



“Flash Flood Alley” Study Guide Version 1. 5/29/05

Email your answers / responses via the following link: <http://floodsafety.com/contact.php>

The Flood Safety Education Project 432 Wagon Wheel Gap Road Boulder, Co 80302

### **Introduction**

We are very grateful to those citizens and subject matter experts who have agreed to be interviewed for this project. Like any other hazard come to life, every flood event provides a learning opportunity. And it is only through a process of critical review and adjustment that we can hope to improve our preparation for and response to floods.

As it stands today, there is insufficient public knowledge of flood risk: where floods are likely to occur, flood insurance issues, and what to do to prevent and prepare for floods. This study guide should help you consider and describe some of larger issues that effect this situation and the growing challenge that floods represent.

It is important to note the Flood Safety Education Project and our movie “Flash Flood Alley” intentionally focuses on real flood events and victims to inform a dialogue and actions that reduce risks to life and property. As you proceed through the questions below, please consider these larger questions: Are there systemic problems related to our national response to flood problems? Can we do better? And if so, what are some realistic expectations for improvements in our modern communication era?

To be sure, it is easy to merely criticize the actions of the past with the benefit of hindsight. The New Braunfels area of Central Texas is intended as an illuminating case study area, with its recent repetition of dramatic flood events and the rich flood history of the beautiful Guadalupe River. But this area is just one case study -- representative of countless other areas. (The neighboring Texas' Colorado River watershed has even more people living in harm's way and greater pressures to continue the trend. Many other states face similar challenges from both monsoonal rains and the random drought buster

Please keep in mind that we seek not to point out the failings of any one area, entity, or individual but instead to address the complex issues of how flood risk is perceived and responded to, a critical review of the modern patterns that have evolved after floods, and what steps we can take to move us into more symbiotic, rather than tragic, relationships with this natural hazard.

Please read the following note on procedures before continuing on to the questions.  
Thank you for your participation in this innovative program.

Sincerely,

Marshall Frech, Producer  
The Flood Safety Education Project

## Study Guide Procedures

### **Read all questions:**

It is advised that you watch the movie “Flash Flood Alley” (available on DVD-ROM) and read all the questions before responding. You should also be familiar with the extensive resources available in support of the movie via the DVD-ROM or our web site:

[http://www.floodsafety.com/media/ffa/contents\\_index.htm](http://www.floodsafety.com/media/ffa/contents_index.htm)

### **Submitting and Reviewing Answers on the Internet**

We look forward to you sharing your written responses to the questions below. Over time, we will be post some of your answers on our web site. Your teacher will provide you with a password so that you can read other’s responses. These answers will also be made available to decision-makers so that they may learn from your perspectives. Note: We will not post every answer we receive but those that we feel are well defended or offer interesting perspectives.

### **Subject Matter Experts:**

We will have some answers (and related thought) from noted flood experts so you can compare and contrast these with your own. These will only be available after you have submitted your questions (or if you have been given the password to that area).

### **Additional Video Clips (contained on the “Flash Flood Alley” DVD-ROM)**

Along with the “Flash Flood Alley” movie, there are 39 additional video clips (outtakes and misc interviews) arranged in the following categories that may assist you in your answers:

[Flood Insurance](#)

[Politics, Policy and Economics](#)

[Flood Risks and Safety](#)

[The Coble Case Study](#)

[Rebuilding in Floodplains](#)

## Study Guide Questions

## **#1. Relaying Risk**

**(How are we relaying flood risks to the public, and how can this effort be more effective?)**

Hydrologist Dr. Victor Baker makes the assertion that people have historically been motivated to judge flood risks for themselves because there was no flood insurance. Today, Baker asserts, the citizens in flood-prone areas simply look to the government to determine the risk.

**Q1A:** What can explain the disparity between the predominance of flooding in a place like Central Texas -- which has been called the most flash flood prone region of the country and (as the filmmaker asserts) the relative lack of knowledge of the citizens and local officials?

