

Session No. 10

Course Title: Social Dimensions of Disaster, 2nd edition

Session 10: Public Warning Responses

1 hr.

Objectives:

- 10.1 Explain the different stages of and patterns in evacuations within urban areas
- 10.2 Identify four confirmation sources
- 10.3 Identify three social factors that constrain the decision to evacuate
- 10.4 Describe two organizational characteristics that constrain employee evacuations
- 10.5 Describe five disaster evacuation policy issues.

Scope:

This session introduces students to research conclusions on public warning responses.

Readings:

Student Reading:

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 Disaster* edited by Walter Gillis Peacock, Betty Hearn Morrow and Hugh Gladwin. London: Routledge.

Professor Readings:

Drabek, Thomas E. 2000. "Pattern Differences in Disaster-Induced Employee Evacuations." *International Journal of Mass Emergencies and Disasters* 18:289-315.

Morrow, Betty Hearn. 1997. "Disaster in the First Person." Pp. 1-19 in *Hurricane Andrew: Ethnicity, Gender and the Sociology of Disaster* edited by Walter Gillis Peacock, Betty Hearn Morrow and Hugh Gladwin. London: Routledge.

Background References:

Drabek, Thomas E. 1999. *Disaster-Induced Employee Evacuation*. Boulder, Colorado: Institute of Behavioral Science, University of Colorado.

Lindell, Michael K. and Ronald W. Perry. 1992. *Behavioral Foundations of Community Emergency Planning*. Washington, D.C.: Hemisphere Publishing.

Drabek, Thomas E. 1986. *Human System Responses to Disaster: An Inventory of Sociological Findings*. New York: Springer-Verlag (Chapter 3 only, entitled, "Warning," pp. 70-98).

General Requirements:

Overheads (10-1 through 10-9 appended).

See individual requirements for each objective.

Objective 10.1 Explain the different stages of and patterns in evacuations within urban areas.

Requirements:

Start this session with the student exercise and proceed with lecture material specified below.

Use Overheads 10-1 and 10-2.

Remarks:

I. Introduction.

A. **Exercise.**

1. **Remind** students of exercise procedures.
2. **Divide** class into four groups and assign student roles.
 - a. Chair.
 - b. Reporter.
 - c. Timer.

3. Announce time limit: 5 minutes.

B. Display Overhead 10-1; “Workshop Tasks”.

1. Group 1 – What social characteristics most constrained the timeliness of house preparation for Hurricane Andrew? (identify five).
2. Group 2 – Describe the multiple constituencies that comprise urban communities like Dade County and explain the relevance to public warning responses.
3. Group 3 –Illustrate how decisions to evacuate prior to Hurricane Andrew reflected temporal and locational constraints.
4. Group 4 –Identify four social factors that most constrained the decision to evacuate prior to Hurricane Andrew.

C. Start discussion.

D. Stop discussion.

E. Explain that the Group 4 report will be delayed until later in this session.

F. Ask students: “What did Gladwin and Peacock mean by the sub-title to their article, i.e., “A night for hard houses”? (**Answer:** after Andrew, children expressed a desire to live in a safe house, i.e., a “hard house.” See Gladwin and Peacock 1997, pp. 52-53).

G. Explain: Over 1,000 households were **selected randomly** for interviewing over the telephone. (Morrow 1997, p. 13).

H. Explain: “The telephone company had also instituted call-forwarding and recorded message services, allowing us to track down many dislocated or moved households.” (Morrow 1997, p. 13).

I. Explain: Other book chapters reflect **parallel data collections** completed by the study team at Florida International University’s, International Hurricane Center (Morrow 1997, pp. 13-17).

1. **Tent city study** (over 50 open ended, face-to-face interviews with officials and victims).
2. **South Miami Heights survey** (random sample of approximately 200 households interviewed face-to-face from badly damaged South Miami area).

