

REFERENCES

- Akerman, J., Johnson, F.R., and Bergman, L., 1991, Paying for Safety: Voluntary Reduction of Residential Radon Risks, *Land Economics*, Vol. 67, No. 4, pp. 435-46.
- American Lifelines Alliance (ALA), 2002, *Development of Guidelines to Define Natural Hazards Performance Objectives for Water Systems*, Natural Hazards Management Inc. for the American Lifelines Alliance supported by the Federal Emergency Management Agency, Torrance, California, www.americanlifelinesalliance.com.
- Applied Technology Council, 1985, *Earthquake Damage Evaluation Data for California*, ATC-13 Report, Applied Technology Council, Redwood City, California.
- Applied Technology Council (ATC), 2003a, *Scoping Studies: Independent Study to Assess Future Savings from Mitigation Activities Track A - Selection of Methods to Estimate Nationwide Benefits and Costs of Mitigation*, Applied Technology Council, Redwood City, California.
- Applied Technology Council (ATC), 2003b, *Track A Project Pilot Study: St Agnes Medical Center Seismic Retrofit*, Applied Technology Council, Redwood City, California.
- Association for the Advancement of Automotive Medicine (AAAM), 2001, *Abbreviated Injury Scale (AIS) 1990 - Update 98*, Barrington, Illinois, 68 pp.
- Bergstrom, J.C., and DeCivita. P., 1999, "Status of benefit transfer in the United States and Canada: a review," *Canadian Journal of Agricultural Economics*, Vol. 47, Edmonton, Alberta, Canada, pp.79-87.
- Bernknopf, R.L., Brookshire, D., McKee, M., and Soller, R., 1997, "Estimating the social value of geologic map information: a regulatory approach," *Journal of Environmental Economics and Management*, Vol. 32, pp. 204-18.
- Boardman, A., Greenberg, D., Vining, A., and Weimer, D., 1996, *Cost-Benefit Analysis: Concepts and Practice*, Prentice Hall, Upper Saddle River, New Jersey.
- Boardman, A., Greenberg, D., Vining, A., and Weimer, D., 2001, *Cost-Benefit Analysis: Concepts and Practice*, 2nd Edition, Prentice Hall, Upper Saddle River, New Jersey.
- Bostrom, A. and Löfstedt, R.E., 2003, "Communicating risk: wireless and hardwired," *Risk Analysis*, Vol. 23, No. 2, pp. 241-48.
- Bourque, L.B., and Fielder, E.P., 2003, *How to Conduct Telephone Surveys*, Sage Publications, Thousand Oaks, California.
- Brooks, H.E., 2003, *On the Relationship of Tornado Path Length and Width to Intensity*, NOAA/National Severe Storms Laboratory, Norman, Oklahoma.
- Brookshire, D., Chang, S., Cochrane, H., Olson, R., Rose, A., and Steenson, J., 1997, "Direct and indirect economic losses from earthquake damage," *Earthquake Spectra*, Vol. 13, pp. 683-701.

- Brookshire, D.S., and Neil, H., 1992, "Benefit transfers: conceptual and empirical issues," *Water Resources Research*, Vol. 28, No. 3, American Geophysical Union, Washington, D.C., pp. 651-655.
- Burby, R.J., editor, 1998, *Cooperating with Nature, Confronting Natural Hazards with Land-Use Planning for Sustainable Communities*, Joseph Henry Press, Washington, D.C.
- Burby, R.J., 2003, "Making plans that matter, citizen involvement and government action," *Journal of the American Planning Association*, Vol. 69: pp. 33-49.
- Burby, R.J., and May, P.J., 1998, "Intergovernmental environmental planning: addressing the commitment conundrum," *Journal of Environmental Planning and Management*, Vol. 41, pp. 95-110.
- Canaan, D., 2000, "Charlotte-Mecklenburg's floodplain mapping data and decisions," *Research in Support of Hazard Mitigation, Symposium Proceedings*, North Carolina Division of Emergency Management.
