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# Integrating Historic Preservation and Disaster Management

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Presented to the Faculties of the University of Pennsylvania in Partial Fulfillment of the Requirements for the Degree of Master of Science in Historic Preservation 2006.

Advisor: David Hollenberg

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## **Comments**

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INTEGRATING HISTORIC PRESERVATION  
AND DISASTER MANAGEMENT

Sarah Marie Thorp

A Thesis in Historic Preservation

Presented to the Faculties of the University of Pennsylvania  
In Partial Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE IN HISTORIC PRESERVATION

2006

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DEDICATION

for Laura Henrietta Hett

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CHAPTER 1  
INTRODUCTION

Disasters are momentous events in the history of a place. They are momentous in people's memories, as well as momentous in the changes that occur in the built environment of the place. Recent disasters such as Hurricane Katrina on the Gulf Coast in 2005, Hurricane Hugo in Charleston, South Carolina in 1989, and the 1989 Loma Prieta and 1994 Northridge earthquakes in California have left shattered lives and landscapes. The field of historic preservation studies history and memory in order to establish levels of significance in the landscape of the built environment. The field of disaster management studies hazards, risks, response, and recovery in order to minimize trauma and loss after a disaster. These two fields overlap in many ways, and the purpose of this thesis is to examine the integration of historic preservation into the field of disaster management, and also to examine the integration of disaster management considerations into the fields of historic preservation, planning, and architecture.

The thesis approaches the field of historic preservation through the structure of the social science-oriented field of disaster study. Disaster policies can be very different in different countries; therefore, this thesis is a study of disaster management and historic preservation policy in only the United States, although it uses historical examples from various countries to examine basic principles of the different ways that places respond to disasters and choose to rebuild. Disaster preparedness, response, and recovery all require extensive collaboration among professionals from various fields. These professionals may not ever work together in their daily operations, but in planning for disasters, or in the actual event of a disaster, they must work together toward the common goal of recovery of a place and a population after a tragedy.



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In the past, historic preservation has not been integrated into the field of disaster management, which is primarily concerned with protecting human life and restoring basic services that support life and settlement immediately after a disaster. Historic preservation, and more generally, the treatment of property during and after a disaster, has been rightly viewed as a secondary consideration to the much more important priority of preserving human life. In the last decade, however, as the fields of both historic preservation and disaster management have matured and have become more sophisticated, professionals in the two fields have recognized the need for increased collaboration. There has been a realization that the preservation and protection of cultural resources is important in the mental and emotional rebuilding of a place; the unnecessary destruction of cultural resources after disasters causes unnecessary emotional distress and pain.

Professionals in the field of historic preservation as well as society in general have long recognized the need for preservation of monumental architecture. However, disasters are not discriminate and do not only affect monumental buildings, but also vernacular houses, streetscapes, and cultural landscapes. This thesis discusses preservation policies and disaster policies with respect to these more vulnerable vernacular resources. These types of resources are extremely vulnerable to damage or loss in a disaster situation. They are, in general, constructed of more fragile materials than large-scale public architecture and in many cases do not have dedicated disaster managers who can administratively either plan and prepare for a disaster or manage a recovery from a disaster.

Vernacular resources may not be listed individually on a local historic register or the National Register of Historic Places, and therefore not formally recognized as significant. They could then be easily overlooked by professionals executing disaster

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recovery who are not trained in historic preservation, and even by preservation professionals themselves with the lack of administrative integrity for this type of resource. These resources, though fragile, are extremely important in the recovery of a place after a disaster. Each small component of a historic district, landscape, or cultural landscape contributes to the sense of a place as an ensemble, and the loss of any component, no matter how small or seemingly insignificant, has a negative effect on the character of the place.

The thesis begins by discussing general definitions of a disaster in Chapter 2 and the importance of cultural resources in the rebuilding process. This chapter explains the vulnerability of cultural resources post-disaster, especially the vulnerabilities of vernacular architecture and neighborhoods, then identifies research gaps in disaster studies and cultural resource management. Chapter 3 theorizes about factors that influence the recovery of places after disasters, specifically the application of broad disaster preparedness and response theories to planning, preservation, and architecture. It uses examples from historical disasters to examine these factors and how they relate to preservation specifically.

Chapter 4 outlines basic disaster management principles and discusses the history of disaster policy and preservation policy in the United States and how the two fields overlap under current policies. Chapter 5 examines the role of federal agencies such as FEMA and the Advisory Council on Historic Preservation in disaster management, and additionally explores the role of national non-governmental organizations such as the National Trust for Historic Preservation and the American Planning Association in disasters. Chapter 6 outlines the role of state and local governments and organizations. It uses Hurricane Katrina as an example to emphasize

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the close relationships among federal, state, and local entities that are necessary in the disaster management process.

The last chapter of the thesis draws conclusions on the integration of disaster management and historic preservation and suggests topics for further research. Perhaps the most important conclusion of the research is that the response to a disaster and its negative effects on cultural resources such as vernacular architecture are vastly improved by adequate and systematic preparation for such events. The lack of a response plan can be deadly for cultural resources, and therefore the collective memory, history, and culture of communities. The individual and social fabric and life of a place is already disrupted by the event of a disaster, and the loss of historic resources can compound the loss and make it more devastating. Conversely the preservation of cultural resources post-disaster can provide comfort and assist in the mental and emotional recovery of a population. Preservationists do not automatically include disaster preparedness in their everyday efforts to care for cultural resources such as buildings, districts, and landscapes. However, as preservation or maintenance work is done, the disaster hazards, risks, and vulnerabilities should be evaluated and mitigation actions taken.

A significant problem in the disaster recovery process is not only that preservationists do not consider disasters, but also that disaster managers do not automatically include historic preservation considerations in their efforts. Many are unaware of the negative effects that the loss of historic fabric has on places. Even professionals in the fields of planning and architecture, which are closely related to preservation, in many cases do not include preservation in their disaster planning or rebuilding efforts. Decisions that are made immediately following a disaster (during the short-term recovery phase) can needlessly destroy historic fabric and cultural resources.

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Such destruction is not reversible, and decisions about what to save and what to demolish should be given adequate consideration before action is taken. Preservation professionals should be involved early in the recovery process in order to include cultural resources in the options for the future of the place.

These conclusions were reached through an examination of current federal disaster and preservation policies. Additionally, national, state, and local preservation and disaster organizations were studied for their overlapping roles in the treatment of cultural resources with respect to disasters. This thesis answers the basic question of how preservation and disaster policy and organizations overlap, but raises many more questions for the future as both professions struggle with the recovery of the Gulf Coast after Hurricane Katrina, and will undoubtedly experience many more devastating disasters in the future.



## CHAPTER 2

### DISASTERS AND CULTURAL RESOURCES

*The Inevitability of Disasters and Destruction*

The word “disaster” is defined by the Encarta Dictionary as “an event that causes serious loss, destruction, hardship, unhappiness, or death.” Another more specific definition of disaster was written by Charles Fritz, a pioneer in social science disaster studies, in 1961:

...an event, concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of a society, undergoes severe danger and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented. (Fritz 1961, 655, as stated in Mileti 1999, 210)

These two definitions encompass both man-made and natural disasters including hurricanes, war, floods, civil disturbances and riots, nuclear accidents, landslides, economic depression or disinvestment, plane crashes, and even some urban renewal projects. In a more basic sense, a disaster is an event that causes destruction to the built environment—the places in which humans live, work, and recreate. Just as quickly as people build roads, buildings, and parks, there are forces such as wind, hail, economics, and political conflicts that destroy them. These forces are inevitable, and because of the pain that they cause, people will always study them and work to prevent them and mitigate their damage. Carl Nelson states this inevitability succinctly: “the question is not if, but when and where, disaster will strike next” (Nelson 1991, 36).

*The Importance of Cultural Resources Post-Disaster*

Disasters that change our built environment are traumatic. For thousands of years, humans have chosen to settle the world in patterns, creating meaning in the built environment of our inhabited places (Atkin and Rykwert 2005, 1). Because of these

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established meanings, when a disaster occurs and changes our immediate surroundings, it devastates not only the physical fabric of the place, but also the meaning of the place, and therefore our sense of belonging and meaning. The FEMA guide, *Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning*, states, “Whether a disaster impacts a major community museum, a historic ‘main street,’ or collections of family photographs, the sudden loss of historic properties and cultural resources can negatively impact a community's character and economy, and can affect the overall ability of the community to recover from a disaster event” (FEMA 2005, 1).

The negative impacts of a disaster on culture and character mentioned above are difficult to define. In the aftermath of a disaster, people naturally look for remnants of the familiar in order to cope with unexpected trauma. For example, the realization that a beloved landmark was destroyed can add to the pain of the disaster, and conversely, the realization that a landmark was spared can add hope to the recovery process. Post-disaster, the material objects that remain can be vehicles of recovery and can help restore stability where it has been shattered. Historic preservationists, as cultural resource professionals, are trained to work with the public to help determine value and significance in the built environment, and therefore can be invaluable in allocating resources in the rebuilding process as well as providing advice to the public on methods of repair to historic buildings and landscapes that will preserve as much of the meaning of the place as possible.

The scope of the field of historic preservation has evolved and broadened over time from focusing on simply preserving specific buildings and historic districts to studying and preserving landscapes and cultural landscapes as well. Cultural landscapes are composed of the connections between elements of the built environment

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such as vernacular architecture, streetscapes, small businesses, and open space and the memories and history attached to the built environment. Cultural landscapes recognize the present “working landscapes” that represent continuity and evolution of human interaction with the land. This newer, broader scope of preservation directly applies to disaster management, as preservationists today are not only interested in preserving or rebuilding individual buildings that are damaged in events such as fires, but also facilitating preservation of landscapes and cultural landscapes that may be damaged by larger-scale disasters such as flooding, forest fires, earthquakes, and tornados. In the case of Hurricane Katrina in New Orleans, elements of the built environment such as levees and canals are themselves important components of the cultural landscape, as they were the components of the built environment that failed and caused much of the flooding disaster.

Memories and history attach meaning to landscapes and are much more difficult to assess and repair post-disaster than the wood or bricks of a particular building. Materials can be replaced, and costs can be estimated for a certain type of repair to a building, but it is difficult to attach a monetary replacement value to a beautiful tree or a house that is significant because a prominent person lived there. However, preserving or restoring elements of the physical built environment can help to preserve the memories and history of a cultural landscape; the restoration of the physical remains can be an asset in the emotional and social recovery process. Therefore policy dealing with culture is necessary post-disaster.

### *Research Gaps in Disaster Studies and Cultural Resource Management*

Disasters are an urgent public issue, and with their frequent occurrence, one might expect that disaster preparedness and recovery has been widely studied. In some



areas of research, this is true. The field of disaster studies is a specialty to which entire professional degrees in social fields are devoted<sup>1</sup>. The volumes and articles which have been written on the topic fill libraries. It is a multi-disciplinary field that involves researchers and practitioners in fields including ecology, geology, geography, history, engineering, architecture, planning, psychology, sociology, medical administration, economics, and government policy, as well as many other specialties.

There are generally two approaches to disaster research. The first is research on the different natural hazards that exist on the earth such as volcano eruptions, earthquakes, or hurricanes. This type of research is generally performed by physical scientists such as geologists, meteorologists, and geographers. It includes projects such as analyzing a particular place for its inherent hazards, or determining the probability of a certain type of disaster occurring in a particular place, such as the probability that an earthquake of a certain magnitude will occur in northern California within a certain number of years. The second type of disaster research is focused on emergency preparedness, response, and recovery and is most often studied by social scientists. An example of this type of research is measuring housing loss after a disaster and developing policies for restoring housing to a disaster-devastated area (Tierney 2001, 22-3).

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<sup>1</sup> Numerous colleges and universities across the country offer bachelors and masters degrees in fields such as Emergency, Crisis, and Disaster Management and Homeland Security. The University of North Carolina offers a curriculum in "Community Preparedness and Disaster Management" with a certificate program and plans for Associates, Bachelor's, and Masters degrees in Disaster Management. George Washington University offers a Master of Science in Engineering Management and Systems Engineering with a concentration in Crisis, Emergency and Risk Management as well as a Graduate Certificate in Homeland Security Emergency Preparedness and Response and Emergency Management and Public Health. For a complete listing of colleges, universities, and institutions offering Emergency Management courses, see FEMA's "Emergency Management Institute" website: <http://www.training.fema.gov/emiweb/edu/collegelist/>

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There are multiple intersections between disaster study and physical design, which includes the fields of architecture, landscape architecture, city planning, and historic preservation. Planners approach the field of disaster study from the standpoint of long-term sustainability. They work on planning cities to be more resistant to disasters by identifying hazards such as flood plains or earthquake faults, and planning uses for these geographical features such as parks or open space that would sustain less damage than housing or commercial buildings in the event of a disaster. Architects and engineers study methods of designing or retrofitting buildings to be disaster resistant. They are constantly devising new methods of flood-proofing buildings and making them more resistant to the forces of earthquakes, for example. In the disaster recovery phase, planners, architects, and preservationists are essential in assessing damage and advising property owners as well as public officials on rebuilding efforts.

