens.
 - o Post-earthquake "rapid evaluation" teams.
 - o Portable display panels.
 - o Publication on volcanoes of Alaska.
 - o Educate airline pilots about volcanic hazards.
 - o Geographic Information Systems for Hawaii.
 - o Publish a technical newsletter for OEVE.
 - o Development of a full-blown Public Seismic Network.
 - o Release information continuously on disasters.
 - o Mechanism to publish results at different user levels.

- o Status of Mount Rainier and Mauna Loa could be highlighted.
- o Thought given to marketing our products.
- o Improved interpretation of geologic processes.
- o Federal agencies that manage public lands customers.
- o Working as advisors to other agencies; e.g., land use, building codes, FEMA.

- o For volcanoes, initiate discussion with appropriate emergency officials.
- o Implement outreach plan for Mount Rainier and Mount Hood.
- o Earthquake catalog available on 3½" diskettes.
- o Catholic TV network of 30,000 students.
- o Hazard consciousness of school children.

- o Making data available.
- o Not authorized to communicate with the public.
- o More seismic stations in the vicinity of planned geothermal power plants.
- o Turned down talks . . . easily use a full-time PIO.
- o Closing of ESIC office in LA left a gap.

- o Buffer display at San Juan Bautista.
- o Examples of local seismograms.
- o Easier access to earthquake information.
- o List of speakers and topics.
- o Integrated hazards and risk-assessment program.

- o Practical evaluation of various hazards.
- o Land stability and seismic risk that affects their property.
- o Public lectures.
- o Lead field tours.
- o Third-World countries.

- o Open-filing is important outreach.
- o Public information displays . . . volcanoes.
- o Public education in Mammoth Lakes.
- o Advertise that we would be happy to make informal presentations.
- o Booklets on Southern Calif., New Madrid, Alaska, and Pacific Northwest.

- o Community meetings.
- o Better coordination of data dissemination.
- o Promote curriculum on earthquake hazards.
- o Permanent displays at museums and/or government buildings.
- o No publications have summarized earthquake history of S.F. Bay area.

- o Response plans for Cascades volcanoes.
- o Public meetings of general information.
- o Hazards-infrastructure map.
- o Slope-stability analysis in connection with National Transportation legislation/funding.
- o States' cooperative programs.

- o Mediterranean hazards research/instruction center.
- o Assemble a team to travel throughout the regions.
- o Give talks on their professions to girls, 6th to 9th grades.
- o Provide short-term warnings.
- o Map Products according to customer specifications.

- o CD run of earthquake data base.
- o Pager notification to subscribers.
- o Permanent museum-type displays.
- o Submit article for New Earth magazine.
- o Encourage project scientists to prepare news releases about their projects.

- o Create a P.I. Scientist position for the earthquake program in Menlo Park.
- o Cooperate with state geological surveys and regional engineering councils.
- o New version of Earthquake History of U.S.
- o Mining industry regarding underground seismic hazards.
- o Build bridges to state and local government officials.

- o Better recognition.
- o More rock specimens for school tours.
- o Public forums on volcanic and seismic hazards in Hawaii.
- o Participate in meetings with emergency management agencies.
- o Regular summaries of volcanic/seismic happenings.

- o Cooperative work with FAA on eruption warning system.
- o Prototype education kiosk.
- o Ice-sculptures of an erupting volcano.
- o Land-form posters--education series.
- o Discontinue phone mail during office hours; answer the phones.
- o Brochure on "How to build a seismometer."
- o Write a "Manual on Seismogram Interpretation."

Appendix N. OEVE outreach awards for FY91 and FY92:

	BSEIS	BGSG	BGRA	BTTP	BIGP	BESG	OEVE	** Total
Activity								
* Loma Prieta - cash awd	7		1	10	2	1		23
* Loma Prieta - SSA	4			1				7
Open House				1				1
Newspaper Insert	1							1
Armenia			1					1
Pinatubo response					34			34
Redoubt response					4			4
Marianas response					2			2
Hawaii response			1		1			2
HVO display					2			2
Smithsonian display					1			1
External award								
DOI award				1		1		2
Other outreach activity			1		2			2
Outside recognition			8		1			9
TOTAL	12	0	12	13	48	1	0	91

* Loma Prieta awards only for the outreach category.

** Rows do not total because some awards were to individuals outside OEVE.

Appendix O.
Geologic Division Support for Outreach Products

Recent memos (Wendell Duffield to Distribution, 3/31/92; John Aaron to Duffield, 3/25/92; William Bakun to Ben Morgan, 4/10/92) that illustrate the organizational support problems for popular outreach products are attached.

