

## Culpability, Harm, and Blame

The disaster cases we examined involved a number of classic moral concepts, including culpability, harm, and the assignment of blame.

The concept of culpability arises when considering the causes of natural disasters and the extent to which specific individuals or entities (e.g. communities) can be said to be responsible. From a moral perspective, culpability implies that those who cause a harm should be held accountable for it, correcting or otherwise compensating impacted parties.

The case studies examined here raised a number of questions of culpability. And indeed, the assignment of blame is common following disaster events. Following Northridge, for example, the city of Los Angeles was blamed for the collapse of an apartment complex, which killed 16 people. And, indeed there is currently a lawsuit by the families seeking damages. Following Loma Prieta, CALTRANS received considerable blame for the collapse of the Cypress Expressway, and for the failure to design and build it to stronger seismic standards. In the midwest community of Exselsier Springs (MO) a propertyowner upstream of a city bridge is blaming the city for flooding on his property, claiming that bridge renovation is constraining the flow of water. (He is threatening legal action.)

Many of these conflicts find their way into the courts and are settled there. These court decisions then have an influence on what is perceived to be responsible mitigation behavior and about who is culpable, and when. In interviews on the Auburn dam, the court case of Aiken v. California was mentioned by Butch Hodgkins, director of the Sacramento Area Flood Control Agency. This involved a lawsuit by propertyown-

ers who were flooded upstream as a result of a state flood control project. Prior to the case, if a flood control agency acted "reasonably" it could not be held liable for such damages. Now, under the Aiken opinion, a principle of "strict liability" is apparently being enforced in the California courts, holding agencies responsible regardless of whether the flood control actions were reasonable or not. Hodgkins believes that under current California law that if the proposals supported by the environmental community were implemented (a stepped release plan), his agency would be held legally liable for any resulting flooding. For this, and other reasons, he believes the Auburn dam makes more sense as a solution to the flooding problem.

Moral concepts such as blame, responsibility, culpability, then were important in the mitigation and disaster cases we studied.

### NIMBYism in Mitigation and Recovery

The phenomenon of NIMBYism--"not in my backyard"--also manifests in hazard mitigation and disaster recovery, raising a number of moral and ethical concerns. While the objects of NIMBYism may sometimes involve activities hard to defend or support from a societal perspective (e.g. a waste incinerator), they are often proposals for activities that address important collective needs. Local residents object to such NIMBYs because they often experience the negative effects, which they view as unfair, even if the larger community or societal benefits outweigh the local negatives.

Several examples of post-disaster NIMBYism have emerged in the disaster case studies. In the San Francisco Bay area, following the Loma Prieta earthquake, a number of freeways and overpass structures are (still) being repaired and strengthened. One of the most contentious debates has centered on the rebuilding of central freeway in the city of San Francisco. Some neighborhood residents have made it known that they would like to see the highway not be rebuilt at all through this was probably never a very realistic option. Others are arguing for design options that might minimize the highway's traffic effects. Balanced against the noise, traffic, etc., experienced by neighbors are the broader regional benefits provided by the highway. City planning officials indicate that the freeway is still very much a needed part of the regional road and highway system. Similar debates have occurred over rebuilding the Cypress expressway in Oakland (and significant modifications in the highway design have resulted).

A second NIMBY example can be seen in the redevelopment process following Hurricane Andrew. Specifically, fierce neighborhood opposition developed around a planned 57-home Habitat for Humanity subdivision in South Dade County. Neighbors objected to the presence of low income residents, claiming that they would be future crack houses (Noonan, 1993). The project was eventually scrapped because of the opposition.

A number of ethical questions emerge from these types of NIMBY conflicts, including whether it is fair and equitable to expect certain individuals and neighborhoods to bear a disproportionate burden in support of a greater public need (e.g. the need for affordable housing in the aftermath of a hurricane), whether NIMBY opposition is based on legitimate concerns or unfounded fears and prejudices, and what sort of compensation or design changes are ethically-required to address NIMBY concerns, among others.

#### Who Should Pay for Mitigation?

A number of ethical issues arise with respect to who should pay for the costs of hazard mitigation, and the costs of preparing for, responding to, and recovering from disasters.

Following the Northridge and Loma Prieta earthquakes, for instance, major questions arose about who should pay for the costs of repairs and retrofits. To finance Loma Prieta's recovery, a special sales tax was utilized...(?) Following Northridge, a state bond referendum to pay for the state share of disaster assistance was turned down by voters, raising questions about whether the taxpayers in that state recognize a financial obligation to at least absorb a portion of the expense associated with disaster recovery.