- Cochrane, H., 1997, "Forecasting the economic impact of a mid-west earthquake," *Economic Consequences of Earthquakes: Preparing for the Unexpected*, B. Jones (ed.), Multidisciplinary Center for Earthquake Engineering Research, Buffalo, New York.
- Congressional Budget Office, 1998, *The Economic Effects of Federal Spending on Infrastructure and Other Investments*, Congressional Budget Office, Washington, D.C.
- Dalton, L.C., and Burby, R.J., 1994, "Mandates, plans, and planners, guiding local commitment to development management," *Journal of the American Planning Association*, Vol. 60, pp. 444-461.
- Doyle, J.K., et al., 1990, *An Evaluation of Strategies for Promoting Effective Radon Mitigation*, Report to the Office of Policy, Planning and Evaluation, U.S. Environmental Protection Agency. U.S. EPA Cooperative Agreement #DR-813686.
- duVair, P., and Loomis, J., 1992, "Household's valuation of alternative levels of hazardous waste risk reductions: an application of the referendum format contingent valuation method," *Journal of Environmental Management*, Vol. 39, pp. 143-155.
- EQE International, 2000, *Determination of Impacts from Flood Study Modifications, McAlpine Creek Watershed*, Report (May) prepared for Mecklenburg County Engineering and Building Standards, Charlotte, North Carolina.
- Federal Aviation Administration (FAA), 1998, *Economic Values for Evaluation of FAA Investment and Regulatory Decisions*, Report FAA-APO-98-8.
- FEMA, 2004, *Seismic Retrofitting of Non-Structural Elements: Lighting in the Los Angeles Unified School District*, Federal Emergency Management Agency, Washington, D.C.
- FEMA, 2005, "Detailed Expenditure Data, 1993-2002," computer file, Federal Emergency Management Agency, Washington, D.C.
- FHWA, 1994, *Technical Advisory: Motor Vehicle Accident Costs*, Technical Advisory No. 7570.2, Federal Highway Administration, U.S. Department of Transportation, Washington, D.C.

- Frankel, A., Mueller, C., Barnhard, T., Perkins, D. Leyendecker, E.V., Dickman, N., Hanson, S., and Hopper, M., 1996, *National Seismic Hazard Maps, June 1996 Documentation*, Open-File Report 96-532, US Geological Survey, Denver, Colorado, <http://geohazards.cr.usgs.gov/eq/hazmapsdoc/Junedoc.pdf>, 110 pp.
- Ganderton, P., 2004, "Benefit-cost analysis of hazard mitigation: the current state of what counts and how to count it," *Mitigation and Adaptation Strategies for Global Change*, forthcoming.
- Golan, E. et al., 2000, *Economics of Food Labeling*, Report No. 793, U.S. Department of Agriculture, Economic Research Service.
- Grazulis, T.P., 1993, *Significant Tornadoes, 1680-1991*, Environmental Films, St. Johnsbury, Vermont.
- Handmer, J., and Thompson, P., 1996, *Economic Assessment of Disaster Mitigation, A Summary Guide*, Australian ISNDR Coordination Committee, Centre for Resource and Environmental Studies, Australian National University, Canberra, Australia.
- Hart, G.C., 1976, *Natural Hazards: Tornado, Hurricane, Severe Wind Loss Models*, J.H. Wiggins Company, Redondo Beach, California.
- Harmsen, S., 2005, "PHSA Uncertainty Analysis: Applications to the CEUS and the Pacific NW," *Infrastructure Risk Management Processes: Natural, Accidental, and Deliberate Hazards* (forthcoming), American Society of Civil Engineers, Reston, Virginia, pp. 14-61.
- The H. John Heinz III Center for Science, Economics and the Environment, 1999, *The Hidden Costs of Coastal Hazards*, Island Press, Washington, D.C.
- Hoffer, S., Berardino, F., Smith J., and Rubin, S., 1998, *Economic Values for Evaluation of Federal Aviation Administration Investment and Regulatory Decisions*, Report FAA-APO-98-8, Federal Aviation Administration, U.S. Department of Transportation, Washington, D.C.