3. **South Dade population impact study** (subcontract by Bureau of Economic and Business Research, University of Florida to assess population change, movement and insurance settlements).
4. **American Red Cross project** (organizational effectiveness study).
5. **Homestead housing needs and demographic study** (joint study with FIU/Florida Atlantic University Joint Center for Environment and Urban Problems; telephone survey of approximately 1,000 households).
6. **Florida City study** (comparative community study by FIU graduate student; contrast to Homestead regarding impacts and recovery).
7. **Emergency Management Organizational Analysis** (coordinated and supplemented a study by two FIU professors of Public Administration).
8. **Subsequent** sessions in **this course** will **include** additional analyses and conclusions from this book, e.g., Session 21, “Crisis Decision Making” includes the emergency management study, #7 above.

II. Timeliness of household preparation.

- A. Group 1 report (2 minutes).
- B. **Emphasize:** this is but one of several **patterns** that characterize evacuations in urban areas.
- C. **Display** Overhead 10-2; “Timeliness of Household Preparations.”
- D. **Review** and illustrate factors listed as required given content of Group 1 report. Refer students to study results summarized in Table 4.1, i.e., Gladwin and Peacock 1997, p. 59).
 1. Age (older, delayed).
 2. Household type (single elder, delayed).
 3. TV channel watched (other than channels 4, 10, or 23, delayed).
 4. Prior hurricane experience (if none, delayed).
 5. Homeownership (owned, delayed).
 6. Race/ethnicity (Anglo, delayed).
 7. Household income (under \$20,000, delayed).

III. Multiple Constituencies.

A. Group 2 report (2 minutes).

B. **As required** after report, review and illustrate such points as these.

C. **Examples:**

1. **Households** vary greatly in composition, e.g., single elder, adult, adult couple, elder couple, non-related household, adults with children, single mother with children, single adult, related non-couple adults (see Gladwin and Peacock 1997, p. 59 for additional examples).
2. **Segments** of population may be warned differently and at different times.
3. Ethnic and racial differences.

D. **Relevance** to emergency managers.

1. An integrated system is a **false** image of urban communities.
2. An **image of diversity** must guide warning message preparation and dissemination.

IV. Temporal and Locational Constraints.

A. Group 3 report (2 minutes).

B. **Elaborate** as necessary with points like these after referring students to Table 4.2 and Figure 4.1 in assigned reading, i.e., Gladwin and Peacock 1997, p. 62 and p. 63.

1. **Temporal** (Peacock, et al. 1997, p. 62).
 - a. Change in storm severity over time.
 - b. Evacuation decisions made at differing times.
2. **Locational** (Peacock, et al. 1997, p. 63).
 - a. Whether household was within evacuation zone **constrained propensity** to evacuate.

- b. Whether household was within evacuation zone constrained the **overall proportion** of evacuees, e.g., evacuation rates by zip code varied from 100% to 1%.
- c. Whether household was within evacuation zone constrained the **relative proportion** of occupants who evacuated from any given household although **nearly all households evacuated as a unit**.

Supplemental Considerations:

The case study of **Hurricane Andrew** focuses student attention on one of the worst disasters in the history of the U.S.A. While other case studies could be used to document and illustrate similar lessons and response patterns, this event is one that all students of emergency management should have in their repertoire of case illustrations. The **complexity, unevenness and patterned stages of evacuations** by populations within urban settings is the key message.

Objective 10.2 Identify four confirmation sources.

Requirements:

Use Overheads 10-3 and 10-4.

Remarks:

I. Lindell and Perry Study (1992).

A. **Events studied.**

- 1. Flood – Abilene, Texas.
- 2. Hazardous materials incident – Mt. Vernon, Washington.
- 3. Hazardous materials incident – Denver, Colorado.

B. **Confirmation sources.**

- 1. **Display** Overhead 10-3; “Message Confirmation Sources: General Public”.
- 2. **Review** the confirmation sources listed and illustrate each (Lindell and Perry 1992, p. 1999).
 - a. Authorities – 9%.