Who should pay, of course, is in many minds closely related to who will benefit. In the Auburn dam case, for instance, opponents question why federal taxpayers should be required to pay for flood control (and potentially other benefits) that essentially benefits the residents of one state, and indeed essentially one region of that state. Opponents have made the case that if the project is so essential, then it should be financed locally. A recent New York Times story about the dam quotes opponents who describe the project as "a boondoggle of epic proportions." "Why should taxpayers from the rest of the country, they ask, have to subsidize development in California or pay to keep homeowners out of harms way? It would be much cheaper to improve the existing levee system in the Sacramento area, and fairer to have residents of the area pay for it themselves..." (Egen, 1996, p. 22) Presently the cost-share for the dam would be 75% federal, 25% non-federal of the non-federal share, the State of California would apparently pay for some 70% of this. And, there is legitimate reason to think that if the project were to have to be funded locally, there might be a much more serious consideration of whether it (or the particular level of protection it provides) could be afforded.

Proponents of the project, on the other hand, argue that the costs are simply too high for local jurisdictions to absorb themselves, and that there is a national interest in preventing a disastrous flood in Sacramento. Supporters of the project argue that it makes good economic sense. While the dam would cost about \$1 billion, it would protect against flooding that could cause some \$10 billion damages.

One possible approach is to base the distribution of costs on some form of the benefit standard--that is, those who benefit from the mitigation measures should be asked to pay the lion's share of their costs. There are, in fact, a number of mitigation programs based on this idea. Benefit assessment districts are being used in a number of places around the country and are based on this principle (e.g. Oakland, California's vegetation management district... ). And, another variation is the culpability principle discussed earlier, which holds that the burdens of paying for mitigation should fall primarily on those individuals and communities responsible for creating the hazardous circumstances in the first place.

In 1995 (with the FY 1996 budget proposal) the Clinton administration proposed a major new approach to federal flood control policy, reflecting some of these sentiments. Specifically, it was proposed that the Corps of Engineers restrict its funding of flood control projects to only those with an interstate dimension and that the federal share of the costs of these projects be substantially reduced (to 25%?). At the same time, the Administration also proposed not to fund any new shoreline protection projects (essentially beach renourishment projects) believing these to be essentially local and regional projects, with primarily local and regional benefits.

There has been an ongoing debate over the appropriate cost-share of such projects. The impending reauthorization of the Water Resources Act appears to keep the cost-share as it has been, but the Clinton administration has been strongly advocating a federal share of no more than 50%.

One of the most contentious issues is whether the collective, i.e. the government, should be expected to bail out disaster-stricken individuals and communities. Disaster assistance in the U.S., particularly federal disaster assistance, has begun to be viewed as an entitlement. There is a sense, in fact, that one of government's main functions, is to help individuals and communities get back on their feet following such events, and to help return them to normalcy.

But do individuals and communities have the right to expect society to "make them whole" following disasters? This question was especially pertinent following the Midwest floods where extensive federal monies were used to buyout individuals and communities along the floodplain and in a few cases relocate entire communities. Several state mitigation officials we spoke with expressed exasperation and frustration about the demands of individuals participating in the buyout program. They were especially critical of the attitude that some had of trying to maximize "what they received" and a sense that they were entitled not only to be fully compensated (made whole) for damages, but where possible, made better off.

There are several morally-relevant considerations here, including the extent to which individuals and communities are responsible for placing themselves at risk, and the availabil-

ity of opportunities to mitigate or reduce these hardships (e.g. by purchasing flood insurance).

This also raises the perennial question of what the appropriate cost-share ought to be in federally-declared disasters. In recent disaster events, the federal government has veered from its 75-25% federal/non-federal cost-share policy for public assistance, assuming 100% of the cost in the cases of Andrew and the midwest floods (?). To critics, this is both an unfair distribution and further reinforces the sense of entitlement of impacted communities. The Galloway committee, for instance, is strongly critical of this trend (Interagency Floodplain Management Review Committee, 1994, p.82):

These cost-share changes have two potentially significant consequences. First, they set up an expectation of similar treatment in subsequent disasters and increase political pressure to provide a lower non-federal share. This perpetuates the dominant federal role in recovery and increases federal costs. Second they may defeat the fundamental purpose behind cost-sharing which is to increase the amount of local involvement, responsibility, and accountability. By lessening the non-federal investment, state and local governments have less at stake and, therefore, may have a lower incentive to develop and adopt sound floodplain management policies and practices. They also point out the fact that communities that are not even participating in the NFIP, still receive federal funds for the repair of damaged facilities and infrastructure. (7)

#### Entitlements and Expectations

A significant and ethical quandary, and one raised by each of the disasters studied, is the extent to which individuals and communities are entitled to certain disaster assistance or mitigation benefits. If people and communities are morally entitled, to what, or what level of benefits are they due?

