

Session No. 36

Course Title: Social Dimensions of Disaster, 2nd edition

Session 36: Disaster Denial and Disaster Preparedness Behavior

1 hr.

Objectives:

- 36.1 Explain why emergency managers need to understand public apathy toward disaster preparedness
- 36.2 Discuss at least three reasons for public apathy regarding disaster preparedness
- 36.3 Identify four social factors that constrain hazard perceptions
- 36.4 Describe and illustrate four social factors that constrain the effectiveness of hazard awareness programs
- 36.5 Describe three implications for disaster planning that are reflected in scientific knowledge on hazard perceptions
- 36.6 Identify three general strategies for reducing public apathy toward disaster preparedness.

Scope:

This session introduces students to scientific research on public apathy towards disaster preparedness. Included are social factors that constrain hazard perception and the effectiveness of hazard awareness programs; disaster planning implications; and general strategies for reducing public apathy toward disaster preparedness.

Readings:

Student Reading:

Lindell, Michael K. (ed.). 1997. "Adoption and Implementation of Hazard Adjustments." (Part Two only; "An Assessment of Strategies."). *International Journal of Mass Emergencies and Disasters* 15:389-414.

Professor Readings:

Rottman, Steven J. 2000. *Individual and Community Disaster Education Course*. Emmitsburg, Maryland: Emergency Management Institute, Federal Emergency Management Agency (See Chapters 6, 9, and 10 entitled “Organizational Inertia,” “Citizen Perception of Risk,” and “Citizen Disaster Denial”).

Farley, John E. 1998. “Down But Not Out: Earthquake Awareness and Preparedness Trends in the St. Louis Metropolitan Area, 1990-1997.” *International Journal of Mass Emergencies and Disasters* 16:303-319.

Kirschenbaum, Alan. 2001. “Mass Terrorism and the Distribution of Gas Masks in Israel: A Longitudinal Cohort Analysis.” *International Journal of Mass Emergencies and Disasters* 19:245-267.

Lindell, Michael K. and Carla S. Prater. 2000. “Household Adoption of Seismic Hazard Adjustments: A Comparison of Residents in Two States.” *International Journal of Mass Emergencies and Disasters* 18:317-338.

Background References:

Lindell, Michael K. (ed.). 1997. “Adoption and Implementation of Hazard Adjustments.” (Parts One and Three; “An Assessment of Existing Research” and “Findings and Recommendations”; pp. 327-388 and 415-435.

Lindell, Michael K. and Ronald W. Perry. 2000. “Household Adjustment to Earthquake Hazard: A Review of Research.” *Environment and Behavior* 32:590-630.

Sattler, David N., Charles F. Kaiser and James B. Hittner. 2000. “Disaster Preparedness: Relationships Among Prior Experience, Personal Characteristics, and Distress.” *Journal of Applied Social Psychology* 30:1396-1420.

Dahlhamer, James M. and Melvin J. D’Souza. 1997. “Determinants of Business Disaster Preparedness in Two U.S. Metropolitan Areas.” *International Journal of Mass Emergencies and Disasters* 15:265-281.

Auf der Heide, Erik. 1989. *Disaster Response: Principles of Preparation and Coordination*. St. Louis, Missouri: C.V. Mosby Company (Chapter 2 entitled: “The Apathy Factor,” pp. 13-32).

Faupel, Charles E., Susan P. Kelley, and Thomas Petee. 1992. “The Impact of Disaster Education on Household Preparedness for Hurricane Hugo.” *International Journal of Mass Emergencies and Disasters* 10:5-24.

General Requirements:

Use Overheads (36-1 through 36-7 appended).

See individual requirements for each objective.

Objective 36.1 Explain why emergency managers need to understand public apathy toward disaster preparedness.

Requirements:

Use Overheads 36-1 and 36-2.