This thesis studies the intersections of disasters and design by researching historic preservation, planning, and disaster policies, analyzing their application in past disasters, and applying the current policies to current disasters. It places specific emphasis on the relationships between disaster managers and planners, preservationists, and designers, in order to bridge gaps between different disciplines and hopefully promote better communication and coordination among the professionals, stakeholders, and leaders all involved in the messy disaster preparation and recovery process.

In the field of historic preservation, there are some specific areas of study related to disaster planning and response that have been widely researched and published, and others that have not. There are publications on the management of historic sites such as museums, but not on disaster management and historic districts or cultural landscapes. Historic preservation has some roots in and therefore strong connections to the fields of

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museum studies and conservation of objects. As a result, there are numerous articles and books published by organizations such as the Getty Conservation Institute describing the process of disaster preparation and response for managers of museums or historical sites. Objects and buildings can be quickly damaged or even eliminated by events such as fire and floods; they are particularly prone to loss of value due to these disasters. Therefore, great measures are taken to protect museum objects such as fire suppression systems, fire detection systems, and elaborate disaster preparedness plans and training. There is also published research on the treatment of individual buildings with respect to disasters. Books and articles have been written on methods for refitting buildings to make them more resistant to the forces of earthquakes or floods.

There has been far less research, however, on larger geographic areas of cultural resources such as historic districts, landscapes, and cultural landscapes. One possible reason for this lack of research is that historic districts have no designated historic preservation manager or caretaker. Historic districts have been a focus of preservation for decades, but after an area is designated a National Historic District there is no requirement in federal policy for the district to be managed or maintained. This problem of a lack of administrative integrity for certain types of cultural resources means that there is less focus on them with respect to preservation research.

It is much easier for preservationists, and the public in general, to identify landmark architecture as a priority in rebuilding and focus resources on this type of cultural resource rather than historic districts. The decisions of what to save, what to rebuild, and what to demolish after a disaster depend on many factors such as economics, extent of damage, and material and cultural value. The highly valued landmarks of a settlement are almost always recognized as a priority for rebuilding. The rebuilding of such landmarks serves as a symbol to all that even after a disaster, the

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place remains, and the people also persevere. However, in addition to damage to major individual landmarks, damage to other parts of the familiar environment of local neighborhoods, or the destruction of all or part of the ensemble such neighborhoods represent, can be just as devastating. This is an important intersection between historic preservation, especially preservation planning, and disaster studies, and one on which only limited study has been focused.

### *The Vulnerability of Cultural Resources Post-Disaster*

There are certain forms in our built environment that are more vulnerable to the forces of a disaster than others. Some types of buildings are stronger than others in withstanding disaster forces. Large, public buildings that are constructed of high quality masonry and/or steel usually fare much better than smaller vernacular buildings that are of light masonry or timber-framed construction. Additionally, the pre-disaster condition or maintenance of the building is a factor in how well it fares during the disaster; those that are occupied and in relatively good repair prior to a disaster can withstand stronger forces than buildings that were abandoned and/or in poor condition prior to a disaster. Also, landscapes and vegetation are particularly susceptible to damage or destruction by wind or flooding; many species of trees and vegetation do not fare well under strong forces such as high winds and flooding. Landscapes also can take much more time to restore than a building; 100-year old live oaks take 100 years to grow to the size that they were prior to a disaster.

Historic districts and cultural landscapes are assets that are extremely vulnerable to damage in disaster events. They are typically composed of many elements and may be in various states of repair. They are generally more vernacular cultural resources that are constructed of lighter materials. They are generally privately owned, in contrast to

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larger public buildings such as libraries or schools, and their maintenance is subject to the income level and/or skill of the owner. In many cases individual public buildings such as courthouses are much better maintained than historic districts that contain many abandoned buildings and are inhabited by lower-income residents. It is quite common that destruction is distributed unevenly in a community; neighborhoods that are older or in states of disrepair or that serve lower-income residents and business owners may suffer disproportionately higher losses (Schwab *et al.* 1998, 89). Also, trees and vegetation are character-defining features in some historic districts as well as certain other landscape elements such as rows of streetlights or benches. These types of elements are particularly susceptible to wind and flood damage and are difficult to replace, once lost.

Administrative integrity, again, is another reason that historic districts are vulnerable to damage and/or loss post-disaster. When no agency or person is specifically designated to care for a district, individual property owners conduct their own post-disaster assessments, make their own decisions about what to demolish and what to keep, and consequently, integrity of the district could be lost. One other vulnerability of historic districts post-disaster is the inevitable tension that exists between historic preservation and rebuilding. People want to return order to a disorderly place and return their lives to “normal” after a disaster as quickly as possible, and it takes time for preservationists to evaluate significance and time for planners and public officials to work with the public to determine priorities and a vision for rebuilding. It is difficult for planning and preservation to be effective when they are forced into being reactive. They are by nature careful and analytic professions. In the absence of a well-thought-out pre-disaster recovery plan, preservation and planning, when forced by circumstance into reactive stances, can be seen as obstacles to rebuilding.

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In addition, government agencies often put deadlines on monetary grants for demolition or repair, which force property owners to make decisions very quickly on whether and/or how to rebuild. Decisions can be made early in the recovery process that destroy cultural resources and severely limit future decisions about the character of the place. Consequently, the very thing that can restore continuity and structure to people's lives—the stability of the surrounding cultural resources and environment—is in grave danger of being unnecessarily lost.

In his 1999 book, *Disasters by Design*, Dennis Mileti makes this point about post-disaster planning which is directly related to preservation:

After disasters, critical policy choices emerge, forcing unwelcome decisions on local government about whether to rebuild quickly or safely. Postdisaster recovery and reconstruction planning and management commonly reflect an effort to balance certain ideal objectives with reality. Recovery is characterized by wanting to (1) rapidly return to normal, (2) increase safety, and (3) improve the community...Real decisions are likely to be severely limited by economic pressure and pressure to decide quickly. The pressures to restore normalcy in response to victims' needs and desires are so strong that safety and community improvement goals—modifying land use, retrofitting damaged buildings, creating new parks, or widening existing streets—are often compromised or abandoned. (Mileti 1999, 233)

Therefore, it is important to identify very early in the rebuilding process, or even earlier in pre-disaster planning, which physical material resources have cultural meaning in a community. This can help prevent rapid decisions that in the long run can be more harmful to the recovery and rebuilding efforts. Many places do this in the form of comprehensive preservation plans or dedicated campaigns to evaluate the cultural resources of the place. Some places value preservation more and put more resources into such an evaluation. Others do not, and after a disaster when decisions must be made quickly, there is often not enough time for a thoughtful evaluation of cultural resources.

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## CHAPTER 3

### FACTORS IN DISASTER RECOVERY

Several factors that are either directly or indirectly related to preservation, planning, and architecture influence how and how quickly a place recovers after a disaster:

- Type of disaster and scale of destruction
- Nature of place affected
- Type or quality of leadership
- Amount of planning and training pre-disaster
- Sustainability of the place

These factors are described below in general disaster management terms, and also specifically with respect to planning, preservation, and architecture.

It is difficult, if not impossible, to quantify whether a particular recovery action is “successful” in the rebuilding process. For many disciplines, success must be measured quantitatively. This is an inherent problem in disaster studies; different professions, let alone different people, have different ideas of the best way to return lives to normal following a disaster, and therefore have different definitions of disaster “recovery.” Additionally, different types of people use different timelines to measure post-disaster recovery; some types of recovery are accomplished much more quickly than others. For example, in some cases it is possible to rebuild an individual building much faster than rebuilding a shattered economy. Success in cultural recovery can be measured in terms of economic recovery, psychological recovery, the vibrancy of a neighborhood, or the physical rebuilding of fabric in buildings or roads. Another problem in studying the effects of actions in disaster recovery is that disaster losses tend to be quantified in monetary units, but there are many types of losses that are not monetarily quantifiable. Examples are the loss of a human life, the loss of a beach, unrecoverable time for children in school, or psychological trauma (Pielke and Pielke 1997, 135). Loss of cultural



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resources is another type of loss that is difficult to measure in monetary units. The loss of an historic building cannot be quantified by its tax assessed value prior to a disaster; an historic building has more value than just the money in its materials. The loss of an entire neighborhood and the physical and social patterns it embodies is another significant intangible loss.

One measure of “recovery” after disasters that is specific to historic preservation is the rebuilding/restoration of cultural resources such as buildings. Another additional goal is the successful preservation of as much pre-disaster character as possible, whether this be the preservation of character-defining architectural elements or landscape elements or even character-defining uses such as restoring corner stores to corner store buildings or residents to residential buildings. Another guiding principle for preservationists is that change cannot, and should not, be prevented, but only managed. Part of managing the change that is inherent in disasters is rebuilding neighborhoods while allowing the disaster to become a part of the collective memory of the place. This can be done by memorializing the event in some formal way, such as constructing a dedicated memorial, or memorializing the event simply by preserving the clues and cues of the rebuilt environment such as newer buildings interspersed with older buildings.

Memorials for more somber events such as war, slavery, or natural disasters take many forms, but the presence of a physical memorial in any form can be the vehicle or medium that connects the present and future to the past events that have helped to shape our culture. Natural disasters are important events in history, and memorials to these events can reinforce that significance. Therefore in historic preservation, “cultural success” following a disaster can perhaps be defined as not only the retention of as many cultural resources (such as buildings or museums) as possible, but the management of the changes in the historic built environment in order to facilitate the

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healing process of its residents. During this process the disaster becomes part of the collective memory; rebuilding does not obliterate it, but merely adds another layer to memory.

*Type of disaster and scale of destruction*

A somewhat obvious factor in the recovery of places is the type and scale of the disaster. There are many different types of disasters. In general they can be categorized as either those caused by natural hazards or events (volcanic eruptions, tornados, and earthquakes, for example), those caused by deliberate acts such as war, terrorism, or property neglect, or disasters caused by accidents such as plane crashes or technological disasters like chemical spills or nuclear accidents. In general, natural events such as hurricanes that affect uninhabited areas are not considered human disasters even though they can be considered a “disaster” to the natural landscape of vegetation or animals. For the purposes of this thesis, a disaster is defined as a collision of an event with people, or with people’s property; certainly disasters such as hurricanes that damage ecosystems but not inhabited areas are still disasters, but will not be addressed here.

In general, people react to damage to their built environment somewhat differently based on whether the damage was due to a purely natural event or whether it was a deliberate or man-made cause. In some types of disasters such as war or other political conflicts, landmarks in the built environment are deliberately destroyed in order to cause emotional devastation; there is a specific meaning in the destruction. There are numerous examples of this throughout time ranging from the razing of the ancient city of Carthage to the destruction of the World Trade Center in New York in 2001 to the bombing of an important Shiite mosque in Iraq in 2006. In these cases, people as a part

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of the grieving process experience strong feelings of anger and hostility towards other people. In order to make statements of societal or political resiliency there is a tendency to rebuild an area quickly as well as “bigger and better” than it was before the disaster. In the case of intentional acts, people want to create meaning in the rebuilding process, which can result in a transformation of place. Such was the case in several European cities after the world wars in the early to mid-twentieth century such as Rotterdam and Plymouth, England. Additionally, places that are rebuilt almost as exact replicas also transform place. Warsaw, Poland was such an example after the destruction of World War II. Even in places that have been completely rebuilt in a new form, there are examples of certain iconic reminders of the disaster being retained. The city of Plymouth stabilized and preserved the bombed-out shell of a church as a reminder of the devastation of the bombings. A church in Delaware preserved its charred keystone when the entire structure had to be rebuilt following a devastating fire. Hiroshima, Japan, has preserved reminders of the devastation of an atomic bomb, while rebuilding the city.

Another effect of deliberate events such as terrorist attacks or war is that national support is stirred; the terrorist attacks of September 11, 2001 were seen not as an attack against New Yorkers, but an attack on the United States, and therefore national aid flowed into the city for the recovery and rebuilding efforts, though the effectiveness of this large-scale response remains to be seen. In contrast, disasters such as the Exxon oil spill in Alaska were seen as a result of negligence or human error on the part of Exxon personnel, and therefore economic and environmental cleanup was mostly seen as the responsibility of Exxon.

The categorizing of disasters is more difficult when damage is caused by a combination of natural hazards and man-made vulnerabilities. In many cases, disasters expose human inadequacies or deficiencies in design or engineering. The damage to

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New Orleans after Hurricane Katrina is one example where damage was seemingly initiated by a natural event (Hurricane Katrina), but then flooding was actually caused by human mismanagement of the maintenance of the levee system. The hurricane did cause high storm surges, but then these storm surges rushed up canals and exposed levees to extreme forces. The levees were poorly-maintained, and were breached, causing most of the serious flooding in New Orleans. Therefore the damage was caused by a combination of the natural hazard of storm surges and the man-made vulnerability of poorly-maintained, and perhaps even poorly designed and constructed levees. In the case of Katrina, millions of dollars of aid have been sent to the Gulf Coast, however many residents still do not have the ability to return to their houses and lives. When aid is poorly managed after a disaster, even millions of dollars may not get residents the relief they need.