A number of the individuals interviewed for this study, especially federal and state officials involved in mitigation policy, have commented negatively about the pervasive sense among the public that if and when a disaster strikes government should be legitimately expected to absorb or cover a major portion of the cost. In recent years a number of studies and reports focused on reducing the costs of (especially federal) disaster events have noted the emergence of a "victim" mentality--that over time, our society has grown to perceive those affected by natural disasters as victims, needing and indeed deserving financial assistance (e.g. see ).

The broad ethical question emerges, then: is it fair to view impacted individuals and communities through a lens of victimization, and are they entitled to disaster aid?

The experiences of Midwest floods, and the federal buyout program are perhaps the best examples to many of this sense of entitlement. There is a visceral frustration and even sadness on the part of a number of the government employees who have worked closely on the buyout. One regional planner interviewed who was involved in the Pattonsburg relocation characterized people as "selfish" and basically wanting to get as much as they could from the buyout settlement. They "wanted every little thing ...they wanted to be moved to the new town site without it costing them anything, and they even wanted a manicured lawn at the end of it..." Jan Horton, Mitigation Officer for the Illinois Emergency Management Agency, expressed similar exasperation with the demands of people, describing much of it terms of "greed". When arguing over what their destroyed homes were worth, Horton noted skeptically that "...everyone had new carpeting, landscaping ... people are coming in and saying its just not enough ... How far does this assistance go?" Buck Katt, mitigation officer for Missouri tells the story of a man who argued intensely that his home was worth much more than the appraisals were indicating ...

Federal and state officials also commented that because the buyout and disaster assistance monies are primarily federal in origin, they were seen by many local residents or "free money." Buck Katt described the view in one town where he worked. The feeling there was that if the federal government was going to waste money in Bosnia, they might as well waste it in our town; the feeling was that "you owe it to us before you owe it to anyone else".

Especially expensive in public funds were the communities that were entirely relocated to new sites. As mentioned earlier, we visited two of the more notable of these--Pattonsburg, MO and Valmeyer, IL. In these cases the intent was to allow the entire community to relocate as a unit and to essentially permit the community to stay together. These community relocation efforts raised similar questions about entitlements. Even if society agrees that individuals are entitled to be bought-out or compensated in the aftermath of a flood, is an entire community entitled to be relocated? To many interviewed for this study the answer was clearly negative.

The town of Valmeyer has received particularly heavy criticism from many that we talked with. One Corps of Engineers official described it as "a total waste" of federal funds, noting that the 1993 floods were the first time this town had been flooded in 50 years. This official believes it would be much less costly to add onto the existing levee system (which in his opinion performed well). So, perhaps a town has a legitimate claim to some modest levee improvements but does it really have a legitimate moral entitlement to have the larger public pay to recreate itself on an entirely new site? Perhaps not, especially at a price tag of \$\_\_\_\_\_ million.

One view is that individuals and communities may not be entitled to aid if they had opportunities to eliminate or

reduce their risks but choose not to take them. Should individuals in the floodplain be bailed-out by the federal government, in light of the fact that they had opportunities to purchase flood insurance (or to take other forms of preventive action) but chose not to? In theory, under the NFIP, non-participating localities are to be ineligible for federal disaster assistance, and this clearly reflects the same kind of moral sentiment (i.e. the community and its residents could have taken actions to reduce their risk).

Interestingly, a similar moral sentiment has been expressed concerning Pattonsburg. Pattonsburg, which was heavily flooded during the 1993 Midwest floods, had the opportunity to relocate back in the 1970s, under an earlier Corps of Engineers proposal. Certain members of the community opposed the plan (indeed actively fought it) and the proposal was eventually scrapped. Several mitigation officials, including a COE official, expressed the view that Pattonsburg had its chance to move but did not take it--that they did not deserve a second chance to relocate, and that because of this earlier opportunity were certainly not entitled to expect such major federal expense. (And, by the way, very few residents of Pattonsburg had purchased flood insurance).