Remarks:

- I. Introduction.
 - A. **Explain:** session will address six topics.
 - B. **Display** Overhead 36-1; “Session Overview.”
 - C. **Review** topics listed on Overhead 36-1; “Session Overview.”
 1. Public apathy: why must emergency managers understand it?
 2. Key reasons for public apathy.
 3. Social factors that constrain hazard perceptions.
 4. Social factors that constrain effectiveness of hazard awareness programs.
 5. Implications for disaster planning.
 6. Strategies for reducing public apathy.
 - D. **Explain:** workshop exercise based on assigned student reading (Lindell 1997) will address topic number 4 later in this session.
- II. Public apathy and emergency managers.
 - A. **Ask students:** “Why do emergency managers need to understand public apathy toward disaster preparedness?”
 - B. **Record** student responses on chalkboard.
 - C. **Display** Overhead 36-2; “Public Apathy and Emergency Managers.”

D. **Review** and supplement as necessary (adapted from Auf der Heide 1989, p. 14).

1. **Influence:** emergency managers must understand how public apathy might be influenced.
2. **Circumvention:** emergency managers must understand how public apathy might be circumvented.
3. **Limitations:** emergency managers must understand realistic limitations imposed by public apathy.

Supplemental Considerations:

The **key message** of this “warm up” section of the session is that there are many **reasons** why emergency managers must **understand** the dynamics of public apathy. Students will be able to **integrate** the mix of topics better if the professor provides an **overview**. It is recommended that **frequent references** be made to the **simulated** mitigation exercise so that students may relate the **theoretical frameworks** regarding **disaster denial** and **hazard perceptions** to the examples reflected in the speeches given. Finally, they should be made aware that an **exercise** will focus on the **assigned reading** at a **later** point in the session.

Objective 36.2 Discuss at least three reasons for public apathy regarding disaster preparedness.

Requirements:

Overhead 36-3.

Remarks:

- I. Reasons for public apathy toward disaster preparedness.
 - A. **Ask students:** “Ok. Now that we have considered why this topic of public apathy is important to emergency managers, what are the reasons for it? Why does public apathy continue regarding disaster preparedness?”
 - B. **Record** student responses on the chalkboard.
 - C. **Explain:** Dr. Erik Auf der Heide.
 1. Served as an emergency room physician for many years in California.

2. Currently on staff of the Center for Disease Control (CDC) in Atlanta, Georgia.
3. Reviewed the social science research literature pertaining to public apathy.
4. Identified reasons that both public and government apathy persists.

D. **Display** Overhead 36-4; “Reasons for Public Apathy.”

E. **Review** reasons listed; **illustrate** as required; **integrate** with student responses listed on chalkboard (portions adapted from Auf der Heide 1989, pp. 14-17).

1. **Lack of awareness.**

- a. “Tornado, Grand Island, Nebraska, June 3, 1980. No trailer parks had group storm cellars, and the residents had to seek shelter elsewhere (Quarantelli 1982:65).” (Auf der Heide 1989, p. 15).
- b. Earthquake risk, St. Louis, Missouri, metropolitan area. Surveys in 1990, 1991, 1992 and 1993. “. . . the new survey shows that both the perceived risk of a damaging earthquake and levels of household preparedness in the region have undergone steady, long-term declines since 1991.” (Farley 1998, p. 303).

2. **Underestimation of risk.**

- a. “Residents of San Francisco, who are very attached to their city, downplay the risk of earthquake damage. The longer they live there, the less seriously they take the seismic threat.” (Auf der Heide 1989, p. 16).
- b. Tornado risk, Topeka, Kansas. Legend of Burnett’s mound, i.e., burial site of Abram Burnett, colorful Indian chieftain, was believed by some to act as a buffer. “That is, tornadoes approaching the city from the Southwest, the typical direction, would bounce over the hill and pass beyond the city before touching down again.” (Drabek and Key 1984, p. 2).

3. **Reliance on technology.**

- a. “A false sense of security provided by man made protective devices contributes to the underestimation of risk.” (Auf der Heide 1989, p. 16).

- b. Drabek interviewed several employees in Galveston, Texas who stated that the massive sea wall protected the city from tornadoes during hurricanes.” (Drabek 1994, unpublished data).