One last comparison in how the type of event affects the type of preparedness and response is the comparison between events that are expected (such as some types of natural disasters like flooding in a river floodplain), and events that are unpredictable (such as some acts of terrorism). It is very difficult if not impossible to predict where terrorist acts will occur, and therefore more difficult to plan and mitigate such events. It is somewhat easier to plan for natural disasters such as flooding and hurricanes that are relatively predictable.

#### *Nature of place affected*

Factors that affect the disaster planning and recovery of a place are its size (area as well as population density) and its economy. Disasters affect rural areas and urban centers in very different ways. Relocation from smaller places has more obvious and apparent impact; the town of Valmeyer, Illinois almost completely relocated to higher

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ground when it was flooded by the Mississippi River in 1993. Population centers with hundreds of thousands, or millions of people in some ways seem to withstand disasters like flooding more easily and have less of a tendency to completely relocate. Therefore in general larger settlements seem to be more able to absorb large-scale disasters, or be more disaster-resilient than smaller settlements.

The state of the economy in a place pre-disaster also has large implications for how and how quickly the place will recover. Places with healthy economies will in general recover more quickly, and in the same or similar form that they were before the disaster, than places that were in economic decline prior to the disaster. The cities of London and Chicago both experienced large-scale fires (in 1666 and 1871, respectively) that destroyed large portions of their urban fabric. Both cities were experiencing economic stability or growth, and both cities rebuilt quickly, maintaining in large part their pre-disaster grids of streets and blocks, but transforming their identities while simultaneously absorbing the disaster into their perspective sense of place.

Certain places chose to capitalize on widespread destruction as an opportunity to make large-scale changes in the built environment. The cities of London and Chicago are also examples of this; although they retained their basic street grids, they took the opportunity to create enormously ambitious rebuilding plans, overhauled their architectural vocabularies and, and presented themselves as cities transformed. These types of transforming decisions are also made in either smaller settlements such as Valmeyer, or in places that were in economic decline such as Plymouth, England. Following massively destructive World War II blitzes in 1940-1, the city of Plymouth chose to demolish large portions of its medieval, crowded, and unsanitary working-class neighborhoods in order to construct a grand, axial commercial center containing modern, wide boulevards and streets.

*Type or quality of leadership*

The way a place rebuilds after a disaster is directly related to the quality of leadership in the rebuilding process. Some places have very strong governmental leaders who are able to take charge in a crisis situation and effect swift recoveries. An example of strong leadership following a disaster is the mayor's role in the rebuilding of Kobe, Japan after a devastating earthquake in 1994. Kobe mayor, Kazutoshi Sasayama made an immediate decision to institute a moratorium on rebuilding in order to accomplish extensive city planning. This decision meant that residents were displaced for years, but Sasayama's insistence on creating open space to protect buildings from future earthquakes and fires was a long-term success for the city. This type of strong, and in some ways unpopular, decision-making by governmental leaders worked in Japan, where government is more authoritarian than in the United States. In contrast, New Orleans Mayor Ray Nagin has not made strong decisions about the planning and rebuilding of the city; these decisions can be extremely unpopular with residents who are displaced and want to return to their homes as soon as possible—and who vote in mayoral elections.

In order to have good leadership, there must be of course not only good leaders, but also a high level of trust between leaders and the people they lead. This can be called the quality or nature of the "followership." If people have a high opinion of their leaders prior to a disaster and trust in their decision-making abilities, they will be able to trust these same leaders after a disaster to make good decisions. The decisions of these leaders will not be questioned as much and will therefore be much more effective than those of a leader who had low approval before a disaster. In that case, the leader's decisions will be questioned and therefore the recovery process may be slowed.

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Leadership does not have to be in the form of an individual governmental leader. Post-disaster, city, state, and federal officials are immediately, and rightly so, concerned with the rescue and recovery of the lives of their residents and restoring public services as soon as possible. Even strong leaders may not be able to handle the large-scale response process as well as be able to simultaneously evaluate these decisions with respect to long-term recovery. In these cases, or in the case of weak governmental leadership, other people can fill leadership voids. These people can be leaders of civic groups, neighborhood associations, spiritual leaders, educational leaders, or for the purposes of this thesis, leaders in planning, preservation, or architecture.

In Charleston, South Carolina following Hurricane Hugo in 1989, Charles Chase, the city's preservation officer, led the recovery efforts at the request of the mayor and managed an immediate and effective restoration for Charleston's preservation-minded property owners (Nelson 1991, 43). In Chase's own words, "The basis for Charleston's recovery effort and its ability to work effectively with property owners, insurance adjusters, architects, and contractors grew out of a long-standing, indeed institutionalized, knowledge of the city's resources" (Chase 2005, 13). Charleston had good historic preservation administrative integrity prior to the storm, and this integrity led to an effective rebuilding process. Leadership roles in historic preservation efforts following disasters can be filled by people other than preservationists. When administrative integrity for managing cultural resources is compromised after a disaster (or did not even exist prior to a disaster in the case of many historic districts), neighborhood groups and/or individuals can be preservation managers.

Clearly a network of leadership is essential in the case of a lack of governmental leadership, or even to supplement effective leadership. A collaborative leadership network was established in New York following the 2001 attacks on the World Trade

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Center. The Regional Plan Association of New York, New Jersey, and Connecticut immediately established a coalition of planning and design professionals, community advocates, union representatives, and public officials to guide the rebuilding process while city's leaders were overwhelmed with the immediate response to the disaster (Regional Plan Association 2005, 3). This network was quite successful in initiating quick post-disaster planning for a region in crisis, which is very important in a field such as planning that in normal circumstances takes time and adequate consideration in order to be accomplished successfully. Post-disaster, planning efforts need to be jump-started, and RPA was successful in that way. Unfortunately, in the longer-term however, the plans initiated by the RPA coalition have been stalled by disagreements among political figures and the private developer who owned the rights to develop the land.

An example of an institution taking a leadership position after a disaster was the leadership of Tulane University in New Orleans following Hurricane Katrina. Tulane officials made the decision to re-open the University in January of 2006, just four months after the devastation of Katrina. They made this decision while the city officials languished over recovery efforts and deliberated for months about how the city would begin the rebuilding process. Tulane University did reopen in January as planned, bringing back thousands of college students to an otherwise nearly deserted city.

Unity is very important in rebuilding, and unity in decisions can be promoted by good leadership. In places that are vastly divided—racially, socially, economically—rebuilding is more difficult and takes longer to achieve. In some places, the actual event of the disaster can unite people who were previously divided. Such was the case in NYC where the terrorist attacks were a uniting force for New Yorkers. In contrast, the people of New Orleans were quite divided prior to the flooding, and therefore it has been difficult to make unified decisions of how to proceed with the rebuilding efforts.



*Amount of planning and training pre-disaster*

There is no question that the amount of planning and training accomplished prior to a disaster has a great effect on how the place recovers after a disaster. Places that are subject to repetitive hazards such as hurricanes in general have better preparedness plans and training than places that are not considered to be hazard-prone. Key West, Florida experiences tropical storms and hurricanes on a regular basis. The town contains significant cultural resources such as the National Historic Landmark Ernest Hemingway House, National Register Truman White House, and two distinctive, historic residential districts. Because of Key West's vulnerability for hurricanes, caretakers of the designated cultural resources are familiar with hurricane preparedness actions like installing hurricane shutters. Residential property owners are also familiar with ways to protect their homes from hurricane damage. Hurricanes are an accepted risk of living in the Florida Keys, and people plan and prepare for storms, reducing the damage that hurricanes can do. Planning in places that are hazard-prone can be accomplished by pre-disaster mitigation plans, or by post-disaster recovery plans that include mitigation for future disasters. It is quite common for municipalities that experience disasters less often to avoid accomplishing disaster planning or mitigation until after a disaster occurs. Unfortunately it only takes one disaster to devastate cultural resources; it is always important for places to plan. It is also important for places to include cultural resources in their disaster planning.

*Sustainability of the place*

A recent trend in disaster studies is mitigation through promoting sustainable ideas in development and design of populated places. This is more directly applicable to

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places that are vulnerable to natural hazards rather than political conflicts or deliberate events. Certain places have natural hazards that are beyond the control of humans; there is obvious risk associated with settling and building in these places. Current disaster theory as well as theories in planning and architecture state that humans create vulnerabilities in the places and the methods in which we build. With advances in the nineteenth and twentieth centuries in engineering and construction, humans have tried to reduce vulnerabilities by employing sophisticated engineering techniques. The levees in New Orleans are a perfect example of huge engineering feats necessary to protect settlements from natural hazards. A more recent theory in designing settlements, however, is to design with knowledge of hazards, or designing our built environment to be in harmony with nature instead of overcoming it. Mileti writes in *Disasters by Design* that land-use planning which keeps people and property out of the way of natural disasters, maintains the mitigative qualities of natural environmental systems, and designs development to be resilient in the face of natural forces creates a much more sustainable built environment (Mileti 1999, 156).

When places experience a disaster, they rebuild in a variety of more—or less—sustainable ways. On one extreme are places that decide to completely relocate in order to eliminate the hazard. An example is the town of Valmeyer, Illinois which moved almost its entire town to higher ground after the Midwest floods of 1993. Some places choose to rebuild in the same place, but by using different materials and/or different design and building techniques, vulnerabilities can be reduced (mitigation). An example of this is the rebuilding that took place after the Chicago fire of 1881. In order to prevent future damage from widespread fires, streets were widened, buildings were designed differently, and masonry and metal construction were used more than timber. These different materials and methods made Chicago a much more sustainable city with

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respect to the hazard of fire. At the other extreme are places that decide to rebuild in the same places with the same levels of protection, or the same building typologies and materials; here there is a complete absence of mitigation or sustainability.

This trend towards sustainability in disaster management is yet another threat to cultural resources, as many important cultural resources were designed and built in times where attitudes in construction were of overcoming nature and natural disasters rather than designing with respect to natural landscapes and forces. Because some cultural resources are no longer sustainable with respect to current trends in disaster management, they may be targeted for demolition or relocation, losing or diminishing the historical significance of the resource. An example of this is the Mid-City Historic District in New Orleans. Many of the historic buildings were constructed after 1900, when the formerly swampy area was drained by a pumping system. The area still lies below sea level and is particularly susceptible to flooding; it sustained severe damage during the Hurricane Katrina floods. There are many neighborhoods that are located in unsustainable areas; that is, they will be always susceptible to flooding, but at the time they were built, assurances were made by the federal government about the protection of the area by levees constructed by the Army Corps of Engineers. These neighborhoods were built with the understanding that they would be protected in a time of flooding, but the levees were never built to sustain damage from a very strong hurricane, and additionally, these levees were not kept in good repair, and therefore failed when New Orleans was hit with storm surge from Hurricane Katrina. While preservationists may want to preserve these important vernacular neighborhoods in New Orleans, preservation would only be made practical by massive expenditures for construction and maintenance of levee systems. Many disaster professionals do not

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consider places such as this to be sustainable, and therefore recommend returning the landscape to its more natural existence.

Sustainability in post-disaster recovery is one of the most important trends in the disaster management field today. Taxpayers will not tolerate the huge federal expenditures needed in order to rebuild places multiple times. Disaster managers and preservationists in their own individual fields view sustainability as important, but they define and evaluate it differently. A key definition of “sustainability” was developed by the World Commission on Environment and Development in the late 1980s: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Mileti 1999, 29). The Commission made the point that economics, ecology, and social equity are inseparable with respect to sustainability.

In the 1990s as part of a national assessment on natural and technological hazards and disasters, prominent disaster researcher and sociologist Dennis Mileti defined six principles of sustainable hazards mitigation, which included the issues of quality of life, environmental quality, local resilience to and responsibility for disasters, economic vitality, equity of resources for future generations, and adopting a consensus-building approach to disaster management, starting at the local level (Mileti 1999, 30-35). Preservationists define sustainability as executing preservation policy and methods that can be sustained for the future, and protecting cultural resources for future generations.

Where historic preservation and disaster management cross paths, these definitions must be merged. Disaster managers must redefine their definition of sustainability to include cultural values and cultural resources rather than relying on economic and ecological values. None of the principles of sustainable hazards mitigation in Mileti’s book directly address historic preservation, however several are related, and

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can be better defined to include historic preservation. Quality of life is enhanced by the character of a place. Preservation can contribute to economic vitality; in New Orleans the tourism industry is largely based on the cultural resources of the historic city. Historic preservation is about creating resilience in our cultural resources in both daily life, and with respect to events like disasters. Preservation preserves cultural resources for future generations.

As disaster managers should redefine sustainability to include preservation, preservationists should include disaster considerations in their efforts to increase the sustainability of cultural resources. Both professions need to work together to make recommendations about what to do with damaged historic buildings or landscapes post-disaster. This collaboration will not always be easy. Returning to the example of the Mid-City Historic District in New Orleans, while disaster managers may say that the area is not sustainable because of its low elevation, preservationists may say that New Orleans is not sustainable without its cultural resources, including those located in the Mid-City Historic District. This is perhaps a perfect example of where Mileti's last principle, adopting a consensus-building approach to disaster management starting at the local level, could be applied to determine the best course of action for cultural resources in New Orleans.