- b. Mass media – 38%.
 - c. Peers – 30%.
 - d. No attempt – 23%.
3. **Explain** that the disaster agent impacted the type of source people turned to in their efforts to confirm the initial warning message.
- a. **Example:** In Abilene (flood), only 5% consulted **authorities**, whereas in Mt. Vernon, 16% did so.
 - b. **Example:** In Abilene (flood), 42% consulted peers, whereas in Denver, only 10% did so.
 - c. See data presented by Lindell and Perry (1992, p. 199), for additional examples, if desired.
4. **Explain** that families warned from one source will typically seek confirmation through a different source (Drabek 1986, p. 84).

II. Drabek study (1999).

A. **Events studied** (p. 10).

1. Hurricane Felix.
2. Hurricane Fran.
3. Flood, Washoe County, Nevada.
4. Flood, Stanislaus County, California.
5. Flood, Sutter and Yuba Counties, California.
6. Flood, Larimer County, Colorado.
7. Flood, Logan County, Colorado.

B. **Employee Sample.**

1. Number of business firms = 118.
2. Number of employees interviewed = 406.

C. Confirmation Sources.

1. **Display** Overhead 10-4; “Message Confirmation Sources: Employees”.
2. **Review** the confirmation sources listed and illustrate each (Drabek 1999, p. 68).
3. **Explain** that the percentages listed in the **left hand column** of the overhead **document** the confirmation sources that these employees consulted **initially** upon hearing a warning message. Note: “informal” referred to store customers, people on the street, drivers delivering items, etc. “Specialized agency” referred to a flood control district representative, employee of the National Weather Service, etc.
 - a. Media – 71%.
 - b. Other firm employee – 13%.
 - c. Informal – 2%.
 - d. Relative/friend – 3%.
 - e. Local government official – 3%.
 - f. Specialized agency – 1%.
 - g. Observation of others – 8%.
4. **Explain** that the percentages listed in the **right hand column** of the overhead **document** the confirmation sources that these employees consulted **just prior to evacuating** from their work location (i.e., final).
 - a. Media – 14%.
 - b. Other firm employee – 28%.
 - c. Informal – 2%.
 - d. Relative/friend – 4%.
 - e. Local governmental official – 21%.
 - f. Specialized agency – 3%.

g. Observation of others – 28%.

5. **Highlight** data patterns like these.

a. Media consultation **dropped** from 71% to 14%.

b. Local government official **increased** from 3% to 21%.

c. Observation of others **increased** from 8% to 28%.

6. **Explain** that **upper level management** personnel more frequently confirmed warning messages by consulting **local government officials** whereas **lower level** employees more commonly turned to **another firm employee** or a **relative**.

Supplemental Considerations:

These data **document** significant patterns in community warning responses. While the focus of this section is a **narrow category** of disaster behavior, i.e., message confirmation sources, the analysis provides opportunity to underscore **diversity**. Higher level employees, for example, do not turn to the same sources to confirm disaster warnings as their lower level counterparts. This pattern documents the **reality of community diversity** and one of its consequences. Reflecting their everyday range of experiences these employees were **constrained by socioeconomic status differences**. So too, in the Lindell-Perry study, characteristics of the **disaster agent** reflected a different basis of constraint, which in turn, guided public responses into a different pattern variation.

Objective 10.3 Identify three social factors that constrain the decision to evacuate.

Requirements:

Use Overhead 10-5.

Remarks:

I. Group 4 report (2 minutes).

II. **Evacuation Constraints.**

A. **Display** Overhead 10-5; “Evacuation Constraints.”

B. **Relate each** of the items listed on other overhead to the ideas summarized by Group 4.

- C. As required, **supplement** with illustrations from the relevant assigned reading (i.e., Peacock et al. 1997, pp. 67-68).
1. Location in evacuation zone.
 2. Household size.
 3. Household with elderly.
 4. Household with children.
 5. Single family dwelling.
- D. **Contrast** this network of evacuation constraints with the more general listing of social factors presented in the prior session (Session No. 9, “Understanding Disaster Warnings”, see Section 9.2, part III).
- E. **Explain** that the single study of Hurricane Andrew did not document many of the factors others have found to be relevant, e.g., message characteristics, and many receiver characteristics.
- F. **Ask students:** “Which of the evacuation constraints documented by Peacock and his colleagues (1997), also reflected the types of characteristics we reviewed in our last session?” **Answer:** The Hurricane Andrew study documented the importance of locational dimensions, situational conditions (e.g., household size) and various ‘receiver’ qualities (e.g., age, children present, single family household).
- G. **Explain** that in different disaster events, with different characteristics and emphases by researchers, various **social constraints** have been documented as being more or less important. **Future comparative research** is required to link specific event qualities to clusters of social constraints.