4. Fatalism/denial.

- a. “People living in high-risk areas accept the threat philosophically (“earthquakes come with the territory”) (Drabek, 1986, p. 340).” (Auf der Heide 1989, p. 17).
- b. “Most people need time to absorb information that disrupts their daily routines and priorities. It is easier just not to think about unpleasant possibilities. ‘It probably will not hit us anyway.’” (Drabek 1994, p. 244).

5. Social pressures.

- a. “In some high-risk areas, flouting disaster threats is considered a sign of bravery and strong character.” (Auf der Heide 1989, p. 17).
- b. “I simply told them that I’m staying here until the police come. I talked to my sister who said that they had to leave but I told them that no one had officially told us that we had to close. We had our bar open and were really quite comfortable in terms of staying here.” (Drabek 1994, p. 153).

Supplemental Considerations:

The **key message** of this section is the various **reasons** for public **apathy**. Some professors may wish to **expand** this section by reviewing the discussion in Auf der Heide (1989, pp. 17-23) wherein he illustrates a series of reasons for government apathy, e.g., opposing interest groups, overestimation of capability, etc. Difficulty in substantiating benefits of preparedness was documented by Drabek’s interviews with tourism business executives (1994). “. . . specific costs for disaster evacuation planning, or even disaster planning, generally, had not been separated out in either thinking or budgeting” (p. 17). Other professors may integrate Lindell’s (1997) assessment with examples like this. “In some instances, failure to take action in the face of natural hazards may be entirely rational. Poorer households and marginally profitable businesses are faced with the unpleasant choice between *either* meeting needs of daily living *or* protecting themselves against a hazardous event that may or may not occur in their lifetimes.” (p. 332).

Objective 36.3 Identify four social factors that constrain hazard perceptions.

Requirements:

Use Overhead 36-4.

Remarks:

- I. Introduction.
 - A. **Explain:** “As part of our exploration of disaster denial processes, we want to become more aware of the large body of literature that has documented significant variations in how hazards are perceived. We discussed this topic briefly in prior sessions on warning responses and evacuation behavior, i.e., Sessions 9, 10, and 11; “Understanding Disaster Warnings, “Public Warning Responses,” and “Community Evacuation Behavior.”
 - B. **Ask students:** “Based on your reading in this course, what types of social factors constrain hazard perceptions?”
 - C. **Record** student responses on the chalkboard.
- II. Social factors that constrain hazard perceptions.
 - A. **Display** Overhead 36-4; “Social Factors That Constrain Hazard Perceptions.”
 - B. **Review** factors listed on Overhead 35-4 and **integrate** with the student responses.
 1. **Experience.**
 - a. Belief in myths, e.g., “Lightning never strikes the same place twice.”
 - b. Ignorance of probability estimates, e.g., “We had our 100-year flood two years ago, so I knew we were safe.”
 - c. “. . . while the nature of past experience may be an important factor in forming people’s perceptions of earthquake hazard, such experience is subject to a range of interpretation. Some respondents concluded that past damages provided evidence of likely future occurrence, while for others, simple awareness of local seismic risk was sufficient, still another group strongly believe that, having sustained damages in the past, they were unlikely to do so again in the future.” (Jackson 1981, pp. 400-401).

- d. “Contrasting pre-post Gulf War mask recipients revealed those who experienced the war had significantly higher mask-use skill levels.” (Kirchenbaum 2001, p. 245; 1990 sample of Israel population compared to a matched cohort sample in 2000, i.e., pre and post Gulf War; questionnaires; time 1 n = 132, time 2 n = 111).

2. Age.

- a. “The older one is, the greater the level of hazard awareness. But, so too the level of skepticism.” (Drabek 1985, p. 6).
- b. “People over 50 years of age, people with especially strong attachment to their local communities, and those who live in especially vulnerable circumstances are most likely [aware of the Uplift]” (Turner et al., 1979:23).

3. Gender.

- a. “Throughout the analysis of risk, wives have been more bothered by the mountain than have their husbands.” (Leik et al. 1982, p. 76) (Study of risk perceptions of Mount St. Helens, Washington).
- b. “. . . women are more likely to plan actively for evacuation while men are more likely to wait passively until ordered to do so.” (Gladwin and Peacock 1997, p. 66; Hurricane Andrew risk).