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## CHAPTER 4

### PRINCIPLES OF DISASTER MANAGEMENT

### *Definitions*

The design fields of planning, preservation, and architecture may use different definitions of disaster terms than the field of disaster studies, so it is important to define what is meant by certain words. I have quoted the following definitions directly from *The Vulnerability of Cities*, a 2003 book by Dr. Mark Pelling, a leading scholar in the field of disaster risk and public policy (Pelling 2003, 5):

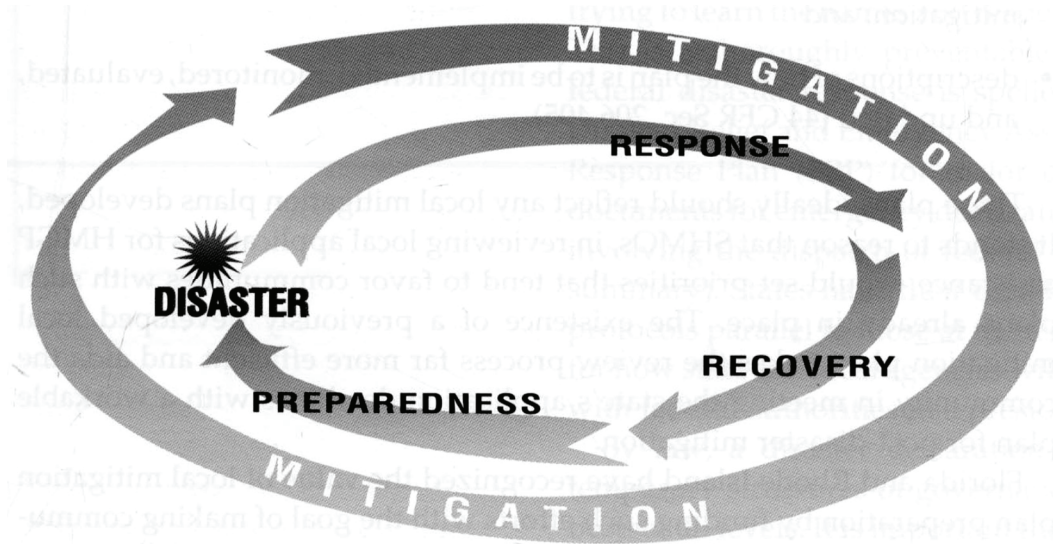
<i>Risk</i>	To be threatened by harm. To be at risk is to be under threat of harm
<i>Hazard</i>	The potential to harm individuals or human systems. In this work, hazard is ascribed to natural, physical, or environmental elements. It can be everyday (scarcity of clean drinking water) or episodic (volcanic eruption)
<i>Vulnerability</i>	Denotes exposure to risk and an inability to avoid or absorb potential harm
<i>Physical vulnerability</i>	Vulnerability in the built environment
<i>Social vulnerability</i>	Vulnerability experienced by people and their social, economic and political systems
<i>Human vulnerability</i>	The combination of physical and social vulnerability
<i>Resilience</i>	The capacity to adjust to threats and mitigate or avoid harm. Resilience can be found in hazard-resistant buildings or adaptive social systems.
<i>Disaster</i>	The outcome of hazard and vulnerability coinciding. Disaster is a state of disruption to systemic functions. Systems operate at a variety of scales, from individuals' biological and psychological constitutions or local socio-economies to urban infrastructure networks and the global political economy

The relationships among these different terms can be complicated. Many places that people choose to inhabit, despite their inherent advantages also have inherent hazards. Earthquakes are a hazard in California, hurricanes are a hazard along the Gulf Coast, and flooding is a hazard in low-lying areas near rivers. By settling these areas, humans take on a certain amount of risk. Identifying vulnerability is a key concept in disaster preparedness; human actions can be taken to reduce certain vulnerabilities. Pelling's definition of disaster, that it is "the outcome of hazard and vulnerability

coinciding,” implies that by either avoiding hazards, or eliminating vulnerability, disasters can be avoided, or at least the damage minimized.

### *The Disaster Cycle*

Disaster management takes place in a continuous cycle as illustrated in Fig. 1 (Schwab *et al.* 1998, 19). It is divided in theory into segments based on the repetitive cycle of the event of a disaster followed by a period of response, followed by recovery and rebuilding, followed by lessons learned and preparation for future disasters, then the event of another disaster. The process of mitigation is continuous throughout the entire cycle.



**Figure 1: The Disaster Cycle**  
(Schwab *et al.* 1998, 19)

Each of these segments, or phases, is not equal in length of time or equal in amount of money and/or resources expended. Additionally, the roles of scientists, professionals, public officials, and the public, the perceived “customer” in the disaster preparedness and response business, are different in each phase. To further complicate matters, in an urban setting more than one disaster can be unfolding at a given time,



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and/or different parts of the city could be experiencing different phases of the disaster cycle (Pelling 2003, 13). For example, one section of a city might be only slightly damaged by a flood, and move through the phases of the cycle quickly, while another section may be severely damaged and progress more slowly. Professionals involved in the process need to understand the different stages of the disaster cycle and the roles that they can or should play in each stage.

The occurrence of a disaster is a benchmark in the cycle. The disaster usually has a defined beginning and end, and is relatively short in duration. In large-scale disasters that are somewhat predictable and that affect places with effective disaster management plans in place, by the time the disaster occurs (with at least some prior notice), the place may be evacuated, and only populated by public safety officials such as police, fire, and engineering personnel to protect municipal functions such as water/sewer services and provide protection/security/rescue services to the community. During the disaster, these personnel can play a large role in the number of lives saved and in the amount of damage incurred or prevented; they can prevent damage by quick-response actions such as assessing damage and covering roofs or repairing damaged water pumps.

The response phase begins during the disaster, or immediately prior to the disaster if possible, and continues for a relatively short period of time. This is a chaotic time for a municipality as services are directed towards rescue efforts, damage control, and quick damage assessments in order to evaluate whether the disaster recovery can be accomplished by the local government, or whether state and/or federal assistance is needed. These actions can play a crucial role in preventing damage to cultural resources. Obviously, the most important actions during a disaster are those that protect and rescue human life, but in prioritizing efforts to save property, public safety officials, if

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trained properly, could focus efforts on areas containing important cultural resources first, then protect other places as resources allow. If improperly trained, or even untrained, these important responders could miss opportunities to protect cultural resources.

The recovery phase is characterized by returning municipal services to residents and businesses, rebuilding, and recovering from psychological wounds. This is a particularly vulnerable time for cultural resources as recovery actions that may be seen as immediate in nature could be implemented without regard or consideration for their effects on cultural resources. The preparedness phase occurs after the more immediate tasks are accomplished. Here the response and recovery can be evaluated for strengths and weaknesses and recommendations made for future disaster preparedness.

As illustrated in the Disaster Cycle diagram (Fig. 1), mitigation is a continuous process of evaluating the effects of many different actions with respect to a disaster, and taking action to reduce the potential negative effects of a future disaster. Mitigation includes identification of risk and vulnerabilities, then taking action to reduce these risks and vulnerabilities. Mitigation is perhaps the most important element of the disaster cycle, and is depicted as a continuous process. Important steps in mitigation occur immediately following a disaster as rebuilding occurs. For example, in an attempt to mitigate damage from a future flood, people may elevate houses as they rebuild, or rebuild in a completely different place. Both of these actions have serious ramifications with respect to historic preservation. Mitigation also occurs in the preparedness phase when research on a particular disaster response is evaluated in order to improve the response process for future disasters. The mitigation phase is also continuous at the national level as professionals research disasters in general, disaster response, and policy in order to improve the response phase. The Federal Emergency Management

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Agency (FEMA) employs specialists in preservation who are continuously researching ways to protect cultural resources, and academics and professionals in the fields of planning, preservation, and architecture are also more recently realizing the importance of including disaster considerations in their fields.

Unfortunately, in many situations mitigation is only executed in the recovery phase; if a place has not been exposed to a recent disaster, mitigation and preparedness may not be a priority. It is very important, however, to continue to emphasize to both public officials as well as preservation and planning professionals the fact that disaster mitigation is a continuous process and should occur at all times in a community. It is vital to rebuild communities in a safe manner so that damage is reduced in future disasters, but it is also essential to think about the effect that day-to-day decisions made by localities have in the event of a future disaster. An example in the planning field is that daily decisions made on development issues have effects on vulnerability of a place. Specifically, there have been explosions in development and population in coastal areas that result in high risk for experiencing hurricanes. When hazardous places are developed, disaster mitigation needs to occur in order to minimize vulnerabilities to hazards.

In this sense, mitigation can be described as “pre-event planning”. This term was used by Dennis Mileti in *Disasters by Design*, in which he argues that the notion of pre-disaster planning for post-event recovery is a relatively new (since approximately the late 1980s) and powerful concept in disaster management (Mileti 1999, 233). This idea creates a particularly important role for preservationists, planners, and architects in not only the post-disaster recovery phase, but the pre-disaster preparedness phase as these professions are directly involved in the physical rebuilding of a place. Platt also defines hazard mitigation as “reducing vulnerability to natural hazards through safer design of

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structures and communities,” which demonstrates the importance of design professionals (Platt 1999, 10).

*Past approaches to disaster policy*

The approaches to disaster preparedness and response can be simply categorized as either reactive (response and recovery in the disaster cycle) or proactive (preparedness and mitigation). In many cases disasters cannot be anticipated, and therefore preparation cannot be accomplished. Situations such as the NYC terrorist attacks are an example. Even though specific terrorist acts cannot be anticipated, prevention does occur in actions such as increasing security at airports and designing of prominent buildings to resist the forces of bombs. However, there are many natural disasters that are predictable because of known natural hazards, and therefore planning and mitigation are both quite possible as well as desirable.

The way that localities prepare for disasters varies widely across geography and also across time. Different geographies require different mitigation strategies; earthquake preparedness is different than planning for flooding. Different periods in history have also treated disaster preparedness and response differently. In the ancient past, disaster mitigation to the extent that it existed was accomplished by either not settling in places that were hazardous, or by completely moving a settlement after a major disaster occurred. The built environment in the past was treated in some ways as more transient than many urban places are in modern centuries. However, there are also numerous examples of beloved places that were protected from disasters and also rebuilt after them. The idea of permanence rather than transience of a place with respect to disasters is described as “resilience” by Lawrence Vale and Thomas Campanella, who organized a colloquium at the Massachusetts Institute of Technology in the spring

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of 2002 entitled “The Resilient City: Trauma, Recovery, and Remembrance.” Resilience was discussed with respect to disasters of all types and cities of all ages, including ancient cities such as Jerusalem and Tokyo and relatively modern cities such as Washington D.C. and Los Angeles in their 2005 book, *The Resilient City*.

In more recent centuries, technological and engineering advances have changed the way that humans occupy the earth, enabling settlement in areas with hazardous potential that may not have been possible in ancient times. In many locations in the modern world, especially within developed and industrialized societies, when settlements are destroyed by disasters, the technological and economic resources can be mobilized to rebuild in the same hazardous place, but with different materials or techniques that can reduce exposure to damage from future natural disasters. Because of the capabilities of such engineering and building technologies, people have settled more widely in hazardous areas, relying on engineering to protect the settlement from the natural hazards inherent in the place.

There are many settlements such as this throughout the world; San Francisco is a place where people accept the high risk of earthquakes and use earthquake-resistant building techniques. New Orleans is another example of such a place, as many parts of the city exist below sea level, and are therefore vulnerable to repetitive flooding from the Mississippi River. In its early, eighteenth-century history, settlement was limited to the higher ground close to the river. In the nineteenth century, as the city grew in population and economic importance, levees were constructed and the Mississippi River was more and more controlled by engineering in order to protect the city from the repeated flooding that had occurred there throughout its history. Additionally, massive pumping systems were built, and swamps were drained and settled.

Such settlement patterns have precipitated changes in the way that governments are involved in disaster preparedness and response. In many situations, the damage incurred by the collision of a large natural disaster with a highly settled place has had great impacts on societies. Disasters in the United States, such as the Galveston flood of 1900, the San Francisco earthquake of 1906, and the damage from Hurricane Katrina in New Orleans in 2005, affected thousands of people and their property. These disasters were of such a magnitude that state and local governments could not effectively handle the response and rebuilding efforts themselves, requiring federal intervention. However, earlier events such as those around the turn of the twentieth century were handled much differently than the disaster in New Orleans in 2005.

*The changing role of the federal government in disaster policy*

The balance between local, state, and federal roles in disaster response has changed in the last century, somewhat paralleling the increasing role of the federal government in other programs. The second half of the twentieth century saw a dramatic shift in the role of the federal government in response to natural disasters. Rutherford H. Platt, in his 1999 book *Disasters and Democracy* (13), defines three eras in federal disaster assistance:

- Early Period (1880s to 1940s) – Negligible or *Ad Hoc* Federal Assistance
- Transitional Period (1950s to 1980s) – Limited Federal Disaster Assistance
- Recent Period (1980s to present) – Abundant Federal Disaster Assistance

The Federal Disaster Relief Act of 1950 (PL 81-875) was a benchmark in federal disaster assistance, intended to standardize federal response to disasters. It placed responsibility of initiating federal involvement with the President instead of with Congress, which in the past had drafted legislation specific to each disaster. Platt likens this increase in federal disaster assistance to the increasing role of the federal

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government in other social programs of the post-war 1940s such as Social Security, farm subsidies, and veterans' benefits (Platt 1999, 9).