More pedestrian examples exist as well. Missouri officials mentioned several small towns that have been blatantly disregarding their local floodplain management ordinances, and allowing development in the floodplain without requiring it to be elevated. While it may be understandably difficult in a small town to impose regulatory requirements on friends and neighbors, failure to take preventive actions should vitiate expectations of a bailout.

There is an increasing expectation, a number of interviewees have noticed, that when it comes to dealing with and responding to disasters, government will and should "take care of the problem". The planning director for the city of Elsasser Springs (MO), for example, mentioned a recent case of a furniture storeowner in the downtown whose building incurred substantial mud damage from a land disturbance upstream. Instead of taking appropriate legal action against the upstream landowner, the storeowner came to the local government and essentially said "What are you going to do about the problem". Citizens appear often to expect that government will compensate them for any harm done them, regardless of who was at fault, and regardless of their own ability to take preventative and corrective actions.

Indeed, some mitigation officials acknowledge the fact that they (specifically, or government in general) had a hand in creating the expectation. In the case of the Midwest buyout, officials can be said to be partly responsible for "setting the tone," and giving the impression that government intended to "make whole" affected homeowners. The buyout program will also very likely influence what homeowners and citizens expect in future disaster events (there and elsewhere). As one local planning official put it, "FEMA came in here and was handing out money like it was paper."

In other specific cases, mitigation personnel or agencies may create expectations that certain personal expenditures will be reimbursed, or certain program benefits will be available. In these cases, individuals and communities may develop legitimate expectations to receive these benefits. Policymakers and those involved in the provision of mitigation benefits may have a positive duty to work towards adjusting expectations, or counteracting false expectations when they develop.

### Political ethics

We uncovered a number of somewhat predictable political controversies, many directly following natural disasters and centered around the recovery and reconstruction decisions of different levels of government. Several ethical dimensions to these political dynamics were identified.

One issue involves the political tactics used and a perception that in certain cases unethical tactics were employed to bring about a desired outcome or to enhance a political position concerning mitigation. The Friends of the River--Opponents of the Auburn Dam--are highly critical of the tactics of the chief Congressional supporter, Rep. Doolittle who they believe strong-armed local officials to support the project, threatening to block funding for any other flood control alternative. Accusations of dishonesty and distortion of the truth, have arisen in several of the case studies.

At a fundamental level, these concerns go to the question what ethical standards we expect of our politicians, leaders, and decisionmakers. Are they (and should they) be held to high standards of honesty, courage and integrity, in dealing with the public others involved in mitigation policy?

Honesty "writ large" came into play in the Auburn dam conflict. Ron Stork of Friends of the River repeatedly observed that Sacramento was a community "in a state of denial about its basic geohydrological circumstances." In the minds of Stork, and others, Sacramento's leaders, while perhaps not lying, have neither sought to be honest with their constituents. As Stork argues, honesty is the first ethical obligation --citizens should be told they live in a floodplain and that certain things will happen when the levees break. The presence of an extensive levee system, and the infrequency of flooding, may cause people to minimize or under-appreciate the flood risk. Moreover, at the same time extensive new development is occurring in the floodplain (especially in the Notomos community).

Are officials being fully honest with constituents? And, should elected officials (and perhaps others?) be expected to act courageously in attempting to combat local complacency, and what Stork calls "community denial"?

There are also clearly different political philosophies about how to govern expressed by the different public officials interviewed, and different processes for soliciting (or not) public input and involvement. Mayor Warford of Pattons-



urg (MO) described his philosophy of involving all members of the community there in deciding whether or not to relocate the town. In the end, some 96% of the residents are participating in the relocation. Warford described his governing philosophy as being one of "taking it to the people". He did not see his role as one of convincing people, but rather of listening. Warford went to the community and said: "Whatever you want ... its all up to you." "If we're listening to the people, then things will work out..." He contrasted the democratic, participative process of Pattonsburg, with Chelsea (Iowa) where the town was split on the relocation issue, and where the mayor took more of an advocacy role.

Following Loma Prieto, the City of San Francisco also consciously took a more deliberate, participative approach to dealing with demolition decisions. Chief building inspector Kornfield described its process as one of roping-off damaged buildings, and holding a series of public meetings about what to do with these structures. While the city has unusual powers following such a disaster (and can demolish a structure without a building owner's consent), it believes that in the long run fewer disagreements and conflicts (and fewer lawsuits) will result if a somewhat slower, deliberative approach is taken. In contrast to San Francisco, the city of Santa Cruz quickly demolished buildings following the disaster and is currently being sued as a result.