4. Location.

- a. Distance from any threat, be it a river, nuclear power plant, volcano, or what have you impacts hazard perceptions. (based on Drabek 1986, p. 329).
- b. “. . . the two closer sites showed higher proportions of people who claimed prior knowledge of potential volcanic danger. (Greene, et al. 1981, p. 52 regarding the Mount St. Helens, Washington threat).

5. Job dependence.

- a. “. . . loggers and their families tended to deny the risk represented by volcano more than others.” (Drabek 1986, p. 329).

- b. “Miners reveal higher tolerance levels of the risks they confront underground” (Drabek 1985, p. 6).

6. Personality.

- a. “. . . some evidence—albeit limited and not totally consistent—indicates that persons with ‘internally oriented’ personalities and holding less fatalist world views have higher levels of hazard awareness and more accurate hazard perceptions (see Simpson-Housley and Bradshaw, 1978:70-71).” (Drabek 1985, p. 7).
- b. “While people understand earthquakes overwhelmingly in physical terms, the physical frameworks they use are sometimes contaminated by other frameworks that are less compatible with science.” (Turner et al. 1979, p. 142). Example: 21% indicated that psychics or mystics could predict earthquakes; 3% indicated that religious leaders could (see p. 144).

Supplemental Considerations:

The **key messages** of this section are: 1) selected social factors have been **documented** that **constrain** hazard perceptions, and 2) these **same** social factors also serve as powerful **constraints** on evacuation and other **disaster response behaviors**. While most professors will keep this section **brief** and move quickly into the student workshop exercise, some will desire **expansion** of this section. This could occur in several ways. For example, recent events could be introduced into the analysis. While discussing their **experiences** with the warning alerts issued prior to **Hurricane Henri** during early September 2003, Drabek discovered that the **changing strength** of the storm, e.g., tropical depression to tropical storm to tropical depression, impacted risk perceptions (see National Weather Service Advisory Archive, 2003

@<http://www.nhc.noaa.gov/archive/2003/HENRI.shtml> [accessed 11/07/03].

Consequently, tourist business managers and employees in coastal areas of Pinellas County, Florida, indicated that this storm **reinforced** their **belief** that this area is less likely to be impacted in the future. Reference was made to **Hurricane Isabel** that struck about ten days later with **severe impacts** in the Outer Banks of North Carolina, Virginia, and Maryland (See *The Capital*, September 19, 2003, pp. A1,A5-7,A9, A12, and September 20, 2003, pp. B1, for photos of damage and damage reports).

Other professors will integrate research that has incorporated multivariate analyses to illustrate how **linkages** among social factors document casual chains. **Example**. “Multiple regression analyses supported a causal chain in which location and demographic characteristics cause hazard experience, hazard experience causes hazard intrusiveness, perceived risk causes hazard intrusiveness, and hazard intrusiveness causes the adoption of hazard adjustments.” (Lindell and Prater 2000, p. 317). Such

elaborations, focused on **multivariate** analyses could serve as a **bridge** into the next section, i.e., hazard awareness programs.

Other professors will introduce the concept of **cognitive dissonance** and explain its relevance to risk perception and action. Rottman's (2000) summary is helpful (see pp. 9-6 through 9-10). For example, he notes that people prefer their **beliefs** and **actions** be **consistent**. When they are not, people may **filter out** information by ignoring the **validity** of a threat. Conversely, some may reduce **dissonance** by taking mitigative actions. Such actions, however, are **constrained** by economic resources and the other **social factors** summarized in this section.

Objective 36.4 Describe and illustrate four social factors that constrain the effectiveness of hazard awareness programs.

Requirements:

Use Overhead 36-5.

Remarks:

I. Introduction.

A. **Exercise.**

1. **Remind** students of exercise procedures.
2. **Divide** class into four groups and assign roles.
 - a. Chair.
 - b. Reporter.
 - c. Timer.
3. **Announce** time limit: 5 minutes.

B. **Display** Overhead 36-5; "Workshop Tasks."

1. Group 1 – According to Lindell (1997), what are six informational qualities, i.e., sources and channels, that constrain the effectiveness of hazard awareness programs?
2. Group 2 – According to Lindell (1997), what are six message characteristics that constrain the effectiveness of hazard awareness programs?