U.S. DEPARTMENT OF THE INTERIOR
Geological Survey
Branch of Igneous & Geothermal Processes
2255 North Gemini Drive
Flagstaff, AZ 86001

March 31, 1992

MEMORANDUM

To: Distribution

From: Wendell Duffield

Duff

About: Outreach II

On March 11, 1992, I sent each of you a memo about ideas that I have for what is now popularly called "outreach" by the Geologic Division (GD). In my mail today are two items whose juxtaposition prompts me to write this followup memo.

One of these items is a memo to all employees of the GD in the Western Region. This memo summarizes a GD leadership training course recently attended by several GD employees in Menlo Park and, among other topics, describes a GD commitment to strive towards an organization wherein the flow of decision-making, goal-setting, and taking responsibility is up, down, and sideways.

The second item is a memo (copy attached) from John Aaron, Chief of the Office of Scientific Publications, responding to one of the outreach ideas in my 11 March memo. Now that a conversation is afoot, I would like to keep it open, in the spirit of the new GD leadership model. John, thanks for providing the opportunity. Please don't take any of this personally; this memo is not written in that spirit.

John's response to my suggestion of publishing geologic maps of selected areas on a raised-relief base is essentially a carbon-copy of the negative responses that I've received repeatedly since first starting to promote this idea in the late 1970's. All of the GD decision makers (in the "traditional" sense) that I have approached with this idea have said that it is too expensive to publish maps this way. No one has ever shown me a cost estimate, however. John now says that, more than ever, the GD must avoid what he judges would be an expensive product to produce, because of the present state of financial stress for the GD.

I disagree with this position. I have long been aware that the GD does not profit directly from the sale of its products. However, it DOES PROFIT INDIRECTLY from these products through increased visibility, etc. Aren't GD publications the principal product that we provide our customers, to use the currently popular

Washington lingo? It seems to me that there is a GD myopia here that needs to be changed, or at least seriously examined within a framework of possible change.

If one carries John's line of reasoning to a limiting case, the GD should publish nothing, because each publication is a drain on the budget. This is an obviously absurd extreme. Back within the realm of reality, however, a devil's advocate can cogently argue that a substantial part of the reasons the GD is in its present financial situation is a lack of enough "best seller" publications during the past decade or two. Maybe the GD hasn't convinced its customers of the organization's worth due to a paucity of "best sellers". For whatever reasons the GD has arrived at its present financial state, it may take some bold steps to reverse the situation. A revitalized look and mix of publications might help with the reversal. With the business-as-usual attitude, the GD seems to be marching down a path of incremental steps toward oblivion. Hiding behind a shroud of "too expensive" in the short term, may eventually lead to the very demise that I believe we all want to avoid.

Returning to my specific suggestion about geologic maps, I'm not sure that the idea is one that the GD should implement. But I do think it merits more than another brushing aside with the argument about cost. Does anyone out there agree with me? If there is consensus up, down, and sideways that my idea is impractical, loony, financially impossible, etc., I'll let it die. I'm already overcommitted with trying to produce quality products for my customers.

Distribution: J. Aaron
 ✓B. Bakun
 S. Brantley
 A. Coury
 J. Donnelly-Nolan
 L. Gordon
 J. Keith
 P. Lipman
 B. Morgan
 B. Normark
 J. Pinkerton
 D. Prose
 D. Swanson
 L. Wallace
 R. Wesson



United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VA. 22092

CHIEF, OFFICE OF SCIENTIFIC PUBLICATIONS (STOP 904)

Wendell:

March 25, 1992

I enjoyed your memorandum of March 11, 1992, in which you exposed some ideas for outreach products. As you certainly know, it is ground that the division never has plowed adequately. However, I doubt that is the only reason our corn doesn't grow taller. Only now are we beginning to take a serious interest in understanding our customer base and in what it takes to serve their information needs. It is a complex problem not easily defined or solved.

My real purpose in writing you is to correct a misconception expressed in your memorandum. You thought that products of the sort you suggested might become "best sellers" and that the cost issues would then become irrelevant. The reality is quite the opposite. The Geologic Division garners not a penny from product sales. Not only must we pay the full cost of developing a product, we also must pay reproduction or printing costs as many times as are necessary to keep the product available for distribution. No sales receipts come back to us. In effect, the more successful the product, the greater the drain on our funds. In our present state of financial distress, we cannot afford a best-seller.

John M. Aaron

0.

UNITED STATES GOVERNMENT
memorandum

DATE: 4/10/92

TO: Ben Morgan, Chief Geologist

FROM: Bill Bakun, Branch of Seismology, Bay Area Future Earthquakes Project

SUBJECT: Outreach

Bill Bakun

I was encouraged by the new emphasis at the Division level on serving customers at the Division level as evidenced by the workshop at the branch chief meeting. Although such support at the top will help, I am convinced that the meaningful interactions, the "moments of truth," with our customers will be at the individual scientist/project level.