There is a concern that partisan politics sometimes gets in the way of public safety and what should be done from a mitigation or disaster management point of view. A top state official in California complained that charges by Washington of waste in the aftermath of Northridge were largely politically motivated (i.e. clash of a democratic federal administration and a republican administration at the state level). Specifically federal officials have claimed that the state had been gouging the federal government in charges for repairing several buildings (e.g. including the University of Southern California hospital). FEMA dispatched auditors to investigate the possibilities of fraud, and a "nasty public feud" ensued.

Concerns have also been expressed about the unfairness of imbalances in political power, and how these translate into differing levels of mitigation or recovery resources. In California, several interviewees pointed to how quickly bridges and highways were rebuilt in Los Angeles following Northridge, as compared with rebuilding in the San Francisco Bay area after Loma Prieta. While the Northridge event happened some five years later, reconstruction has been faster there, and (at least to Bay Area officials) this is attributed to the greater political importance in the state of Southern California.

Concerns are also expressed that interest group politics sometimes interferes with public safety. One interviewee noted that while schools in California are subject to the state's seismic retrofit requirements, hospitals have managed to stay exempt from this law. The explanation given is that the hospital lobby in California is a powerful one.

Interestingly, there have been proposals in the California legislature to require that patients admitted to hospitals be informed of the seismic risks associated with staying there. (So far, though, they have not prevailed politically).

Lack of political courage might also be seen in the efforts of politicians to avoid raising taxes in election years to pay for disasters. Governor Pete Wilson's plan to pay for the costs of Northridge through a state bond measure (which did not pass) was seen by many as a clear political tactic to avoid the issue before the fall 1994 elections. Critics of Wilson, such as State Senator Tom Hayden, advocated other ways to raise the funds that would have been, in the long run, much less expensive.

#### Assumptions in the Methods of Analysis and Choice

There is today a much greater awareness of the ethical assumptions, underpinnings and biases of particular tools and methods for making public decisions (e.g. ). Not surprisingly, decisions about mitigation and mitigation choices, are guided by tools, techniques, and methods which contain similar ethical assumptions.

We have encountered a number of other analytic tools and techniques from statewide seismic hazards mapping in California, to hurricane surge modelling along the Gulf and East Coasts...It is incumbent on those using these mitigation tools to be honest and forthright about their ethical assumptions, and their analytic limitations...

One tool that is frequently used in mitigation decisionmaking is benefit-cost analysis. While this tool can be useful in guiding societal choices it has a number of ethical assumptions, including the ability to quantify and place in monetary values all benefits and costs, the severe discounting of the future, and the assumption that maximizing social utility should guide choices about mitigation.

Historically, environmental benefits are inadequately taken into account (if at all) in benefit-cost analysis. The Galloway Report notes this, for instance, and is highly critical of the ways in which National Economic Development (NED) is calculated for federal water resources projects. It specifically notes the failure to adequately take into account values that are not easily quantified into dollars (Interagency Floodplain Management Review Committee, 1994, p.85):

Calculations of NED are meant to include all environmental and social benefits and costs for which monetary values can be obtained. The monetary focus of NED, however, does not give adequate consideration to unquantifiable environmental and social values. Because of their non-market nature, environmental quality, ecosystem health, the existence of endangered species, and other social effects are not easily quantified in monetary values. This limits formulation and acceptance of projects capable of striking a better balance between flood

damage reduction or other water resources development and the environment.

The Galloway report goes on to recommend the development of techniques that will be better able to take account of these non-quantifiable values. (8)

Critics of the Auburn dam proposal have made similar points, claiming that the environmental costs of this project were not taken into account in the National Economic Development (NED) calculations...

The utilitarian moral assumption of benefit-cost may obscure or deemphasize other equally important moral criteria or values, many of which have been identified and discussed in the other sections of this paper. Some mitigation projects may be ethically-defensible even where they are not cost-effective, or where the calculated benefits do not exceed the costs. The St. Genevieve levee is an example of such a project (where the computered benefit-cost ratio is a low .2). This project protects significant historic values, for current and future generations--values not adequately captured in the methodology of benefit-cost analysis. As we have seen, a number of mitigation programs may be based on distributive equity or fairness. It may not be cost-beneficial to seismically-retrofit buildings in low income neighborhoods, but this may be the morally correct thing to do.