Supplemental Considerations:

This brief section could be expanded easily by a more in depth contrast between the study specific finding, i.e., Hurricane Andrew, and the more broadly based factors identified in Session No. 7. The analysis presented in Session No. 7 reflected **numerous** studies that involved varying types of disaster agents that in turn reflected differing types and degrees of emergent perceptions of risk. The messages of this section are: 1) social constraints pattern community warning responses, and 2) the specific matrix of constraints vary from one study to another because of the **social characteristics** of the event, its location, community history, population demographics and the like.

Objective 10.4 Describe two organizational characteristics that constrain employee evacuations.

Requirements:

Use Overheads 10-6 through 10-9.

Remarks:

I. **Example study:** Drabek 2000.

A. **Events studied** (p. 292).

1. **Same listing** reviewed previously in this session from book published one year earlier, i.e., Drabek 1999. See Objective 10.2, Section II.A.
2. **Review** events and samples in more detail.
 - a. **Hurricane Felix** (August, 1995): 25 business firms located in Carteret and Dare Counties, North Carolina (90 employees interviewed).
 - b. **Hurricane Fran** (September, 1996): 24 business firms located in Pender, New Hanover and Brunswick Counties, North Carolina and Horry County South Carolina (116 employees interviewed).
 - c. **Floods** (January, 1997): 30 business firms located in Stanislaus, Sutter, and Yuba Counties, California and Washoe County, Nevada (95 employees interviewed).
 - d. **Floods** (July, 1997): 39 business firms located in Larimer and Logan Counties, Colorado (105 employees interviewed).
 - e. **Total study sample:** 118 business firms; 406 employees interviewed.

B. **Pattern variations assessed.**

1. **Length of forewarning.**
2. **Organizational size.**
3. **Organizational mission.**

II. **Evacuation sub-processes** constrained by **length of forewarning.**

A. **Display** Overhead 10-6; “Evacuation Sub-Processes Constrained by Length of Forewarning.”

B. **Explain:** Drabek (2000) identified **111 dimensions** of employee responses reflecting **behavioral sequences** related to these evacuations.

1. Interdependent sequences of behavior were labeled “evacuation sub-processes”.
2. Some sub-processes reflected aspects of the actual evacuation, e.g., “work group discussions” while others reflected **impacts** of the evacuation experience, e.g., morale change.
3. See Table 2 in Drabek 2000 (pp. 297-299) for data on which the following interpretations were based.
4. **Explain** that Drabek (2000) divided the employee sample “. . . into three subsamples based on the gap between the day that each employee **first** learned that the particular disaster might pose a threat and the day of impact.” (p. 295).
5. **Standardized measurement** process allowed for **variation** in warning contexts and timing **within** each of the 12 field sites.
6. **Measurement:** length of forewarning.
 - a. Long (six hurricane impacted communities).
 - b. Medium (floods in Sutter and Yuba Counties).
 - c. Short (flash floods in four counties).

C. **Degree of precision.**

1. **Refers to:** the degree of precision perceived by employees in the warning messages received.
2. **Measured as:** “high”, “medium”, or “low”.
3. **Finding:** employees (n = 206) in events with long periods of forewarning, **more frequently** defined the **degree of precision** in the messages received **as high** (98% vs. 57% with short forewarning; n = 162).