3. Group 3 – According to Lindell (1997), what are six receiver characteristics that constrain the effectiveness of hazard awareness programs?
4. Group 4 – According to Lindell (1997), how is the effectiveness of hazard programs constrained by use of sanctions?

C. **Start** discussion.

D. **Stop** discussion.

II. Social factors that constrain program effectiveness.

A. Group 1 report: 2 minutes.

B. **Supplement** Group 1 report, as required (adapted from Lindell 1997, pp. 392-394).

1. **Information sources.**

- a. Official are most credible.
- b. Bases of credibility vary.
- c. Multiple sources.

2. **Information channels.**

- a. Channels vary, e.g., mass media vs. print media vs. formal meetings vs. informal.
- b. “. . . messages tend to be ‘channel-bound’” (p. 394).
- c. Printed materials vs. meetings that afford face-to-face interaction.

C. Group 2 report: 2 minutes.

D. **Supplement** Group 2 report, as required (adapted from Lindell 1997, pp. 395-399).

1. **Individual message characteristics.**

- a. Clarity.

- b. Specificity.
- c. Consistency.
- d. Certainty.

2. **Persuasive message modeling.**

- a. Educational model, e.g., Owlle Skywarn vs. Modeling, e.g., celebrity endorsement.
- b. Scientific information.
- c. Attribute portrayal.
- d. Learning through participation.

E. Group 3 report: 2 minutes.

F. **Supplement** Group 3 report, as required (adapted from Lindell 1997, pp. 399-403).

- 1. **Age.**
- 2. **Gender.**
- 3. **Education.**
- 4. **Income.**
- 5. **Ethnicity.**
- 6. **Community bondedness.**
- 7. **Proximity to hazard zones.**
- 8. **Explain:** “. . . differences among demographic groups or cultures facing the same level of objective hazard can be explained by differences in such variables as awareness and perceptions of the characteristics of hazard adjustments, the strength of the subjective norms associated with different hazard adjustments, and the perceived controllability of hazard vulnerability given the resources for implementing the available adjustments.” (p. 400).

G. Group 4 report: 2 minutes.

H. **Supplement** Group 4 report, as required (adapted from Lindell 1997, pp. 411-414).

1. **Ability to comply.**

- a. Lack resources, e.g., knowledge, skill, equipment or financial.
- b. Infrequent task performance.
- c. Low motivation to learn.
- d. Minimal skill transfer.

2. **Motivation to comply.**

- a. **Example:** implementation of building code.
- b. Builders must be informed of standards.
- c. Multiple inspection times required.
- d. Increased costs.
- e. “Evasion can be achieved by imposing site access procedures making inspections more time consuming or physically demanding, rewarding accommodating inspectors with anything from minor favors to bribes, and punishing stringent inspectors with legal retaliation or physical violence against themselves or their property.” (p. 413).

Supplemental Considerations:

Depending on the **quality** of the group reports this section may require **extended discussion** and elaboration by the professor. The **key message** is to enhance student understanding of the range of **social factors** that constrain the **effectiveness** of hazard awareness programs. Some professors may **limit** the section to the group reports while others may **expand** the presentation greatly through both **critiques** of existing research and discussion of **needed research** designs to improve the **precision** and **validity** of findings. The review of literature on the earthquake hazard by Lindell and Perry (2000) could provide additional examples.

Objective 36.5 Describe three implications for disaster planning that are reflected in scientific knowledge on hazard perceptions.

Requirements:

Use Overhead 36-6.

Remarks:

I. Introduction.

A. **Ask students:** “Thinking back over the group reports and our other discussions of hazard perceptions, what implications do you see regarding disaster planning? How might this knowledge guide emergency managers in their disaster planning priorities and activities?”

B. **Record** student responses on the chalkboard.

II. Disaster planning implications.

A. **Display** Overhead 36-6; “Disaster Planning Implications.”

B. **Review** and illustrate the points highlighted on the overhead. **Integrate** with student responses listed on chalkboard (adapted from Auf der Heide 1989, pp. 23-27).