Since 1950, legislation such as the Disaster Relief Acts of 1966 (PL 89-769), 1969 (PL 91-79), and 1974 (PL 93-288), and the Disaster Assistance Act 1970 (PL 91-606) steadily expanded the scope of federal disaster assistance. Various disaster aid programs were instituted by this legislation, and were administered by many diverse federal agencies such as the Federal Civil Defense Administration, the Department of Housing and Urban Development, the Small Business Administration, and the Veterans Administration. A presidential Executive Order in 1979 created the Federal Emergency Management Agency (FEMA), which has since consolidated federal disaster management functions under one roof (Schwab *et al.* 1998, 35). None of this legislation, however, directly or even indirectly, addresses the issues of historic preservation and disaster management.

#### *Federal disaster policy reform*

As a result of twentieth-century disaster legislation, federal expenditures for disaster relief increased by staggering amounts in the second half of the twentieth century; \$5 million was expended in the year 1950, \$52 million was spent in 1953, then approximately \$119 billion was disbursed in the 15-year period between 1977 and 1993 (Platt 1999, 23). Criticism of such enormous and growing expenditures, as well as accusations that Presidential Disaster Declarations have been made or withheld for political reasons instead of out of genuine necessity, have precipitated an enormous amount of review and revision of federal disaster policy in the last two decades.

Therefore Platt's recent era of "Abundant Federal Disaster Assistance" from the 1980s to the present can be further defined as "Abundant Federal Disaster Assistance and Policy

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Reform” where federal disaster assistance has shifted from purely post-disaster aid to significant pre-disaster hazard analysis and mitigation programs. There are several changes in disaster policy and management that occurred during the 1980s and 1990s.

The administration of President Clinton responded differently to disaster management and the administration of FEMA than the first Bush administration did in the 1980s. President Clinton appointed James Lee Witt as the director of FEMA in 1993 and elevated the position to cabinet level (Daniels and Daniels 2000, 5 and 13). Also in 1993, FEMA disaster assistance programs were reviewed by the National Performance Review. The National Performance Review report concluded that “FEMA’s basic role should be to serve as the federal government’s coordinator of assistance for state and local governments overwhelmed by disaster, and as a catalyst for development of comprehensive state and local emergency management systems that emphasize loss control and prevention” (Platt 1999, 21-2). Under Director Witt, FEMA underwent administrative and policy changes, and “redirected the direction of disaster focus toward mitigation” (Daniels and Daniels 2000, 5).

Also in the mid-1990s, bi-partisan Congressional task forces were convened to examine the disaster declaration process. The Senate Task Force’s recommendations included the following:

- Establish more explicit and/or stringent criteria for providing federal disaster assistance
- Emphasize hazard mitigation through incentives
- Rely more on insurance (Platt 1999, 21)

Both the Congressional Task Force findings and the overhaul of FEMA led to increased emphasis on preparedness and mitigation in federal disaster policy.

Disaster reform was also significantly influenced by a national assessment of natural hazards research from 1994 to 1999, accomplished with a National Science



Foundation grant and involving over 100 researchers and practitioners who published a series of books on specialized topics including insurance, land use, disaster preparedness, recovery, and response, and a national hazards risk assessment (Mileti 1999, ix). This assessment was the second national assessment of hazards research<sup>1</sup> and was directed by Dennis S. Mileti of the Natural Hazards Research and Applications Information Center, University of Colorado at Boulder (Tierney *et al* 2001, v). Mileti addressed the issue of linking hazards and sustainability, which was determined by the committee to be the unifying theme for the entire assessment. In the forward to his book Mileti wrote:

The single most important contribution that this second assessment has to offer is the recommendation for a fundamental shift in the character of how the nation's citizens, communities, governments, and businesses conduct themselves in relation to the natural environments they occupy. This book calls for and speaks to the specifics required to shift the national culture in ways that would stop at its genesis the ever-increasing spiral of losses from natural and technological hazards and disasters. The task will be to create and install "sustainable hazards mitigation" in the culture of the nation. (Mileti 1999, viii)

This passage summarizes the attitudes present in the 1990s in the reforms of federal disaster management programs. The trend toward sustainability was also emerging in the fields of planning and preservation during the 1990s, and therefore, indirectly, disaster management and preservation overlapped as professionals were searching for ways to make the built environment more sustainable for the future.

Also during this time period two large-scale disasters affected culturally-rich places in the United States—Hurricane Hugo devastated Charleston, South Carolina in 1989, and the Loma Prieta earthquake damaged areas of northern California one month

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<sup>1</sup> The first assessment was completed in 1975. The results were published in a summary volume by geographer Gilbert F. White and sociologist J Eugene Haas entitled *Assessment of Research on Natural Hazards* (Oxford University Press, 1975).

later. These disasters precipitated preservation conferences and publication on the topic of disasters with respect to historic preservation, a topic that had not before been widely studied in the United States.

### *Current federal disaster policy*

All of this emphasis on disaster management study and reform resulted in the current complex web of legislation and policies under which disasters are managed by federal, state, and local governments. The Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (PL 93-288) established cost-sharing requirements between federal, state, and local governments in disaster response, and very importantly provided grants for hazard mitigation efforts and planning. The Stafford Act was amended by the Disaster Mitigation Act of 2000 (PL 106-390), with the express intention “to establish a national disaster hazard mitigation program.” Its main goals are to streamline procedures, reduce costs, and most importantly to give high priority to “mitigation of hazards at the local level.” Section 101(a) of the Disaster Mitigation Act states:

Congress finds that:

- (3) expenditures for postdisaster assistance are increasing without commensurate reductions in the likelihood of future losses from natural disasters; ...
- (5) with a unified effort of economic incentives, awareness and education, technical assistance, and demonstrated Federal support, States and local governments (including Indian tribes) will be able to—
  - (A) form effective community-based partnerships for hazard mitigation purposes;
  - (B) implement effective hazard mitigation measures that reduce the potential damage from natural disasters;
  - (C) ensure continued functionality of critical services;
  - (D) leverage additional non-Federal resources in meeting natural disaster resistance goals; and
  - (E) make commitments to long-term hazard mitigation efforts to be applied to new and existing structures.

This increased emphasis on mitigation is also evident in the National Flood Insurance Reform Act of 1994, the intent of which was to encourage cities and states to implement flood-plain planning in their mitigation efforts. Flood insurance is only available in the United States through this federally-subsidized insurance program, and it is criticized by some as subsidizing bad development practices by enabling development in flood-prone areas (Schwab *et al.* 1998, 35).

Another often-expressed criticism of federal disaster legislation is that it is difficult for local governments, businesses, and residents to navigate the tangled web of federal programs and bureaucracy without assistance. Mileti emphasizes this problem:

Most government efforts to cope with hazards today are fragmented horizontally at each level of government, vertically between levels of government, and across different types of hazards. This dispersal makes it extremely difficult for local governments to deal with hazards in a coherent way. (Mileti 1999, 279)

These conclusions demonstrate a recent and growing trend in disaster policy that the role of the federal government is shifting from doling out post-disaster subsidies to 1), providing support for state and local governments to implement their own programs, and 2), developing regional prototype models of effective and sustainable disaster mitigation. Perhaps the next era in Platt's continuum of federal disaster assistance will therefore be the era of the federal government enabling state and local governments to implement their own disaster management programs. Again, these policies do not directly address historic preservation and planning, but overlap in indirect ways as planners and preservationists are also concerned with sustainability in the built environment.

It should be noted that two important events in federal disaster policy and organization have happened in the last five years. The first change occurred in 2002 with

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the establishment of the Department of Homeland Security; FEMA currently operates under the Secretary of Homeland Security rather than being the stand-alone agency it had been since its inception in 1979. Additional changes have occurred since the 2005 hurricane season, in which the federal government and FEMA directly were criticized for lack of adequate response. Since this time, FEMA has experienced many personnel changes, including its director, and has been under increased public and media scrutiny. It is expected that when analysis of the response from the hurricane season of 2005 is complete, FEMA, and the entire federal disaster response structure will experience yet more administrative and policy changes.

#### *Federal historic preservation policy and disasters*

Concurrent with the increasing role of the federal government in disaster policy, the federal government has also had an increasing role in historic preservation in the second half of the twentieth century. However, the role of historic preservation in disaster management as established in federal policy and law is indirect rather than being inherently stated in disaster policy. There are several ways that this indirect relationship is established. The National Historic Preservation Act of 1966, as amended (NHPA) is a landmark piece of preservation legislation that outlines several tools having an effect on the way that places treat buildings after (and before) a disaster.

The most powerful tool for preservation in disaster management is Section 106 of the NHPA. Section 106 establishes a requirement for “federal agencies to take into account the effects of their undertakings on properties included, or eligible for inclusion, in the National Register of Historic Places” (Preamble to Regulations Amendments, 36 CFR Part 800, Aug. 5, 2004, p. 3). This essentially means that any projects that are undertaken by federal agencies, or funded even in part by federal money, have to

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consider the effects of the project on cultural resources. This requirement for consideration is paralleled in the National Environmental Protection Act of 1969, as amended (NEPA) which requires the federal government to consider its actions with respect to the nation's natural environment. The combination of the steadily increasing federal assistance for disaster recovery and mitigation and the requirements of Section 106 of the NHPA as well as the requirements of the NEPA form an extremely powerful mandate for federal agencies to consider historic preservation as they perform both disaster mitigation and recovery. All disaster relief projects either funded by the federal government or requiring federal licenses or permits that involve buildings or sites that are listed on or eligible for the National Register must go through the Section 106 review process.

The NHPA also established the National Register of Historic Places which introduced formal criteria for evaluating buildings and created a formal list of historic buildings, structures, landscapes, sculpture, and districts. Seen through the eyes of a disaster manager, the National Register can be utilized during or after a disaster as a pre-disaster assessment or prioritization of buildings. This enables quicker post-disaster decisions about applying limited recovery resources to places that were deemed to be culturally significant before a disaster. Many states and municipalities established their own state or local registers for historic resources, as enabled by the NHPA, and these state and local registers can also be useful in disaster preparedness and response efforts.

This Section 106 review process for resources listed on or eligible for the National Register is managed by the State Historic Preservation Offices (SHPO), which were also established as part of the NHPA. These agencies play an extremely important role in disaster recovery; they have the responsibility of managing the cultural resources

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that are listed on the National Register and any state register, including recommendations for designation and Section 106 review. The SHPO and its staff are in many cases the administrative integrity that exists for National Register sites, and are essential members of any post-disaster assessment. Because of the enormous amount of Section 106 reviews that are required after large-scale natural disasters, however, the chronically under funded and overworked SHPO staff can be easily overwhelmed.

The limitation of using the National Register as a tool for evaluating cultural significance is that sites are often designated years, or even decades, prior to the event of a disaster, and there is no requirement in the NHPA for these sites to be re-evaluated for significance. Several of the historic districts in New Orleans were designated in the 1960s and have not been re-evaluated since. Therefore, the resources in the districts may very well have changed drastically in the 40 years between designation and Hurricane Katrina; the National Register listing alone should not be used to evaluate significance and determine priorities for resources in recovery. The same limitation applies to buildings or sites that are individually listed on the National Register rather than being a component of an historic district. An exception is that sites listed as National Historic Landmarks are reviewed on a regular basis, so designation as an NHL does indicate significance and integrity, and these cultural resources should be prioritized during the recovery phase. Another limitation of the historic registers when evaluating significance pre- or post-disaster is that existing registers do not necessarily comprehensively address all historic resources in a geographic area. There may be many other sites or districts not actually listed on any historic register, but deserving of listing.

The NHPA also established the Advisory Council on Historic Preservation (ACHP), with the goal of ensuring that Federal agencies act as responsible stewards of

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our Nation's resources when their actions affect historic properties. With respect to natural disasters, the ACHP is the federal agency that has the overall responsibility of ensuring that historic preservation is considered during the disaster recovery and also the disaster mitigation process. The ACHP has the final word on the treatment of properties that are on or eligible for the National Register, and they are in some ways the enforcement arm of the NHPA. The ACHP is one of the many federal agencies that work together laterally following a disaster to assist in recovery and rebuilding efforts and ensure that federal policy is maintained. The ACHP also works with state historic preservation offices and local preservation agencies to affect preservation, which is especially important when state and local agencies are overwhelmed.

Lastly, the NHPA delegates certain authorities to local governments. It established the "Certified Local Government" program which allows municipalities to receive federal grants and establish partnerships with SHPOs, which can be extremely valuable during disaster planning and recovery. Relationships between federal, state, and local agencies in the disaster management process are extremely important and are discussed in the following two chapters.

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## CHAPTER 5

### FEDERAL AND STATE INITIATIVES



*Federal agencies and disasters*

Different disasters necessitate different responses from local, state, and federal governments. Disasters can be declared at the state or federal level, and each level authorizes response from certain agencies. In many cases, these different levels of government must work closely together in order to affect recovery. This chapter examines the different federal and state agencies that are involved in the disaster management process and their relationships with each other.