[Q1B: Texas was a republic for about ten years before becoming a state. Most of the land is private. How might this, or other historic or cultural characteristics play a part in the disparity?](#)

## **#2. Subsidizes versus Prevention:**

**(In what ways do we subsidize the repetitive disaster that floods represent and in what ways do we discourage floodplain development?)**

Subsidies of various kinds are a mainstay of American lifestyles and quality of life. Homeowners (with mortgages) living in floodplains all over the United States are required to pay into the National Flood Insurance Program (NFIP). The NFIP is subsequently one of the largest government programs in existence (second only to Social Security by some reports). One controversial aspect of this program is that it is not actuarially sound. \*Which is to say, it generally treats everyone's flood risk as the same and does not differentiate the higher volatile regions of the country (with greater risk from flash floods than more moderate areas). The relevant history of this is that the creation of the NFIP led to the development of the so-called "100-year floodplain" standard as a way to regulate the program. Therefore, the NFIP works on the theory that the risk of flood damages in its "100-year floodplains" are the same all over the country. But this is not true. The majority of NFIP claims come from a few coastal states (like Florida, Louisiana and Texas).

(\*This is far different than a private auto insurance company for example, which bases insurance rates based on highly detailed information about each applicant including age, history or accidents, type of vehicle, and even zip codes.)

**Q2A:** List some examples (of subsidies) and decide if it is fair for other areas of the country to subsidize the encroachment, subsequent damages and later rebuilding in the floodplains of the most flood-prone states?

## **#3. Who pays for flood damages? (floodplain economics)**

When a flood damages the property of homeowners with National Flood Insurance Program (NFIP) policies, the damages are paid for out of the shared pool of insurance monies (known as premiums) collected and managed by the NFIP. The net result is that the general taxpayer does not pay for those damages.

However, when a federal disaster is declared, the money for damages comes out of the United States' General

Fund. In these cases the general taxpayer does foot the bill. Secondly, there are many of types of relief including repair loans, and grants that involve taxpayer dollars.

It is a well established fact that large scale floods often strike people living in or near “100-year floodplains,” who have no insurance and have to pay for the costs themselves. Note: even the NFIP reports that nearly 30% of flood claims come from outside their “100-year floodplain.”

**Q3A:** Describe the “costs” of a large-scale flood that hits a large urban area and is declared a federal disaster. Differentiate between the various levels (like homeowners versus businesses and municipalities) and the insured versus the uninsured. Consider both personal and financial costs.

#### **#4. Who Profits from Flood Damages? (Roles and motivations)**

After a flood, communities and individuals have several types of expenses incurred in recovering and/or rebuilding.

**Q4A:** Describe the roles and motivations of some of the following people/professional titles relative to the trend to build and rebuild in beautiful, yet flood-prone, areas (be sure to include the Homeowner or Floodplain Occupant):

- a. Original property owners
- b. Developer/builders
- C. Private Engineering Firms
- D. Building Material Retailers
- E. Realtors
- F. Bankers
- G. City Planners and Engineers
- H. School Districts
- I. Rescue Personnel (Fire fighters, EMS, Police, Etc.)
- J. City Managers
- K. Chamber of Commerce
- L. County Officials
- M. State Officials
- N. Federal Government Officials
- O. Taxpayers (not in floodplains)
- P. Floodplain Homeowners or Occupants

Consider breaking up into groups and role-playing with the various titles as you discuss whether to rebuild after a flood.

**Q4B:** From the list above: Who stands to profit? Who regulates whom? Who takes the risks?

**Q4C:** In a pure sense, the vigilance related to flood risk should never change since the risk is always the same. Then again, policies are often spawned from specific events. How might the roles and motivations of the entities mentioned above change soon after a dramatic flood event versus the atmosphere that would develop over many years with no floods?

**Q4D:** What effect might a loss of life in a developed floodplain bring to this process? Write a 1-2 page paper on the topic of who pays for flood damages and who profits or is helped in some way by flood events and their details? (Reference but do not be limited to the list in #4 above.)

## **#5. Media Trends and Community Messaging After Floods:**

**Are media trends and community messaging effective after floods? What specific changes would show improved communication?**

Natural disasters are powerful events that evoke both personal and regional or national emotional responses. Critical voices raising questions about, for example, why residents were located in harm's way in the first place, are generally unwelcome because they appear uncaring.