- Hoyle, R.H., Harris, M.J., Judd, C.M., 2002, *Research Methods in Social Relations*, 7th Edition. Wadsworth.
- Internal Revenue Service (IRS), *Data Book, FY 2003*, Publication 55b. Table 7 – Internal Revenue Gross Collections, by Type of Tax, Fiscal Years 1973-2003.
- Internal Revenue Service (IRS), 2004a, *Statistics of Income Bulletin*, Publication 1136 (Rev. 09-2004), Table 6 – Total Adjusted Gross Income Estimated from National Income and Product Accounts (NIPA) and as Reported on Individual Income Tax Returns per Statistics of Income (SOI), Tax Years 1950-2002.
- Internal Revenue Service (IRS), 2004b, *Statistics of Income Bulletin*, Publication 1136 (Rev. 90-2004), *Statistics of Income—Individual Income*, Table 9—Number of Individual Income Tax Returns, by Type of Tax Settlement, Tax Years 1950-2002.
- Julier, S.J., 2002, "The scaled unscented transformation," *Proceedings of the American Control Conference*, May 8-10, Anchorage Alaska.
- Julier, S., Uhlmann, J., and Durrant-Whyte. H.F., 2000, "A new method for the nonlinear transformation of means and covariances in filters and estimators," *IEEE Transactions on Automatic Control*, Vol. 45, No. 3.

- Julier, S.J., and Uhlmann, J.K., 2002, "Reduced sigma point filters for the propagation of means and covariances through nonlinear transformations," *Proceedings of the American Control Conference*, May 8-10, Anchorage, Alaska.
- Litan, R.E., Chair, Committee on Assessing the Costs of Natural Disasters, 1999, *The Impacts of Natural Disasters: A Framework for Loss Estimation*, Board on Natural Disasters, Commission on Geosciences, Environmental, and Resources, National Research Council, National Academy Press, Washington, D.C.
- Litan, R., Kringold, F., Clark, K., and Khadilkar, J., 1992, *Physical Damage and Human Loss: The Economic Impact of Earthquake Mitigation Measures*, Insurance Information Institute Press, New York, New York.
- Lombard, P., 1995, Ph.D. dissertation on the economics of building code benefits pertaining to specific structural and property changes or impacts from hurricane-forced winds, Texas A&M University.
- Loomis, J.B., 1992, "The evolution of a more rigorous approach to benefit transfer: benefit function transfer," *Water Resources Research*, Vol. 28, American Geophysical Union, Washington, D.C., pp. 701-705.
- Luken, R.A., Johnson, F.R., and Kibler, V., 1992, "Benefits and cost of pulp and paper effluent controls under the clean water act," *Water Resources Research*, Vol. 28, American Geophysical Union, Washington, D.C., pp. 665-674.
- Mahue-Giangreco, M., Mack, W., Seligson, H.A., and Bourque, L.B., 2001, "Risk factors associated with moderate and serious injuries attributable to the 1994 Northridge Earthquake, Los Angeles, California," *Annals of Epidemiology*, Vol. 11, No. 5, pp. 347-357.
- Marcinowski, F. and Napolitano, S., 1993, "Reducing the risks of radon," *Air & Waste*, 43 (July): 955-962.
- Markowitz, H.H., 1959, *Portfolio Selection: Efficient Diversification of Investments*, John Wiley & Sons, New York.
- McLane, T., 2004, "Pre-1993 projects to be excluded from sampling and CBA by Track A," email to Tom Tobin and Maria Vorel, 5 Feb 2004.
- Microsoft Corporation, 2004, *Microsoft Streets and Trips 2005*, Redmond Washington.
- Mileti, D., 1999, *Disasters by Design: A Reassessment of Natural Hazards in the United States*, Joseph Henry Press, Washington, D.C.
- Mileti, D.S., 2004, "Public Hazards Communication and Education: The State of the Art," Discussion paper, Natural Hazards Research and Applications Information Center, University of Colorado, Boulder.
- Mittler, E., 1997, *An Assessment of Floodplain Management in Georgia's Flint River Basin*, Institute of Behavioral Science, University of Colorado, Boulder, Colorado.