The structure of federal response to disasters is delineated in the Stafford Act, as amended by the Disaster Mitigation Act of 2000, and by a document called the National Response Plan (NRP), which was revised under the Department of Homeland Security in 2004. In order to initiate the federal disaster aid mandated in the Stafford Act, the President must issue a Presidential Disaster Declaration. Once the declaration is issued, states have access to federal assistance through FEMA. Assistance is then disbursed to the communities through many different agencies and in many different forms; as many as 26 other federal agencies can be involved in the implementation of the NRP (Schwab *et al.* 1998, 23).

In theory, presidential disaster declarations are issued only in situations where the disaster is of such a magnitude that the state and local governments cannot handle the response themselves. In most disasters, the response and recovery is executed by the states without a Stafford Act Presidential declaration; only about one percent of all natural disasters per year result in Presidential disaster declarations (Schwab *et al.* 1998, 37). In cases where a Presidential disaster declaration is not issued, states can still access federal aid through certain agencies, such as the Department of Housing and Urban Development (HUD), that have specific assistance programs in place that are

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applied to disaster situations. One example is HUD's Community Development Block Grants (CDBG). Here, the overlap with historic preservation is that Section 106 review applies when CDBGs are used to redevelop resources listed on or eligible for the National Register. In fact, Section 106 applies to ALL federal disaster assistance programs, not just those administered by FEMA, and which require a Presidential declaration.

Additionally, states have access to federal disaster planning and mitigation programs at any time, not just after a disaster occurs. Obviously, Section 106 review applies to federal programs for pre-disaster preparedness and mitigation, as well as any federal government assistance in support of a disaster recovery, regardless of whether a Presidential Disaster Declaration is issued or not. Therefore FEMA works closely with state and local governments to accomplish training.

As stated in the previous chapter, federal programs are increasingly focused on disaster preparation and mitigation in an attempt to reduce the amount of aid required in the responses and recovery phases of a major disaster. Therefore an increasing trend in preservation is for Section 106 review of mitigation plans for areas containing districts and/or sites on or eligible for the National Register.

#### *FEMA and Disaster Management of Cultural Resources*

FEMA is the most important federal agency involved with disaster preparedness and response. The FEMA brochure entitled "This is FEMA" lists the goals of the agency as:

- Coordinating federal response to presidentially declared disasters
- Helping residents and businesses recover
- Helping emergency managers and the public prepare for disasters
- Working to reduce future disaster risk
- Administering the National Flood Insurance Program and reducing flood risk

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- Reducing losses due to fire and related emergencies (FEMA 2003)

Analyzing these goals illustrates two points about FEMA. First, FEMA's goals parallel the emerging national trend to focus more and more on mitigation rather than response; only the first two of the six goals address the response/recovery phase of disaster management, and the other four are more directly associated with preparedness and mitigation. And secondly, each of the six goals requires extensive coordination among federal, state, and local governments.

These goals overlap with federal historic preservation goals in several ways. In order to meet them, FEMA has established its "Environmental and Historic Preservation Program, which "assist[s] FEMA staff and non-federal partners to anticipate and accomplish environmental and historic preservation review required by federal laws and executive orders" (FEMA Environmental and Historic Preservation Programs). FEMA's environmental and historic specialists execute Section 106 review for FEMA-funded mitigation or recovery projects. These projects include working with individual homeowners whose homes are listed or eligible for the National Register and also working with public agencies, non-profits, or educational administrators to ensure compliance with Section 106 during the rebuilding process. FEMA's recovery efforts are highly focused on individual buildings and do not directly address the preservation or rebuilding of historic districts, landscapes, or cultural landscapes. These cultural resources are less likely to have an individual or organization responsible for maintenance and decision-making, or administrative integrity. It is certainly a weakness in federal policy that recovery assistance, as well as mitigation assistance is administered primarily on a building to building level, and not at the more broad level of districts or landscapes. The FEMA Environmental and Historic Preservation staff members do also assist communities in mitigation design projects. They aim to retain the

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elements of the community's physical and built environment while making it more resistant to natural hazards. In preparedness and mitigation efforts, FEMA still focuses primarily on individual buildings, but does address preserving character and relationships among individual buildings and landscape elements.

Another very important role of FEMA is to provide resources for state and local governments. As stated above, most disaster events in the United States are handled at the state and local levels; therefore it is essential for state and local agencies to be trained in disaster preparation/mitigation and response. While much of this support and training is focused on social issues and emergency response, FEMA's ten regional offices also work closely with state and local governments to accommodate historic preservation.

One such mitigation effort is the series of "How-to Guides," published by FEMA in the early 2000s. These "How-to Guides" are aimed at educating local governments and individuals on disaster preparedness and response. A specific guide for the treatment of historic property, called "Integrating Historic Property and Cultural Resource Considerations Into Hazard Mitigation Planning" was published in May of 2005. This publication is extremely detailed; it is over 200 pages, and guides local governments, community interest groups, and/or cultural organizations of all sizes and economic means through developing a hazard mitigation plan for their cultural resources. This process has four phases: 1) organize resources, 2) assess risks, 3) develop a mitigation plan, and 4) implement the plan and monitor progress (FEMA 2005, Forward).

In these four steps, local governments learn how to determine which cultural resources are likely to be damaged in a disaster and prioritize the ones that are most important. The guide recommends gathering inventories of cultural resources from various sources including the National Register, planning organizations, and the public,

then overlaying maps of these cultural resources onto maps of hazard areas. This can be done either by simply hand-drawing or by using Geographic Information System (GIS) software. Once historic properties are prioritized for mitigation efforts, potential mitigation actions can be analyzed through benefit-cost analysis. Finally, a mitigation plan can be developed.

A specific application of this process was accomplished in 2002, when FEMA Region III<sup>1</sup> completed a demonstration project to better integrate historic preservation goals into the hazard mitigation process. The results were published in a report entitled “Looking to the Future: alternatives for reducing flood-related damage in historic communities.” This report is illustrative of one of FEMA’s important goals of working with state and local governments to reduce losses in areas that are prone to repetitive disasters such as hurricanes or, in the case of this study, flooding. (United Research Services 2002, PS-1).

The community of Milton, Pennsylvania was chosen as the demonstration location; it is a small town in central Pennsylvania in the floodplain of the Susquehanna River that contains an historic district. Milton has experienced repetitive flooding since it was settled in 1792. The website for the project states the goals of the study:

This study was an important step in collaboration among FEMA Region III staff, the Pennsylvania Emergency Management Agency, the Bureau of Historic Preservation of the Pennsylvania Historical and Museum Commission and the Borough of Milton to determine what mitigative actions could be taken to allow FEMA to meet its strategic goal of reducing the loss of lives and property while minimizing any adverse effects to historic properties.

This study illustrates the interdisciplinary, extremely collaborative efforts required in the mitigation of cultural resources in a community. This particular project was the

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<sup>1</sup> FEMA Region III covers Pennsylvania, West Virginia, Maryland, Delaware, and Virginia.

result of collaboration among federal, state, and local governmental agencies, as well as local interest groups and the public, and was accomplished by the URS Corporation, a large, national engineering and architecture firm with offices that specialize in cultural resource management.

Additional goals are listed in the report as:

- Provide recommendations for streamlining regulatory procedures for federal undertakings affecting historic properties;
- Suggest options for future integration of historic preservation and hazard mitigation land-use planning efforts; and
- Create a template for use by other historic communities in Pennsylvania (United Research Services 2002, PS-1)

The cultural resource specialists from URS accomplished the study in six months by moving through the phases outlined by FEMA and listed above for developing a hazard mitigation plan. Overall, the study is thorough, and analyzes several options for minimizing future damage from flooding such as acquisition and demolition, elevation, relocation, wet and dry floodproofing, and structural flood diversion improvements and stream channel modifications. It applies these options to the cultural resources in Milton and makes recommendations on treatments for different types of cultural resources (URS 2002, 4-1 to 4-9).

Overall, the study is a good application of the principles of hazard mitigation for cultural resources, and accomplishes its goal of serving as a model for other communities to follow. Unfortunately, the process of creating a mitigation plan for cultural resources is quite time-consuming, and requires professional services that may not be available to smaller communities or those with limited budgets. Therefore, rather than accomplishing a dedicated preservation mitigation plan as its own goal, preservation mitigation planning could be accomplished in a more piecemeal way by simultaneously considering disaster mitigation when other preservation efforts are accomplished, or

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considering preservation when general disaster mitigation is accomplished. An example is to consider disaster mitigation during preservation campaigns on buildings, and implement techniques such as floodproofing while other repairs or maintenance are also being done. Another example is for disaster managers who are not trained in preservation to reference the FEMA demonstration study to assist in addressing mitigation for cultural resources when mitigation plans are done for a community.

Both the FEMA guide and the URS study are detailed and informative resources for mitigation of cultural resources. However they are much more focused on buildings as cultural resources, and not as much on districts, landscapes, or cultural landscapes. As discussed in a previous chapter, it is easier to assess the monetary value of buildings than landscapes. Because this method of mitigation planning uses benefit-cost analysis to prioritize assets for mitigation efforts, the monetary value of landscapes is not evaluated, nor is the monetary value of ensembles of historic resources such as districts as a whole. Landscapes and other cultural resources are addressed, however, by including in the mitigation strategies such considerations as using demolition or relocation with extreme care in historic districts (even for demolition of only select buildings) to avoid losing character-defining features of the district such as density, landscaping, orientation, and setback (FEMA 2005, 3-17).

Another suggestion in the FEMA guide is that when elevating buildings above certain flood levels, the surrounding landscape should be properly graded to maintain more of the character and scale of the property. Another landscape/cultural landscape consideration that is discussed in the study is the relationship of the community with the waterfront. Some mitigation actions like constructing levees or floodwalls could drastically change this relationship. Landscape protection from natural hazards is briefly discussed in the study by suggesting options such as sediment and erosion control,

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stream corridor restoration, watershed management, and wetland restoration and preservation. Some landscapes could have monetary value if they are used as recreational or tourism areas (FEMA 2005, 3-22). Certainly all of these considerations are valid, and even though a monetary value cannot be assigned to some character-defining features, they should most definitely be taken into account when analyzing mitigation options.

### *The National Flood Insurance Program and Preservation*

Another program administered by FEMA is the National Flood Insurance Program (NFIP). The 1968 National Flood Insurance Act (NFIA) (PL 90-448, Title XIII) provided subsidized federal flood insurance for flood-plain property owners “in the absence of affordable flood insurance from the private insurance industry” (Platt 1999, 30). Post-disaster, in order for property owners to receive federal grants or loans for repair, they are required to obtain federal flood insurance. Because this insurance program is administered by the federal government, the NHPA requires that historic preservation considerations be taken into account. The NFIA is a complicated piece of legislation that requires property owners and municipalities to adhere to certain standards of flood mitigation in order to receive flood insurance, and also rates communities that exceed the NFIP minimums through the Community Rating System (CRS). The lower the CRS rating (and therefore the better the community’s mitigation level), the greater the reduction that property owners receive in their flood insurance rates. The NFIP also requires that communities develop a floodplain ordinance that “sets standards for construction and rehabilitation of structures located in flood-prone areas” (URS 2002, 1-5).



The very nature of flood mitigation and buildings, however, means that changes must be made to historic buildings in order to qualify them for flood insurance. Some changes, such as raising the buildings to the minimum elevation required by the NFIP, drastically change the historic character of buildings. To encourage property owners of historic structures to maintain historic character, the NFIP waives certain requirements. Communities have the option, through their local floodplain ordinances, to use two different options for historic structures. First, variances may be granted for the “repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure’s continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure” (44 CFR 60.6 (a) (1)). Second, “alteration to an historic structure does not constitute a substantial improvement, provided that the alteration will not preclude the structure’s continued designation as an historic structure” (44 CFR 59.1).

#### *FEMA and SHPOs*

FEMA and the State Historic Preservation Offices have been working much more closely in the last decade in order to incorporate preservation in the disaster management efforts of FEMA. In the 1990s a nationwide model Programmatic Agreement was reached between the National Conference of State Historic Preservation Officers and FEMA. This agreement balances the streamlined FEMA post-disaster assessment process by requiring preservation to be factored into disaster recovery efforts (URS 2002, 1-5). These programmatic agreements delineate responsibilities of FEMA and the SHPO in post-disaster Section 106 review. They also outline specific short cuts with respect to Section 106 review such as excluding from SHPO and ACHP

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review routine activities such as plumbing and electrical modifications, abbreviating the time frames for SHPO review, and providing standard treatment measures for adverse effects (Spennemann and Look 1998, 10) These agreements facilitate FEMA's quicker delivery of assistance while ensuring that preservation goals are still met.

Such a programmatic agreement was reached in 1994 following the Northridge Earthquake among FEMA, the California Office of Emergency Services, the Advisory Council on Historic Preservation, and the SHPO. One innovation in this agreement was the delegation of normal federal responsibilities of assessment of APEs, DOEs for listing in the National Register, and Section 106 review to a private contracting firm, working under the SHPO, and paid by FEMA. The contractor assumed these responsibilities, and the agreement worked very well in streamlining the process (Spennemann and Look 1998, 14).