D. **Perceived personal risk.**

1. **Refers to:** the degree that employees took **specific actions** after hearing warning messages; these actions reflected the degree of danger or personal risk they perceived at that time.
2. **Measured as:** “nothing”, “waited for more information”, “tried to confirm”, “prepared to leave”, “warned others”, “contacted family”, “other”.
3. **Finding:** employees (n = 206) in events with long periods of forewarning, **more frequently waited for more information** (thereby reflecting low or medium level of perceived personal risk) (40% vs. 11% with short forewarning; n = 162).
4. **Finding:** employees (n = 206) in events with long periods of forewarning, **less frequently warned others** (2% vs. 30% with short forewarning; n = 162).
5. **Finding:** regardless of the length of forewarning, nearly one-half of all employees **tried to confirm** the warning messages (long – 47%; medium – 42%; short – 43%).

E. Initial confirmation source.

1. **Refers to:** the first source turned to for message confirmation.
2. **Measured by:** “media”; “co-worker”; “customer”; “relative/friend”; “local government”; “specialized agency”; or “observation”.
3. **Finding:** employees (n = 206) in events with long periods of forewarning, **more frequently used the media** for message confirmation (93% vs. 43% with short forewarning; n = 162).
4. **Finding:** employees (n = 206) in events with long periods of forewarning, **less frequently used co-workers or observation** for message confirmation (6% and 0% respectively vs. 22% and 20% with short forewarning; n = 162).

F. Work group discussions.

1. **Refers to:** discussions with co-workers regarding the threat prior to evacuation from work place.
2. **Measured by:** “extensive”, “some”, “a few”, “none”.

3. **Finding:** employees (n = 206) in events with long periods of forewarning, **more frequently** reported **extensive** work group discussions (79% vs. 64% with short forewarning; n = 162).

G. Contacted others.

1. **Refers to:** actual or attempted efforts to contact other people prior to work place evacuation.
2. **Measured by:** “friend/relative”, “co-worker”, “no”, “not at work” (when evacuation occurred).
3. **Finding:** employees (n = 206) in events with long periods of forewarning, **more frequently** contacted friends/relatives (59% vs. 29% with short forewarning; n = 162).
4. **Finding:** employees (n = 206) in events with long periods of forewarning, **less frequently** contacted **co-workers** (8% vs. 42% and 18% with medium or short forewarning (n = 38 and 162 respectively).

H. Provided pre-impact assistance at work.

1. **Refers to:** specific protective actions taken by the employee prior to evacuation from the work place, e.g., boarded windows, moved objects, etc.
2. **Measured by:** “yes” or “no”.
3. **Finding:** employees (n = 206) in events with long periods of forewarning, **more frequently** provided pre-impact assistance at work (79% vs. 57% with short forewarning; n = 162).

I. Experienced home/job tensions.

1. **Refers to:** employees who reported that during the evacuation period, they encountered tensions between their job requirements and family needs, e.g., received telephone calls from children and/or spouse asking them to leave work and return home.
2. **Measured by:** “yes” or “no”.
3. **Finding:** employees (n = 206) in events with long periods of forewarning, **more frequently** reported home/job tensions (31% vs. 11% with short forewarning; n = 162).

J. Morale change.

1. **Refers to:** employees who indicated that “. . . morale was adversely impacted because of evacuation policies and procedures used by this company during this event . . .” (Drabek 2000, p. 299).
2. **Measured by:** “adverse impact”, “no change”, “improvement”.
3. **Finding:** employees (n = 206) in events with long periods of forewarning, **more frequently** reported that the evacuation experience had made **no change** on morale (78% vs. 44% with short forewarning; n = 162).
4. **Finding:** employees (n = 206) in events with long periods of forewarning, **less frequently** reported either adverse impacts or improvements in morale (12% and 11% vs. 18% and 38% respectively with short forewarning; n = 162).