- Multihazard Mitigation Council (MMC), 2002, *Parameters for an Independent Study to Assess the Future Benefits of Hazard Mitigation Activities*, prepared by the Panel on Assessment of Savings from Mitigation Activities (MMC/National Institute of Building Sciences), Multihazard Mitigation Council, Washington, D.C.

-
- National Research Council (NRC), 1999, *The Impacts of Natural Disasters, A Framework for Loss Estimation*, Committee on Assessing the Costs of Natural Disasters, National Academy Press, Washington, D.C.
- NIBS and FEMA, 2003a, *Multi-hazard Loss Estimation Methodology, Earthquake Model, HAZUS@MH Technical Manual*, National Institute of Building Sciences and Federal Emergency Management Agency, Washington, D.C., 690 pp.
- NIBS and FEMA, 2003b, *Multi-hazard Loss Estimation Methodology, Hurricane Model, HAZUS@MH Technical Manual*, National Institute of Building Sciences and Federal Emergency Management Agency, Washington, D.C., 557 pp.
- NIBS and FEMA, 2003c, *Multi-hazard Loss Estimation Methodology, Flood Model, HAZUS@MH Technical Manual*, National Institute of Building Sciences and Federal Emergency Management Agency, Washington, D.C.
- National Oceanic and Atmospheric Administration (NOAA). 2003. *Hurricane Isabel*. Newport/Morehead City, North Carolina, <http://www.erh.noaa.gov/mhx/HurricaneIsabel.html>.
- Noonan, D.S., 2003, "Contingent valuation and cultural resources: a meta-analytic review of the literature," *Journal of Cultural Economics*, Vol. 27, No. 3-4, Kluwer Academic Publishers.
- North Carolina Division of Emergency Management (NCDEM in conjunction with FEMA), 2004, MITIGATION PRELIMINARY PERFORMANCE ASSESSMENT: *Losses Avoided During Hurricane Isabel in North Carolina. (Draft Report)*
- Office of Management and Budget, 1992, *Circular No. A-94, Revised, (Transmittal Memo No. 64), October 29, 1992, Memorandum for Heads of Executive Departments and Establishments, Subject: Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*, Washington, D.C.
- Palm Beach County, 2002, "Final report - Palm Beach County survey of residents," http://www.co.palm-beach.fl.us/PubInf/News_Room/03-03/03-18-03_Survey.html.
- Patton, M., 2002, *Qualitative Research and Evaluation Methods*, 3rd Edition, Sage Publications, Thousand Oaks, California.
- Peek-Asa, C., Kraus, J.F., Bourque, L.B., Vimalachandra, D., Yu, J., and Abrams, J., 1998, "Fatal and hospitalized injuries resulting from the 1994 Northridge Earthquake," *International Journal of Epidemiology*, Vol. 27, No. 3, pp. 459-65.
- Perkins, D., 2002, "Uncertainty in probabilistic seismic hazard analysis," *Acceptable Risk Processes: Lifelines and Natural Hazards*, edited by C. Taylor and E. VanMarcke, American Society of Civil Engineers, Reston, Virginia, pp. 19-60.
- Peterka, J.A., and Shahid, S., 1998, "Design gust wind speeds in the United States," *Journal of Structural Engineering*, American Society of Civil Engineering, Reston, Virginia, pp. 207-214.
- Phillips, B., 2002, Qualitative methods and disaster research, edited by Robert Stallings, *Methods of Disaster Research*, Xlibris, pp. 194-211.

- Porter, K.A. 2002, "Life-safety risk criteria in seismic decisions," *Acceptable Risk Processes: Lifelines and Natural Hazards, Monograph No. 21*, C. Taylor and E. VanMarcke (ed.), American Society of Civil Engineers, Technical Council for Lifeline Earthquake Engineering, Reston, Virginia, <http://keithp.caltech.edu/publications.html>.
- Porter, K.A., 2004, "ATC-61 quality control plan," Applied Technology Council, Redwood City, California.