#### *The Federal Historic Preservation Tax Incentive Program*

Another historic preservation tool that is useful after disasters is the Federal Historic Preservation Tax Incentive Program (TIP), which was established as a part of the Internal Revenue Code of 1986. This program allows a 20% tax credit for the "certified rehabilitation of certified historic structures" (National Park Service 2006). This credit is offered for buildings listed on the National Register, or eligible for the National Register, and the rehabilitation has to be accomplished following the Secretary of the Interior's Standards for the Rehabilitation of Historic Buildings. However, the credit only applies to commercial buildings, not residences. In post-disaster rebuilding where it may be necessary to repair substantial damage to historic resources, the TIP is a valuable tool in preservation of historic commercial buildings that may otherwise have been demolished post-disaster.

*Special legislation for specific disasters*

In specific disaster situations, Congress may pass special legislation that provides additional aid to disaster-stricken areas. On December 21, 2005, the President signed the Gulf Opportunity Zone Act of 2005 (HR 4440). This act, among many other aid programs, provided for a Federal Tax Incentive of 26% for buildings damaged by Hurricanes Katrina, Rita, and Wilma. Even though the incentive can only be applied to commercial buildings, the increase in the tax credit from 20% to 26% is a valuable tool in preservation post-disaster. The GOZA also increased the Rehabilitation Tax Credit for non-historic structures from 10% to 13% (Faussett). There was a proposal in Congress to also extend the tax credit to residential property damaged in Hurricane Katrina, but unfortunately this was never realized. Such a credit would be an incentive to homeowners to restore, rather than demolish and rebuild, their historic buildings after disasters.

Additionally for Hurricane Katrina, a Programmatic Agreement (PA) was reached among FEMA, the Mississippi State Historic Preservation Office, and the Mississippi Emergency Management Agency. This agreement allowed FEMA to assume many responsibilities for Section 106 review normally done by the SHPO, then provide the SHPO fourteen days for review. This PA closely followed the PA agreed upon by FEMA and the National Conference of State Historic Preservation Officers, and is similar to an agreement for the state of Louisiana post-Katrina.

*National Non-governmental Organizations and disasters*

It is apparent that disaster legislation is complicated and all phases of the disaster cycle (response, recovery, preparation, and mitigation) require immense

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cooperation among federal, state, and local governments as well as advocacy groups such as the National Trust for Historic Preservation, the Center for Preservation Technology and Training, and the American Planning Association. A large amount of disaster aid is also provided by these non-governmental organizations, whether it be in the form of financial, volunteer, advocacy, or professional assistance. Following Hurricane Katrina the American Institute of Architects collaborated with the American Planning Association at the request of Louisiana Gov. Kathleen Blanco and the Louisiana Recovery Authority to organize the three-day “Louisiana Recovery and Rebuilding Conference” which was held in New Orleans from November 10-12, 2005. The conference was co-sponsored by the National Trust for Historic Preservation and the American Society of Civil Engineers. It brought together 650 citizens, community leaders, architects, planners, engineers, business people, and public officials who formed planning principles and redevelopment goals, as well as outlining six themes for the recovery process: Unify, Cooperate, Protect (using levee protection and coastal restoration), Preserve (historic resources), Rebuild, and Improve.

As well as organizing conferences, these different non-profit organizations mobilized volunteers, raised funds, and used their websites and publications to create national awareness of and dialog on the problems faced following Hurricane Katrina. The American Planning Association sent a team of experts to New Orleans to assess the city’s post-Katrina ability to execute planning efforts; this team published a review of its findings in November 2005. Also in November of 2005 the Urban Land Institute presented detailed rebuilding recommendations to Mayor Nagin’s “Bring New Orleans Back Committee.” Specific to historic preservation, the Center for Preservation Technology and Training established an exhaustive and comprehensive clearinghouse of information on their website to assist property owners in cleaning and restoring

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historic buildings after flood damage. These are just a few examples of the extremely important role of national advocacy organizations following disasters. These organizations since the widespread devastation of Hurricane Katrina are also raising awareness among their various professional members on the need for disaster planning and mitigation in places all over the country, not just New Orleans.



CHAPTER 6  
LOCAL INITIATIVES

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There are many local public and private agencies that are involved in disaster management and cultural resource management, and these local entities vary widely from municipality to municipality. Some cities have large departments that handle disaster planning and management as well as city planning and historic preservation. Other smaller cities or towns may have neither dedicated disaster managers nor dedicated preservation or planning specialists. This chapter discusses the structure of the local agencies in New Orleans with respect to disaster management, planning, and historic preservation in order to demonstrate relationships between local agencies and state and federal agencies in disaster preparation and recovery.

#### *New Orleans and local preservation agencies*

New Orleans has numerous strengths with respect to local agencies as well as several weaknesses. The city of New Orleans has a long and distinguished preservation history; it had established preservation organizations and efforts much earlier in its history compared with many other American cities. Several small preservation organizations formed in the 1920s to restore individual buildings in the French Quarter. The Vieux Carré Commission (VCC), the second oldest historic district in the country, was formerly created by amendment to the Louisiana Constitution in 1936, and in 1937 the New Orleans Commission Council passed an ordinance that charged the Commission with the “preservation and regulation of all private property with historic or architectural value within the confines of the designated district” (Vieux Carré Commission). The 1995 Code of the City of New Orleans defined the composition, purpose, and area of jurisdiction of the Commission. These early preservation efforts were instrumental in the revitalization of the badly deteriorated French Quarter, and they led to the Quarter’s later emergence as a tourist destination.

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Another example of the strong preservation presence in New Orleans is the successful opposition to the proposal for an interstate highway along the Mississippi River that would have cut directly through the French Quarter in the 1960s. Because of the efforts of local preservationists, and eventually the advice of the newly-formed Advisory Council on Historic Preservation, the plan was abandoned and the French Quarter saved from destruction. Many other American cities did build expressways through their older neighborhoods during this time period, permanently removing historic fabric and resources.

The city of New Orleans has maintained strong preservation organization in both the city government and the private, non-profit realms both because of its early emphasis on preservation, and also because tourism has become a major portion of the city's economy, which relies heavily on the history and historic fabric of New Orleans. The city has three different historical commissions: the Vieux Carré Commission (VCC), which has jurisdiction over the French Quarter; the New Orleans Historic District Landmarks Commission (HDLC), with jurisdiction over the eight residential local historic districts; and the Central Business District Historic District Landmarks Commission (CBD HDLC), with jurisdiction over the four downtown local historic districts. These latter two landmark commissions share the same staff, and were enabled by two similar New Orleans Ordinances.

The HDLC was created by City of New Orleans Ordinance Number 5992 M.C.S., which was passed in 1976 and revised in 1980. It enables the City Council to designate historic districts, and the HDLC to designate individual buildings or sites as "Landmarks" or "Landmark Sites." The enabling legislation for the CBD HDLC is Ordinance Number 6699 which was passed in 1978 and revised in 1981. It mirrors the HDLC Ordinance, but adds criteria for "Ratings of Significance" for buildings ranging from Category A:



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Buildings of National Importance, to Category F: Unrated Buildings, or “buildings that are generally twentieth century structures that have no real architectural value” (City of New Orleans Ordinance Number 6699, 1981). These three commissions are empowered to review proposals for all alterations to the exteriors of buildings or building demolition in the local historic districts as well as serve citations for “Demolition by Neglect” for buildings that are not maintained.

The City of New Orleans is also designated a Certified Local Government (CLG) by the National Park Service. The 1980 amendment to the NHPA established the “Certified Local Government” as a tool to delegate some of the responsibilities of the SHPO to certain local governments that meet fairly rigorous standards for local preservation administration. These include establishing a historic preservation commission, enforcing appropriate legislation for designating and protecting historic properties, maintaining systems for identifying historic properties and including public participation in the local historic preservation program (National Park Service 2004, 16). With respect to disasters, in the planning and recovery process, these Certified Local Governments can be extremely useful in assessing damage to historic properties and making decisions on priorities for rebuilding because they have already established the framework for administrative integrity in historic preservation. Another strong preservation asset in the city of New Orleans is the Preservation Resource Center (PRC), a non-profit advocacy and education organization that was founded in 1974. The PRC has a staff of 19 and an annual budget of \$1.4 million (PRC). In New Orleans immediately after Hurricane Katrina, the PRC served as a clearinghouse for information on cleaning and rebuilding historic properties after flooding, providing an invaluable service to property owners, and filling in gaps in the administrative integrity of the city’s preservation commissions.

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Since the devastation of Hurricane Katrina, New Orleans has obviously had many preservation challenges. One of the biggest problems after a disaster in any locality is the problem of fractured administrative integrity. In the best cases of good administrative integrity, municipalities have strong preservation ordinances with strong preservation commissions; New Orleans is an example of such a place. They also have close working relationships with the State Historic Preservation Office and ties to local and/or national non-profits that perform advocacy functions. After a disaster, the local and state preservation organizations are stretched to, and often pushed past, their limits. Every disaster is different and each requires organizations to perform either different functions, or to perform “normal” functions such as the SHPO performing Section 106 review in massive quantities and within limited time schedules.

Another problem with local organizations after a disaster is that their offices and records may have been damaged, so personnel are required to work out of temporary facilities without access to their normal administrative working environment. In the case of New Orleans, this problem was extreme; the staff of local agencies fled either before or during the flooding, and were not able to return to the city for days or even months. The New Orleans city government was forced to lay off a large percentage of its personnel after the storm because its tax revenue was so greatly reduced in just a matter of days. For preservationists, this meant that the staff of the three Historic Commissions was decimated by lay-offs and relocation, and the remaining staff was suffering from personal trauma on top of insurmountable work loads. The administrative integrity of preservation efforts in New Orleans was shattered after Hurricane Katrina, at the same time that its innumerable historic resources needed the help of the Historic Commissions and the Preservation Resource Center.

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In disasters such as this, the SHPOs can, and should, work closely with the local organizations, whether or not this relationship was a strong one before the disaster. In Louisiana, however, the damage from Hurricane Katrina was not limited to New Orleans, but also severely damaged many other municipalities. In short, the SHPO was just as overwhelmed as the local preservation organizations. These shortcomings were recognized immediately after the disaster by preservation staff, as well as the FEMA environmental and historic preservation staff. A Programmatic Agreement was signed shortly after Hurricane Katrina among FEMA, the Louisiana SHPO, and the Louisiana Emergency Management Agency in order to streamline procedures for assessment of damaged cultural resources. Volunteers flooded in from all over the country, organized by the National Trust for Historic Preservation, the Association for Preservation Technology, and numerous other preservation-related organizations. Additionally, these organizations donated money, performed fundraising, and advocated for money from the federal government for preservation purposes. The widespread damage from Hurricane Katrina, and the widespread media coverage, precipitated an influx of aid from all over the world for the city of New Orleans, and shed a stark light on the vulnerability of the procedures, policies and people on which preservation administration relies.

#### *New Orleans and factors that affect disaster recovery*

The situation in New Orleans after Hurricane Katrina can be compared to numerous historic disasters in order to analyze its strengths and weaknesses in the recovery process. Chapter 2 of this thesis discussed factors that affect disaster recovery, and New Orleans can be analyzed with respect to these five factors: type of disaster and scale of destruction, nature of place affected, leadership, planning and training pre-disaster, and sustainability.

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The type of disaster in New Orleans—flooding that was sustained for weeks—is a dangerous type of disaster for vernacular historic resources. Flooding such as this causes wood to swell, which is irreparable in many cases. It also causes mold to grow on interior surfaces such as plaster and trim, which must then be completely removed. Additionally, the geography of New Orleans, with much of the city built below sea level, meant that the flooding and therefore damage was extremely widespread. Entire historic districts were damaged, and the landscape of the whole city was permanently changed.

Leadership was also a problem after Hurricane Katrina. The municipal leadership of New Orleans was shattered. Mayor Ray Nagin had been a relatively weak leader prior to the disaster, and following Katrina he did not take a strong stand in making large-scale decisions about the repopulation and re-planning of the city. The decisions to be made in New Orleans post-Katrina were very difficult ones, and also would be unpopular if they meant that only parts of the city would be rebuilt. The mayor was running for re-election in May of 2006, and he was unwilling to make decisions that would be unpopular to some of his voting constituency following Katrina. The city had problems not only with leadership, but also followership. Many people blamed the disaster on the municipal officials responsible for the maintenance of the levee system, and also blamed federal officials for the inadequate level of response in recovery efforts during and immediately following the hurricane. Because of this, the people of New Orleans were hesitant, if not loathe, to trust public officials and their decisions. Even if Mayor Nagin had taken a firm position on how the city should be rebuilt, it is questionable whether the people of the city would have followed and supported his leadership decisions.

The leadership role with respect to historic preservation post-Katrina was led by the Preservation Resource Center, along with the National Trust for Historic Preservation, which opened a field office at the PRC office. These two organizations

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worked closely to accomplish damage assessment of hundreds of “red-tagged” buildings, or those deemed by the city to be beyond repair and slated for demolition. The National Trust organized volunteers from around the country to staff assessment teams. Preservation and architecture volunteers spent a week at a time in New Orleans visiting red-tagged buildings and making recommendations to the city on how to treat historic buildings. This quick action undoubtedly saved numerous buildings from demolition. The volunteers also advised homeowners on techniques for repair of historic houses. Additionally, the Preservation Resource Center increased its educational seminars after Katrina, teaching residents about cleaning and mold remediation. The PRC also provided supplies for these projects and consultants for on-site advice (PRC). The National Trust and the PRC served as leaders in advising and assisting property owners. While other civic leaders were grappling with difficult decisions about the best way to rebuild the city, preservation leaders were providing valuable, non-political services to residents who were in their own ways rebuilding their individual buildings.