III. **Evacuation sub-processes** constrained by **organizational size**.

- A. **Display** Overhead 10-7; “Evacuation Sub-Processes Constrained by Organizational Size”.
- B. **Explain:** Drabek (2002, p. 300-304) divided the 406 firms into **three size categories** based on the **number of full-time employees**.
 1. **Large firm:** had **100 or more** employees (17 firms that employed 111 of those interviewed).
 2. **Medium size firms:** had **16 to 99** employees (39 firms that employed 154 of those interviewed).
 3. **Small firms:** had **15 or fewer** employees (62 firms that employed 141 of those interviewed).
- C. **Review several** of the findings listed below which were derived from data in Table 3 (pp. 301-302).
- D. **Only** those evacuation sub-processes that were **not** described **above** are explained below.
- E. **Warning message inconsistencies**.
 1. **Refers to:** examples of **inconsistencies** in the warning messages received prior to evacuating the work place location.
 2. **Measured by:** “yes” or “no”.

3. **Finding:** employees in large firms **more frequently** reported warning message inconsistencies (49% vs. 26% in small firms).

F. Degree of precision in warning messages.

1. **See discussion above** for definition and measurement.
2. **Finding:** employees in large firms, **more frequently** reported a high degree of precision in warning messages received (79% vs. 65% in small firms).
3. **Finding:** employees in large firms **less frequently** reported a high degree of precision in warning messages received than those in medium size firms (79% vs. 86%).

G. Final confirmation source.

1. **Refers to:** the last source consulted to confirm the warning messages prior to evacuation from the work place.
2. **Measured by:** “media”, “co-worker”, “customer”, “relative/friend”, “local government”, “specialized agency”, and “observation”.
3. **Finding:** employees in large firms, **more frequently** reported “co-workers” as their final confirmation source (37% vs. 16% in small firms).
4. **Finding:** employees in large firms, **less frequently** reported “observation” as their final confirmation source (19% vs. 42% in small firms).

H. Work group discussions.

1. **See discussion above** for definition and measurement.
2. **Finding:** employees in large firms, **more frequently** reported **extensive** work group discussions (80% vs. 56% in small firms).

I. Experienced home/job tensions.

1. **See discussion above** for definition and measurement.
2. **Finding:** employees in large firms, **more frequently** experienced home/job tensions (33% vs. 11% in small firms).

J. **Morale change.**

1. **See discussion above** for definition and measurement.
2. **Finding:** employees in large firms, **less frequently** reported that the evacuation experience had made **no change** on morale (56% vs. 68% in small firms).
3. **Finding:** employees in large firms, **more frequently** reported that the evacuation experience had **improved** morale (36% vs. 16% in small firms).
4. **Finding:** employees in large firms, **less frequently** reported that the evacuation experience had **adversely impacted morale** (8% vs. 17% in small firms).

IV. **Evacuation sub-processes** constrained by **organizational mission.**

- A. **Display** Overhead 10-8; “Evacuation Sub-Processes Constrained by Organizational Mission.”
- B. **Explain:** Drabek (2000, pp. 304-309) divided the 406 firms into four mission types.
 1. **Manufacturing** (24 firms which collectively employed 57 workers).
 2. **Service-people focused**, e.g., insurance agency (26 firms which collectively employed 85 workers).
 3. **Service-object focused**, e.g., auto repair (41 firms which collectively employed 123 workers).
 4. **Shelter providers**, e.g., nursing home, hotel (27 firms which collectively employed 141 employees).
- C. **Review** several of the findings listed below which were derived from data in Table 4 (pp. 306-308).
- D. **Only** those evacuation sub-processes that were **not** described **above** are explained below.
- E. **Degree of precision in warning message.**
 1. **See discussion above** for definition and measurement.

2. **Finding:** employees of shelter provider firms, **more frequently** perceived a high degree of precision in the warning messages (87% vs. 42% in manufacturing firms).

F. Final confirmation source.

1. **See discussion above** for definition and measurement.
2. **Finding:** employees of shelter provider firms, **more frequently** reported **co-workers** as their final confirmation source (40% vs. 11% in manufacturing firms).
3. **Finding:** employees of manufacturing firms, more frequently reported **observation** as their final confirmation source (44% vs. 14% in shelter provider firms).