The media's coverage of floods (as other disasters) often follow common patterns and use some of the following formulas:

Part One: Voice of authority pronounces the event as rare – "I've been here all my life and never seen it get this bad before."

Part Two: Media coverage is dominated by the heroes of the relief effort and the courage of the survivors.

Part Three: A community leader (or media representative) minimizes personal tragedies and promotes the positives (with notes on economic viability) – "This town will open for business in short order. What you see all over this community is people pulling together. That's what makes our town great."

Part Four: Isolated events --News reporter or anchor makes little mention about overall flood risk trends in the area or educational programs or resources for citizens (unless the station has its own program).

Part Five: Follow-up stories build on the courage of the community to rebuild and its thankfulness for the assistance it received.

**Q5A:** Support or refute the idea of such formulas by doing a Google search on flood stories. If you like, compare with flood stories run about other countries.

### **Option Two: Social Amnesia**

**Is rebuilding in harm's way a simple case of "forgetting" the power of nature?**

**Q5B:** Describe some factors that can contribute to "cultural forgetfulness." Consider individual behavior versus group behavior and the psychological needs of victims of a natural disaster.

## **#6 Concrete Solutions:**

**How do technological prowess and "concrete solutions" affect flood losses, both positively and negatively? What are some hopeful new opportunities?**

Are we perhaps now at a point of discovery and technological prowess where flood with large-scale damages will soon cease to be a problem? Or, is the problem of deaths and damage from flooding going to get worse as we increase the urbanization of floodplains?

**Q6A:** Write a 1-2 page paper addressing these issues.

## **#7. Who and How?**

**Whose roll is it to inform people living in floodplains about the risks they face and what to do if they receive a flood warning? How should this be done?**

Where should flood risk education start? What are the appropriate roles of local, state and federal government? What media and mechanisms should be used?

**Q7A:** Draw a parallel to an existing public education campaign (smoking, seatbelts, drunk driving, AIDS, etc.). Explain the basic message of a TV advertisement, any challenges you can see for this message and how the ad is effective. Then describe a few details of your idea for a successful flood risk campaign for the general public that explains flood risks and appropriate responses.

## **#8 Floodplain Alternatives:**

What are alternatives to increased floodplain development? What methods have communities in the U.S. used to leave floodplains as open space? How can these methods be more broadly adopted?

Floodplains have beneficial uses to certain plants and animals. Of what use can floodplains be to a community? Take the floodplains of New Braunfels, for example. What other uses could that land serve? How would this effect future flood losses? Who would benefit from your new plan for the area? Who would oppose such a plan? Why? Lastly, who might work with flood risk communities to implement your plan?

**Q8A:** Describe a rudimentary plan for the floodplain areas of New Braunfels (or a similar area with high flood risk) addressing some of the questions raised above.

## **#9. Building and Using Contextual Resources**

The FloodSafety.com web site has links to pages on:

Personal Safety Information

Property Safety Information

Regional Information (for major Texas cities)

Flood Histories (for all of Texas) with recorded flood peaks at USGS stream gages

Active agencies and related programs and materials

Solutions: (such as successful floodproofing examples)

**Q9A:** Write a 1-3 paper describing/inventing some aspect of an innovative flood education program that covers some of the following topics.

1. Comprehensive watershed approaches to flood management that exceed political boundaries.
2. Public outreach efforts for floodplain rules and recommendations (find details on who determines and enforces such issues from a Floodplain managers Association).
3. Improved media coverage of events that provide more contextual information about regional risks with resources for follow-up.
4. More solutions-oriented stories.

### **#10. What is a realistic level of flood awareness /preparedness?**

Flood risk represents just one of the many hazards that the general public might have to deal with. This risk is highly random but there are usually seasons throughout the year with higher probability. Even if you do educate a community about a flood that has hit their town, the chances of a repeat event may seem low, or at least not “stick” people’s minds.

**Q10A:** What is a realistic expectation raising awareness with the general public. Describe a potential flood scenario and the conceptual information and/or responsive actions that a citizen might have formulated prior to the event through exposure to a flood safety education campaign.