- Porter, K.A., 2004, "Flood hazard stratification," email to Adam Rose, Charles Huyck, Ron Eguchi, and Tom McLane, 10 Feb 2004
- Porter, K.A., Beck, J.L., and Shaikhutdinov, R.V., 2002, "Sensitivity of building loss estimates to major uncertain variables," *Earthquake Spectra*, Vol. 18, No. 4, Earthquake Engineering Research Institute, Oakland, California, pp. 719-743.
- Porter, K.A. et al., 2004, *Cost-Effectiveness of Retrofit, Above-Code Design, and Construction Quality for Woodframe Buildings*, draft manuscript, California Institute of Technology.
- Reinhold, T. A., 2002, "13 Homes Destroyed! [on purpose to test the practicality and effectiveness of wind resistant retrofit measures]," *Disaster Safety Review*, Volume 1, Number 1, pages 9-14.
- Rose, A., 2004a, "Economic principles, issues, and research priorities in natural hazard loss estimation," *Modeling the Spatial Economic Impacts of Natural Hazards*, Y. Okuyama and S. Chang (eds.), Springer, Heidelberg, pp.13-36.
- Rose, A., 2004b, "Defining and measuring economic resilience to disasters," *Disaster Prevention and Management*, Vol. 13, No. 4, pp. 307-14.
- Rose, A., Benavides, J., Chang, S., Szczesniak, P., and Lim, D., 1997, "The regional economic impact of an earthquake: direct and indirect effects of electricity lifeline disruptions," *Journal of Regional Science*, Vol. 37, pp. 437-58.
- Rose, A., and Liao, S., 2005, "Modeling regional economic resilience to disasters: a computable general equilibrium analysis of water service disruptions," *Journal of Regional Science*, Vol. 45, No. 1, pp. 75-112.
- Rose, A., and Lim, D., 2002, "Business interruption losses from natural hazards: conceptual and methodological issues in the case of the Northridge earthquake," *Environmental Hazards: Human and Policy Dimensions*, Vol. 4, No. 2, pp.1-14.
- Rosenberger, R.S., and Loomis, J.B., 2000, "Using meta-analysis for benefit transfer: in-sample convergent validity tests of an outdoor recreation database," *Water Resources Research*, Vol. 36, American Geophysical Union, Washington, D.C., pp.1097-1107.
- Rosenblueth, E., 1975, "Point estimates for probability moments," *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 72, No. 10, pp. 3812-3814.
- Schulze, W.D. et al, 1987, "Benefits and costs of earthquake resistant buildings," *Southern Economic Journal*, Vol. 53, No. 4, pp. 934-51.
- Seligson, H.A., Blais, N.C., Eguchi, R.T., Flores P.J., and Bortugno, E., 1998, "Regional benefit-cost analysis for earthquake hazard mitigation: application to the Northridge Earthquake," *Proceedings of the Sixth U.S. National Conference on Earthquake Engineering, May 31 -*

- June 4, 1998, Seattle, Washington, Earthquake Engineering Research Institute, Oakland, California.
- Shannon, C.E. and Weaver, W., 1963, *The Mathematical Theory of Communication*, University of Illinois Press, Chicago, 125 pp.
- Sigal, B.M., Singhal, A., Pan, K., Seneviratna, P. and Zadeh, M.M., 2000, "Simulation of the tornado hazard in the U.S.," *Proceedings of the 2000 Winter Simulation Conference*, J. A. Joines, R. R. Barton, K. Kang, and P. A. Fishwick (eds.).
- Small Business Administration (SBA), 2005, personal communication (January).
- Smith, V., Kerry, W., Desvougues, H., and Payne, J.W., 1995, "Do risk information programs promote mitigating behavior," *Journal of Risk and Uncertainty*, Vol. 10, No. 3, pp. 203-21.
- Taylor, C., Porush, A., Tillman, C., and Reaveley, L., 1991, *Seismic Code Decisions Under Risk*, (with A. Porush, C. Tillman, L. Reaveley, and G. Blackham), Dames & Moore for the National Science Foundation, Los Angeles, California.