G. Perceived work location would remain safe.

1. **Refers to:** based on the available information, the work place would be a safe place to stay during an event like (name of event).
2. **Measured by:** “yes”, “no”, “not sure”, or “depended on changes in threat”.
3. **Finding:** employees of service-people focused and shelter provider firms **more frequently** reported that they **did not** believe their work location would remain safe (52% and 51% respectively vs. 43% service-object focused and 44% manufacturing firm employees).
4. **Finding:** employees of shelter provider firms, **more frequently** reported that they **did believe** their work location would remain safe (31% vs. 16% service-object focused, 14% service-people focused and 7% manufacturing firm employees).

H. Contacted others.

1. **See discussion above** for definition and measurement.
2. **Finding:** employees of shelter provider firms, **more frequently** contacted **friends or relatives** prior to evacuating their work place (59% vs. 30% in manufacturing firms).
3. **Finding:** employees of manufacturing firms, **more frequently** contacted a **co-worker** prior to evacuating their work place (30% vs. 8% in shelter provider firms).

I. Provided pre-impact assistance at work.

1. See **discussion above** for definition and measurement.
2. **Finding:** employees of shelter provider firms, **more frequently** provided pre-impact assistance at work (85% vs. 75% manufacturing, 55% service-object focused and 54% service-people focused firms).

Supplemental Considerations:

The message of this section is that **organizational characteristics**, like communities and families, constrain evacuation behavior. Depending on course context and professional interest, this section could be **very brief** or as detailed above. By helping students understand a few of the example findings listed, the overall message can be demonstrated very adequately. If desired, students could be asked about some of the findings, i.e., do they make sense? Also, they could be asked to propose **additional** organizational features that might constrain employee evacuation behavior. In this way they will have a better understanding of the **unevenness, complexity, and diversity** of evacuation experiences and contexts.

Objective 10.5 Describe five disaster evacuation policy issues.

Requirements:

Use Overhead 10-9.

Remarks:

- I. Hurricane Andrew study (assigned reading).
 - A. **Ask students:** “Based on the assigned reading, what types of policy issues emerged from the study of the evacuations prior to Hurricane Andrew?”
 - B. **Display** Overhead 10-9; “Hurricane Policy Issues”.
 - C. **Review** items listed and integrate with student comments.
- II. General evacuation policy issues.
 - A. **Ask students:** “What types of policy issues do other types of disaster agents present?”
 - B. **Ask students:** “As you think of potential evacuations that might be induced by terrorist acts; what types of policy concerns come to mind?”

- C. **Ask students:** “Focusing on disaster agents with relatively short forewarning, like tornadoes and earthquakes, what policy issues must emergency managers confront?”

Supplemental Considerations:

Brief discussion of policy issues at the end of the session can help bring **relevance** to the more technical material. While general, such discussion can enhance student understanding of the role and **limits of scientific research**. Emergency managers must use the knowledge produced by scientists studying the dynamics of community evacuations. They must go beyond understanding the factors of constraint and assist in **stimulating the policy making processes** within all types of social systems ranging from families and other sectors of “the public” like schools and private firms, to all levels of government.

Course Developer References:

- I. Drabek, Thomas E. 2000. “Pattern Differences in Disaster-Induced Employee Evacuations.” *International Journal of Mass Emergencies and Disasters* 18:289-315.
 - II. Drabek, Thomas E. 1999. *Disaster-Induced Employee Evacuation*. Boulder, Colorado: Institute of Behavioral Science, University of Colorado.
 - III. Drabek, Thomas E. 1986. *Human System Responses to Disaster: An Inventory of Sociological Findings*. New York: Springer-Verlag.
 - IV. 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 Disaster*, edited by Walter Gillis Peacock, Betty Hearn Morrow and Hugh Gladwin. London: Routledge.
 - V. Lindell, Michael K. and Ronald W. Perry. 1992. *Behavioral Foundations of Community Emergency Planning*. Washington, D.C.: Hemisphere Publishing.
 - VI. Morrow, Betty Hearn. 1997. “Disaster in the First Person.” Pp. 1-19 in *Hurricane Andrew: Ethnicity, Gender and the Sociology of Disaster* edited by Walter Gillis Peacock, Betty Hearn Morrow and Hugh Gladwin. London: Routledge.
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