I am not as encouraged that our organization will allow us to sustain a meaningful, effective "customer-driven" outreach program. Whereas successful customer-driven companies promote their success stories and capitalize on their bestsellers, the Geologic Division does not. In fact, Geologic Division practices selectively kill our most successful products.

I'm referring of course to our failure to keep available our most popular products. We heard once more at the branch chief workshop that the newspaper insert "The Next Big Earthquake- Are You Prepared" was in the hands of every congressman at our budget hearings. Our best information is that people are holding on to their copies! Despite distribution in the millions, it is still the best earthquake hazard reduction information we can provide and additional requests for copies are still received. Those requests can't be met because the newspaper insert is out of print.

Twenty-one thousand copies of the poster "San Francisco Bay Area Earthquakes" were printed in October 1990. They cost the Division less than \$1/copy to print, and they were sold at the ESICs for \$4/copy. The posters are out of print.

Twenty-one thousand postcards of the seismicity poster were printed in April 1991 and sold at the ESICs. The postcards are out of print.

Recently I received a memo from Wendell Duffield talking about ideas for innovative outreach products. Wendell felt that the products would be "bestsellers." Wendell's ideas seem in tune with the spirit of the new management ideas afloat in the Division- risktaking, empowerment! Wendell sent me a copy of a response he had received from John Aaron (attached). I don't dispute the reality of the situation that John describes. Rather, I think John puts his finger on why the Geologic Division in its current practices cannot sustain an effective "customer-driven" program. Quoting John Aaron, "In our present state of financial distress, we cannot afford a bestseller." We can't afford to keep the newspaper insert available, we can't afford to keep the seismicity posters available, and we can't afford to keep the postcards available.

Of course the situation is not completely out of our control. Individual scientists can support from project funds the reprinting of these popular products, turn them over to NMD, and let NMD set the price and keep all the proceeds. In fact I was recently asked to do just that -support extra printing of Jim Lienkaemper's Hayward fault strip map so it wouldn't be out of print immediately.

The frustrating thing is that the Geologic Division seems in no hurry to change this crazy situation. When I first heard last fall that the seismicity poster was out of print, I made some telephone calls and learned that a new agreement between GD and NMD had been under negotiation for the past year, that there didn't seem to be any recent progress, and that the powers involved couldn't be encouraged to vigorously seek a solution. **So we wait, our bestsellers are out of print, and we remain anything but customer driven.** I will be convinced that the Geologic Division is serious about its customers when it finds a way to afford its bestsellers.

cc. Wendell Duffield, John Aaron, Rob Wesson, Al Lindh

Appendix P. Public Opinion on Videos

Introduction

In 1991 Doug Prose produced a video on "Exotic Terranes" for Tracy Vallier of PMG with funding from the USGS and the US Forest Service (USFS). Vallier and a USFS colleague showed the video at public meetings in Idaho and eastern Oregon in February 1992. A questionnaire about the video was distributed at these showings and the responses were tabulated, but not summarized, by Tracy Vallier. Since the public's opinion on videos produced by federal agencies is pertinent to USGS Outreach planning, we have tabulated the responses to question 1: **The video "Exotic terranes" was funded by the US Forest Service and the US Geological Survey. Do you think Federal Agencies should fund and be involved in this type of public outreach and education? and any comments or criticisms.**

Summary

The overwhelming opinion was that federal agencies should fund and be involved in this type of public education and outreach. Answers to question 1:

	<u>YES</u>	<u>NO</u>	<u>UNSURE</u>
<u>Public Meetings</u>			
Grangeville, Idaho	11		2
McCall, Idaho	35		
Halfway, Oregon	18		
Enterprise, Oregon	26		2
<u>USFS</u>			
McCall, Idaho	7		1
Baker, Oregon	11		
Enterprise, Oregon	16		
<u>Schools</u>			
Grangeville High School	25	1	
High School teachers of Joseph, Oregon	3		
Total	152	1	5

VIDEO ON EXOTIC TERRANE QUESTIONNAIRE
PUBLIC MEETINGS

GRANGEVILLE, IDAHO

1. The video "Exotic Terrane" was funded by the US Forest Service and US Geological Survey. Do you think Federal Agencies should fund and be involved in this type of public outreach and education?

YES

NO

NOT SURE

11

2

Additional Comments to question #1:

Far too much tax dollars wasted; kids need this education; should be agencies on-going education program; if of benefit to the greatest number; depends on Federal Agency; should be public foundation equivalent to NSF to disseminate information to the public based on financial scientific research.