Another factor in how places rebuild after disasters, planning and training prior to the disaster, can be discussed with respect to New Orleans. Even though New Orleans was known to be highly vulnerable to hurricane damage and prone to flooding, disaster planning and training were minimal prior to Katrina with respect to the numerous cultural resources in the city. Even the more important planning with respect to human evacuation and protection was clearly inadequate, as there was no plan for evacuating the thousands of New Orleans residents who did not own cars, or could not drive out of the city.

The last factor, sustainability, is directly applicable to New Orleans. Many experts argue that attempts to manage the Mississippi River by the Army Corps of Engineers are temporary, and that in the long-term, the river cannot be managed. They therefore

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conclude that New Orleans is not in a sustainable location because it will require huge monetary and engineering efforts to protect it from future flooding (Daniels *et al.* 2005, 47-53). Some experts make the case that the city should be moved to a new location; others claim that the city can remain in its current location, but that its footprint should be altered to only allow settlement in its highest and most sustainable sections. Either of these ideas have serious ramifications with respect to historic preservation. Moving the entire city would erase its 300 years of built cultural resources. Repopulating only portions of the city would abandon some sections that contain vernacular historic resources.

Another problem with sustainability and historic resources in New Orleans is that in order for many property owners to receive federal disaster aid, they must subscribe to the National Flood Insurance Program, which mandates certain requirements for buildings. One example is the mandate to elevate buildings above a certain height as specified by FEMA's flood maps. The tension here between sustainability and preservation is that by elevating an historic building, the character and scale of the building is drastically changed. The tensions between sustainability and preservation will never be completely removed, but through research like FEMA's publication, *Integrating Historic Property and Cultural Resource Considerations Into Hazard Mitigation and Planning*, cultural resources can be made more sustainable with respect to natural disasters.

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CHAPTER 7  
CONCLUSIONS

There is another thesis that could be written after this one. Actually several other theses could be written after this one. My original intent was to research specific and varied ways that people rebuild urban places following disasters. I spent the summer of 2005 in England, and was inspired to write about cultural resources and disasters after visiting Plymouth. Plymouth was heavily blitzed in World War II and following the devastation of the bombing, the medieval city center was completely demolished to create a brand new city center with new buildings, a new street grid, and an entirely different character than the character of the pre-war Plymouth. I also read about Warsaw, Poland, which employed much different methods of urban planning than Plymouth did during and after the war. The people of Warsaw knew that the city would be bombed, and they carefully surveyed historic and cultural resources such as important buildings and monuments. When Warsaw was rebuilt, some of the completely destroyed buildings were painstakingly reconstructed in exactly the same place and form as they were prior to the war. Why were these two places rebuilt in such different ways following the same war?

When I returned to the United States in August of 2005, Hurricane Katrina devastated the Gulf Coast— my Gulf Coast where I was born while my dad was in flight school, my Gulf Coast where twenty years later I joined the Navy and went to flight school myself, and my Gulf Coast where I was a flight instructor for three years prior to attending graduate school. I am personally attached to this part of the world, especially New Orleans, which possesses a cultural character unlike any other American city. How dare Katrina mess with my Gulf Coast? The thesis that I wanted to write was about New Orleans. The thesis that I wanted to write was a thesis that would solve all of the problems of the post-Katrina New Orleans and return the flooded, devastated,



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abandoned city to the vibrant and gritty city of live oaks and jazz and mufuletta and shotgun houses that I loved. Sadly, a master's thesis in historic preservation cannot return New Orleans to the way it was before Katrina. Nothing can. Katrina has become a permanent part of the place and a benchmark in its history, and was both a tragedy and an opportunity for the city. Katrina was an event that carved its presence in memories and the built environment alike, leaving shattered minds and buildings and landscapes in its wake.

I wanted historic preservation to be a tool that people could use to help recover their lives in New Orleans. I wanted to write about how preservation could be this tool. However, in order for me to understand how historic preservation could help New Orleans post-Katrina, I had to learn about disaster management. I had to learn how preservation fit into disaster management. And that is where this project ends and another begins. This thesis explored the intersections between historic preservation policy and disaster management policy in the most general and basic way. It identified that cultural resources are important post-disaster; they are the jazz and the shotgun houses that I remember about New Orleans and want to experience when I return. They are the shotgun houses that wouldn't be the same if they had to be elevated to comply with FEMA's flood insurance requirements. They also wouldn't be the same with their damaged wooden gingerbread cornice brackets removed or damaged wooden clapboard siding replaced with vinyl. They wouldn't be the same removed from their streetscape of seemingly endless rows of similar houses.

This thesis identified that these vernacular, every-day resources are highly vulnerable to damage in a disaster due to their construction materials and quality. They are also vulnerable to demolition after a disaster because they are not necessarily identified on an historic register, and many are owned privately and not subject to

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historic preservation review. Also, owners of these resources may be in lower-income brackets and not able to afford historically-sensitive repair or rebuilding methods and materials. These types of cultural resources often have no preservation organization responsible for evaluating them for significance, designating them on any register, or monitoring their maintenance and condition; they have little or no administrative integrity for historic preservation.

Administrative integrity is a theme throughout this thesis. Historic preservation policy in the United States in many cases does not allow for a specific entity to manage an historic site once it is designated. After a site is listed on the National Register of Historic Places there is no requirement for maintenance, monitoring, or re-evaluation after a certain period of time. In the case of New Orleans, many of the national historic districts were designated in the 1960s. In the 40 years since then, these districts have changed, but have not been re-evaluated for significance. New Orleans does, however, have strong local preservation ordinances, designated local historic districts and commissions, and as a Certified Local Government, has more administrative integrity than places with only national historic districts and no local managing agency.

Administrative integrity is a problem with disaster management and historic preservation. If there is no agency, organization, or individual responsible for managing vernacular cultural resources, then there will be no pre-disaster planning or mitigation. It will also be more difficult post-disaster to protect these resources from demolition and promote sensitive restoration; whatever administrative integrity was present prior to a disaster may be disrupted, or even completely shattered post-disaster. Federal disaster legislation does not explicitly allow for consideration of historic preservation. This consideration is only mandated through Section 106 of the NHPA. In the recent past (the last decade) FEMA has been working with the Advisory Council on Historic Preservation

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(AHP) and the National Conference of State Historic Preservation Offices (NCSHPO) to establish Programmatic Agreements (PA) for the treatment of cultural resources post-disaster. These PAs allow for standardization following disasters and are advantageous in disaster management as each disaster experienced adds to the collective knowledge of how to manage a disaster better the next time. These PAs are also flexible enough to be tailored to each specific disaster in each specific state and/or locality.

A disaster is in many ways a unique problem for local managers, as many people may only experience one large disaster in a lifetime, or none at all. States and localities need advice and assistance from national disaster specialists. It is important to have federal or national agencies that focus on researching historic preservation and disaster management issues so that they can then advocate for policy, serve as a clearinghouse for information, and educate and train local agencies. FEMA's Environmental and Historic Preservation (EHP) specialists currently perform these functions, but FEMA has experienced many organizational changes since September 11, 2001, and the permanence and stability of the EHP program are not guaranteed for the future.

It is also important for professional organizations such as the National Trust for Historic Preservation and the American Planning Association to maintain a base of knowledge about disasters so that when one occurs, they can assist localities in recovery. These national organizations should also share in responsibility with the FEMA EHP program for advocating for disaster preparedness and mitigation, especially in places that are at risk for repetitive disasters such as floods, hurricanes, earthquakes, and forest fires. In New Orleans, although the federal government was criticized for its slow response to Hurricane Katrina with respect to rescue efforts, national non-profit organizations were relatively quick in sending assistance in the form of both money and volunteers for specific efforts related to historic preservation. The NTHP organized

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assessment teams for damaged historic buildings, the APA sent a team of experts to assess the city's ability to execute planning efforts for the devastated city, and the Urban Land Institute presented detailed rebuilding recommendations to Mayor Nagin's "Bring New Orleans Back Committee" in November of 2005, only three months after the hurricane.

Another theme of this thesis is the multi-disciplinary nature of historic preservation with respect to disaster management. In New Orleans, post-disaster planning cannot be accomplished without addressing the preservation issues of the richly historic built environment; planners and preservationists must work together with city officials and the public to not only develop a rebuilding plan, but also implement the plan once it is finished. Disaster managers such as FEMA staff must work with professionals having experience with historic buildings in order to properly assess the structural integrity of historic fabric post-disaster. These are only two examples, but there are innumerable other ways that preservationists must work with other disciplines to affect treatment of cultural resources.

Planning and mitigation pre-disaster reduce the number of resources lost after a disaster. The FEMA demonstration study on Milton, Pennsylvania combined a cultural resource survey for the town with a disaster mitigation plan. It provided Milton city officials as well as individual residents and property owners with guidance on mitigation actions for historic resources that could be performed as resources allowed. It also is a valuable tool for disaster responders to know how to prioritize limited resources for saving or rebuilding cultural resources after a disaster. If New Orleans had such a comprehensive plan prior to Hurricane Katrina, cultural resources in the most vulnerable places for flooding could have been identified and mitigation steps could have been taken before the disaster. These mitigation actions could range from wet- or dry-

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floodproofing for specific buildings to protecting larger areas of resources with adequate levees. Any mitigation action taken for cultural resources makes them more able to withstand the forces of disasters such as flooding or earthquakes, and therefore makes them more resilient and sustainable for the future.

One last conclusion concerning sustainability is that while preservation professionals should include disaster considerations when addressing sustainability of cultural resources, disaster managers should include cultural resources and values in their definitions of sustainability. Sustainability to disaster managers has been measured with respect to economic and ecological factors. In addition to these important factors, the presence of cultural resources greatly contributes to the sustainability of a place by enhancing quality of life, contributing to economic vitality, and as National Trust for Historic Preservation Richard Moe stated, “Meaningful connections with our past can help us plot a sure course for the future” (Moe 2006, 2).

In summary, there are five conclusions to this thesis, and also several possible areas of future study with respect to disasters and historic preservation. The conclusions are as follows:

- Vernacular cultural resources are vulnerable in disaster situations.
- There are specific roles that federal agencies and national non-profit organizations should play in disaster management with respect to historic preservation.
- Disaster management is inherently multi-disciplinary, and many different professionals must work together to integrate historic preservation and disaster management.
- Disaster planning and mitigation increase the resiliency of cultural resources in disaster situations, and should be considered by preservationists as they engage in preservation efforts for buildings, districts, and landscapes.

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- Cultural resources are vital elements of our environment and must be included in sustainability considerations by disaster managers.

The following are ideas that emerged as I was writing this thesis on topics for future research:

- The general conclusions of this thesis could be more directly applied to the disaster response and recovery for Katrina. These lessons learned could then be applied to draw new conclusions about improvements to federal, state, and local disaster policy. Specifically, recommendations could be made on ways to include historic preservation concerns in the Stafford Act and other federal disaster legislation that currently provide no consideration for cultural resources.
- A study similar to FEMA's demonstration study for Milton, Pennsylvania on mitigation for cultural resources could be completed for New Orleans, or any other disaster-prone location.
- The effects of a disaster on heritage tourism, and the ways that heritage tourism could help a place recover from a disaster could be studied in New Orleans, as much of the city's economy was based on this type of tourism prior to Katrina.
- The local and national historic districts in New Orleans could be re-evaluated for integrity and significance following the devastation of Katrina.
- Remembrance, or memorialization of Katrina will take many forms in the future, and these different forms of remembrance in the built environment could be studied.
- New construction in New Orleans post-Katrina could be studied for its relationship to the city's rich historical architectural heritage and vocabulary and unique character.
- Policy changes to the requirements of Certified Local Governments could be suggested, possibly requiring localities to perform disaster mitigation plans.
- Cities that have strong preservation organizations and strong HABS/HAER documentation could be compared to cities having little or no preservation efforts and/or documentation to draw conclusions about how these efforts facilitate recovery and preservation after disasters.

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- Theories of New Urbanism are most often applied to construction of new neighborhoods, and often disregard the history, vernacular architectural styles, and culture already existing in the place. The New Urbanist theories of creating pedestrian-friendly mixed-use communities should first of all, incorporate historic preservation theories and concerns, then secondly, could be applied to areas where devastation has not cleared a blank slate, but left many elements of the built environment.

There are innumerable professionals and volunteers who have been working tirelessly on preserving the character-defining features of New Orleans following the devastation of Hurricane Katrina. There are also many people working tirelessly to preserve the cultural landscapes of its neighborhoods. Hopefully the lessons learned in New Orleans after Hurricane Katrina can be incorporated into our nation's collective knowledge of disaster management and historic preservation. Hopefully the lessons learned will encourage communities across the country to engage in multi-disciplinary disaster planning and mitigation in order to make our heritage of the past more sustainable for the future.

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