- Taylor, C., Werner, S., Silva, W., Aschheim, M., and Scheibel, L., 2004, *Exogenous Uncertainties in Earthquake Risk Modeling for Infrastructure Systems: A Demonstration Evaluation in Northern California*, Natural Hazards Management Inc. for the U.S. Geological Survey, Award No. 03HQ6R0022.
- Tierney, K. and Dahlhamer, J., 1998, "Earthquake vulnerability and emergency preparedness among businesses," *Engineering and Socioeconomic Impacts of Earthquakes*, M. Shinozuka et al. (eds.).
- University of South Carolina: Hazard Research Lab, 2005, *Spatial Hazard Events and Losses Database for the United States*.
- The Urban Institute, 1991, *The Costs of Highway Crashes*, Federal Highway Administration Research Report Number FHWA-RD-91-055, Washington, D.C.
- URS Group, Inc., 2001, *A Report on the Cost-Effectiveness of the Trinet Project*, final report to the Federal Emergency Management Agency, Washington, D.C.
- U.S. Army Corps of Engineers (USACE), 2005, personal communication, January, 2005.
- U. S. Bureau of Labor Statistics, 2005, U.S. Department of Labor, CPI Data Extraction Website, Series ID: CUUR0000SAD.
- U.S. Department of Commerce, 2003, NIPA Data Extraction Website, Table 1-12. National Income by Type of Income.
- U.S. Department of Labor, Bureau of Labor Statistics, 2004, *Consumer Price Index, All Urban Consumers, U.S. City Average, All Items*, Washington, D.C., <ftp://ftp.bls.gov/pub/special.requests/cpi/cpiiai.txt>
- U.S. Government Accountability Office (GAO), 1990, *Case Study Evaluations*, PEMD 91-10.1.9, Program Evaluation and Methodology Division, Washington, D.C.
- U.S. Government Accountability Office (GAO), 2002, *Program Evaluation: Strategies for Assessing How Information Assimilation Contributes to Agency Goals*, Report to Congressional Committees, Report No. GAO-02-923, Washington, D.C.

- U.S. House of Representatives, 1999, *Trade Agency Authorizations, Drug Free Borders, and Prevention of On-Line Child Pornography Act of 1999*, House Report 106-161, Washington, D.C.
- Waddington, D.G., Boyle, K., and Cooper, J., 1994, *1991 Net Economic Values for Bass and Trout Fishing, Deer Hunting and Wildlife Watching*, US Fish and Wildlife Service, Washington D.C.
- Wall Street Journal, 2003, "Treasury Quotes," *Wall Street Journal Online*, <http://online.wsj.com/documents/mktindex.htm?tsyquote.htm>, accessed: September 12, 2003.
- West, C.T., 2004, email of 7/30.
- West, C. and Lenze, D., 1994, "Modeling the regional impact of natural disaster and recovery," *International Regional Science Review*, Vol. 17, pp. 121-50.
- Whitehead, J.C., and Van Houtven, G., 1997, "Methods for valuing the benefits of the safe water drinking act: review and assessment," East Carolina University Department of Economics Working Paper 9705.
- Wills, C.J., Petersen, M., Bryant, W.A., Reichle, M., Saucedo, G.J., Tan, S., Taylor, G., and Treiman, J., 2000, *A Site Conditions Map for California Based on Geology and Shear Wave Velocity*, California Geological Survey, Sacramento, California, 41 pp.
- Woodward, R.T., and Wui., Y.-S., 2001, "The economic value of wetland services: a meta-analysis." *Ecological Economics*, Vol. 37, pp. 257-270.
- Yin, R.K., 2003, *Case Study Research: Design and Methods*, Third Edition, Sage Publications, Thousand Oaks, California.
- Wills, C.J., Petersen, M., Bryant, W.A., Reichle, M., Saucedo, G.J., Tan, S., Taylor, G., and Treiman, J., 2000, *A Site Conditions Map for California Based on Geology and Shear Wave Velocity*, California Geological Survey, Sacramento, California, 41 pp.