1. Prepare for most likely events.

- a. **Moderate-sized events** in contrast to a focus on “the worst case scenario.”
- b. **Most common types of events** in contrast to nuclear attack.
- c. **Predictable tasks** are required for most hurricanes, tornadoes, floods, etc. Use common functions like warning and evacuation as integrative devices.

2. High adaptability.

- a. **Adapt to routine emergencies** in contrast to an entire new structure.
- b. **Modular expansion** is pre-planned, i.e., as disaster demands are identified areas of specialty and scope of effort are modified.

3. Credibility and legitimacy.

- a. **Performance** through everyday presence before the public, e.g., disaster fair, small scale events.

- b. **Trust** is developed through successful responses involving personnel from community agencies.

Supplemental Considerations:

The **key message** of this brief section is that emergency managers must **use their knowledge** of hazard perceptions to guide agency **priorities** and **activities**. **Three themes** enhance student understanding of this basic principle. Rather than focusing on an extreme and low probability event, like nuclear attack, the emergency manager must recognize the **importance** of **public support**. Efforts to build **legitimacy** and **credibility** derive from demonstrations of successful responses to more **frequently occurring** events like floods, hurricanes, tornadoes, earthquakes, etc. Careful planning for **terrorist** attacks can be integrated within this **comprehensive** approach so that **modular expansion** can allow for the adaptability required. Some professors will **expand** this section by introducing related research. For example, studies of business preparedness behavior could be **summarized**, e.g., Dahlhamer and D'Souza (1997) and **linkages** could be made to the preparedness actions of **tourist business** managers, e.g., Session 28; "Tourism and Disaster: Preparedness, Responses, and Impacts." Other professors may use a case study of preparedness behavior and the social constraints that pattern such, e.g., Sattler et al. 2000 or Faupel et al. 1992.

Objective 36.6 Identify three general strategies for reducing public apathy toward disaster preparedness.

Requirements:

Use Overhead 36-7.

Remarks:

- I. Introduction.
 - A. **Ask students:** "Given the scientific knowledge we have of hazard perceptions and the range of implications we just discussed, what broad strategies come to mind for reducing public apathy? Let's face it, for most people disaster preparedness is a very low priority in relationship to more immediate demands of living. What can emergency managers do to reduce public apathy toward disaster preparedness?"
 - B. **Record** student responses on the chalkboard.
- II. Strategies for reducing public apathy.
 - A. **Display** Overhead 36-7; "Strategies for Reducing Public Apathy."

B. **Review** and illustrate the three strategies listed on the overhead. **Integrate** discussion with student generated examples (adapted from Auf der Heide 1989, pp. 27-31).

1. Liability.

a. **Court decisions** favor victims who claim lack of warning.

b. **Example:** Kusler, 1985: victim must show three facts.

1) Government body owed a duty to avoid, prevent, or lessen the loss.

2) Government body failed the duty.

3) Loss occurred because of failure.

2. Recent disasters.

a. **Funding** can best be obtained immediately after a disaster.

b. **Example:** South Dakota emergency manager informed Drabek (1987, p. 175) of use of a movie to stimulate commissioners. Following review of “The Day of the Killer Tornadoes,” in which the community EOC was disabled, they voted unanimously to budget an emergency generator.

c. **Example:** Rottman (2000) has summarized how the 1972 flash flood in Rapid City, South Dakota, established public and governmental recognition of true risk represented by the Rapid Creek floodplain. Following the flood, a major portion was removed from future building. “Instead, a five mile long recreational area was built, including a golf course, areas for picnics, cycling and jogging, ponds and skating rinks. These are all temporary use facilities, on which no one lives; an occasional flood won’t cause costly structural damage or kill hundreds of people.” (p. 6-7).

3. Public education.

a. **Example:** “News accounts emphasizing the lack of and need for improved emergency preparedness increases support for larger operating budgets and helps to make preparedness a higher local government priority (Stevenson, 1981:36).” (p. 30).