5. Other Comments or criticisms?

Thanks; well done; great tool for learning; provides better understanding of where we live; money spent would not be wasted; very impressive production values for budget; Have been curious about this information for a long time.

MCCALL, IDAHO

1. YES

NO

NOT SURE

35

Additional Comments to question #1:

One of the better uses of these funds; it beats a lot of other things the FS does; Should fund videos such as this; should get donations from major corps.; need this type of outreach in public schools; money taken from forest mismanagement such as logging mining, excess road building could be used to fund products; take money out of timber and road bldg. programs to fund it; encouraged by this use of funds; should be paid by Dept. of Education; probably not high priority for USFS; better investment than promoting some of their other policies; cooperation from other private funding sources needed; should be available for public to view and use not just USFS and USGS; hope many kids can enjoy this as I did; this program can only help educate everyone; excellent form of interpretation; should be more specific than just general interest; its value is unquestionable; money well spent, both videos excellent; USFS and USGS (along with taxpayers) funding and promoting increasingly controversial extractionist industries, this type of positive outreach is very important; importance will increase in the future; film serves to "advertise" Hell's Canyon,

VIDEO ON EXOTIC TERRANE QUESTIONNAIRE
US FOREST SERVICE

McCALL, IDAHO

#1.	<u>YES</u>	<u>NO</u>	<u>NOT SURE</u>
	7		1

Additional comments to question #1:

Great way to educate the public; Long, some - but universities or private parties may be better, short - yes; it would be nice if other concerns could defray cost or sponsor; if the Government did not do these videos the average person may never see; very informative about the area and the field of geology.

5. Other Comments or criticisms:

More information on Hells Canyon and Brownlee Damm; well done, the narrative never got boring, leaves you anxious to learn more.

BAKER, OREGON

#1.	<u>YES</u>	<u>NO</u>	<u>NOT SURE</u>
	11		

Additional comments to question #1:

should realize some economic benefit; if they can afford it and still meet resource impact responsibilities; it develops a connection to the earth's environment, people are becoming more concerned; within budget limitations of course.

5. Other comments or criticisms:

Film did a great job of illustrating the processes; great project; deserves a Blue Ribbon.

ENTERPRISE, OREGON

#1.	<u>YES</u>	<u>NO</u>	<u>NOT SURE</u>
	16		

Additional comments to question #1:

The FS must enter the arena of public relations, education and information sharing, this video takes the first step, FS needs to be involved in outreach programs; particularly when so many of the natural resources which could be the topic of such education are on public lands; funding is such a critical issue for the USFS, it would be ideal if they could recover their expenses from video sales, education is the best avenue for ecological/environment preservation, I'm glad the project was funded!; these should be

funding is appropriate as long as some fiscal responsibility is observed; as fascinating as the Snake River is, are they using this as propaganda to draw more interest?; educating the public is of most importance; yes, only if economically available.

5. Other comments and criticisms:

The "PBS" style was enjoyable, the "USFS" was definitely "USGS style" too fast and a bit dry; outstanding video, should be a part of every school library and shown on T.V.

made available (actually, offered as part of a training program) to FS employees.

5. Other comments or criticisms:

Why was Bruce Womack given any credit? more of these outreach programs must be set in motion, produce more videos, please; both videos are excellent for their purposes - in all respects; graphics were of very high quality worth the cost of production; really needed something of this sort for our area.

SCHOOLS

GRANGEVILLE HIGH SCHOOL

#1	<u>YES</u>	<u>NO</u>	<u>NOT SURE</u>
	25	1	

Additional comments to question #1:

It would teach students and the public about how the land is formed; it was not good enough to fund; they can inform us more than our teachers, and answer questions our teachers can't; need to be involved with education; it is good to show what our world is doing and what it has done; it improves any understanding about this country and how is was formed.

5. Other comments and criticisms:

Great country, good photography; very interesting; skipped around too much; good video; I liked the theories mentioned about the continents; very good video, taught we a lot about Idaho; would like to learn more about Hell's Canyon and Salmon River country; this video was educating and would be interesting to study more about it.

HIGH SCHOOL TEACHERS OF JOSEPH, OREGON

#1	<u>YES</u>	<u>NO</u>	<u>NOT SURE</u>
	3		

Additional comments to #1:

No one else is going to fund it, I hope the feds keep it up.

5. Other comments and criticisms:

Thanks, it is really terrific to have someone who is an expert who is willing to share info w/kids and their teachers; \$250 for the video seems high, would wonder if distribution could'nt be handled differently to reduce cost.