- b. **Example:** “In 1974, as a school bus was transporting children home, a tornado approached. Although the driver did not know what to do, a seventh-grade student on the bus did. His teacher had reviewed tornado precautions in class that day. The student convinced the driver to stop the bus and get everyone into a ditch. Although the tornado destroyed the bus, none of the pupils was injured (Foster 1980:187).” (p. 31).
- c. **Example:** Rottman (2000) has emphasized the importance of reliable warnings. “Accurate warnings are a real component of preparedness for violent storms, expanding wilderness fires, and migrating toxic spills.” (p.10-9).
- d. **Example:** Rottman (2000) has emphasized the importance of providing people with specific mitigation and preparedness actions they may take. Such actions include the following (p. 10-9).
 - 1) Strap water heater to wall studs.
 - 2) Install hurricane shutters.
 - 3) Install smoke detectors.
 - 4) Family meeting to discuss relevant hazards and what to do about them.
 - 5) When appropriate, purchase flood and/or earthquake insurance.

Supplemental Considerations:

This brief section will **enhance** student understanding of at least three broad **strategies** for reducing the level of public apathy in any community. Some professors will choose to **expand** the discussion through more student generated examples, recent case studies, or additional linkages to the assigned reading. Other professors will **expand** the discussion through a class exercise in which a series of **questions** are generated that can be posed during the upcoming **field trips**.

Course Developer References:

- I. Auf der Heide, Erik. 1989. *Disaster Response: Principles of Preparation and Coordination*. St. Louis, Missouri: C.V. Mosby Company.
- II. *The Capital*, September 19, 2003, pp. A1, A5-7, A9, and A12.

- III. *The Capital*, September 20, 2003, p. B1.
- IV. Dahlhamer, James M. and Melvin J. D'Souza. 1997. "Determinants of Business Disaster Preparedness in Two U.S. Metropolitan Areas." *International Journal of Mass Emergencies and Disasters* 15:265-281.
- V. Drabek, Thomas E. 1985. *Emergency Management: The Human Factor*. Emmitsburg, Maryland: National Emergency Training Center, Federal Emergency Management Agency.
- VI. Drabek, Thomas E. 1987. *The Professional Emergency Manager: Structures and Strategies for Success*. Boulder, Colorado: Institute of Behavioral Science, University of Colorado.
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- VIII. Drabek, Thomas E. and William H. Key. 1984. *Conquering Disaster: Family Recovery and Long-Term Consequences*. New York: Irvington Publishers, Inc.
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- XII. Gladwin, Hugh and Walter Gillis Peacock. 1997. "Warning and Evacuation: A Night For Hard Houses." Pp. 52-74 in *Hurricane Andrew: Ethnicity, Gender and the Sociology of Disasters*, edited by Walter Gillis Peacock, Betty Hearn Morrow and Hugh Gladwin. London: Routledge.
- XIII. Greene, Marjorie, Ronald Perry, and Michael Lindell. 1981. "The March 1980 Eruptions of Mount St. Helens: Citizen Perceptions of Volcano Threat." *Disasters* 5:49-66.
- XIV. Jackson, Edgar L. 1981. "Responses to Earthquake Hazard: The West Coast of North America." *Environment and Behavior* 13:387-416.

- XV. Kirschenbaum, Alan. 2001. "Mass Terrorism and the Distribution of Gas Masks in Israel: A Longitudinal Cohort Analysis." *International Journal of Mass Emergencies and Disasters* 19:245-267.
- XVI. Kusler, Jon A. 1985. "Liability as a Dilemma for Local Managers." *Public Administration Review* 45:118-122.
- XVII. Leik, Robert K., Sheila A. Leik, Knut Ekker, and Gregory A. Gifford. 1982. "Under the Threat of Mount St. Helens: A Study of Chronic Family Stress." Minneapolis, Minnesota: Family Study Center, University of Minnesota.
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- XXI. National Weather Service Archive. 2003. (<http://www.nhc.noaa.gov/archive/2003/HENRI.shtm> [accessed 11/07/03]).
- XXII. Quarantelli, E.L. 1982. *Sheltering and Housing After Major Community Disasters: Case Studies and General Conclusions*. Columbus, Ohio: Disaster Research Center, The Ohio State University.
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