#### Issues of Scientific and Technological Uncertainty

Many natural hazards mitigation policy disputes involve disagreements about the precise nature, magnitude and geographical extent of hazards. Natural hazards typically involves dealing with recurrence intervals, limited knowledge of the dynamic forces of events like hurricanes, and complex interactions between physical forces and topography and landscape. All of these factors mean that there is much uncertainty inherent in mitigation policy and decisions, and major ethical questions arise in how to address or deal with this uncertainty.

One dilemma faced by those involved in mitigation is how to present information about hazards and risks to the public. There is a concern that some have expressed of "scaring" or overly alarming the public, on the one hand, and conveying the false impression, on the other, that mitigation measures will fully safeguard or protect against disaster events.

Several interviewees expressed a sense of concern about the perceived precision of hazard maps and mapping programs. Ted Smith, who heads up the California seismic mapping effort, expressed the concern that people will find their homes on the maps and if located outside of a zone, will think (falsely) that they are free of worry about natural disasters. This raises the question whether public officials, planners, and others, have a duty to make special efforts to convey to the public the inherent uncertainties in such maps.

The recent report of Lincoln Institute of Land Policy on the Midwest floods, makes similar observations...

There may be very real and genuine disagreements about the science, and choosing between equally-defensible scenarios may represent a significant dilemma. The Auburn dam controversy illustrates well the importance of different scientific assumptions ...

## Personal Freedom, Lifestyle Choices, and Paternalism

Often hazard mitigation policy is about restricting the freedom of individuals (or communities) in order to bring about a broader level or pattern of public safety. We encountered in our case analyses a number of conflicts between individual desires and public needs. Perhaps the clearest example of this conflict is where government prevents an individual from building a home or structure in a high-hazard zone, say a floodplain or seismic fault zone. Following Hurricane Hugo, the provisions of the South Carolina Beachfront Management Act prevented many propertyowners from re-building in the so-called "dead zone." From the perspective of the state, clearing people and property from these risky locations makes great sense, yet it clearly conflicts with the desires of developers to build in these locations, and with certain housing consumers who wish to purchase homes in these locations.

Personal freedom, especially in the U.S. context, is a prized value and, understandably, there is concern wherever government restrictions curtail in some way or another these freedoms. In a host of ways, however, membership in society requires giving up certain personal freedoms in exchange for larger collective benefits. Individuals consent to abide by traffic laws because without them there would be little practical value to the freedom to drive. Many mitigation issues might be seen in a similar light. Restrictions on the amount of development in the Florida Keys (e.g. under their rate of growth ordinance) or in places like Sanibel island (Florida), restrict development in large part to preserve the ability of the entire community (or most of it) to evacuate when a storm threatens. Regional evacuation plans in Florida and elsewhere work in similar ways.

And, as discussed in earlier sections of this paper, mitigation programs sometimes take away certain personal freedoms but give back in exchange an assurance of safety and confidence that would be difficult to achieve individually. Building codes represent a case in point. While housing consumers might be expected to know more about the safety of their homes than they usually do (and should insist that the homes they purchase be built stronger), most individuals will not have the professional expertise or technical knowledge to evaluate the safety of a home they purchase. In this way, just as we do not expect to have to make a safety judgment each time we enter an elevator (because we assume that it has been inspected and certified by the government as being safe to ride) so also do we assume that the buildings we visit and

occupy achieve a minimum level of safety.

The ethical dilemma is often one of finding the right balance, and conflicts emerge where individuals feel that mitigation policies interfere to too great an extent with individual liberties. If someone's personal lifeplan involves living on an isolated barrier island, with no chance of evacuation, then they should be allowed to do this, some believe. If an individual accepts living in a seismically-deficient apartment building, then they ought to be permitted to make this personal choice.

Several interviewees talked about the lifestyle of living along the rivers in the Midwest. Referring to these residents as "river rats," the feeling was that for these people living there was a desirable way of life. "To them this is a lifestyle choice... you can't make these people like some other lifestyle ... This is how they like to live." And for many of these people (and communities) periodic flooding and cleaning-up from floods has been normal and endurable. Efforts to promote relocation out of the floodplain raises questions about whether such programs interfere with or interrupt these lifestyle choices.

In these discussions, the charge of "paternalism" sometimes arises--the belief that government is preventing a personal freedom or behavior exclusively or primarily for the benefit or welfare of that individual (e.g. "government knows better than you, if that is an acceptable risk"). (For a more extensive review of paternalism, see Beatley, 1994.) Defenders of restrictive forms of mitigation, however, are often quick to point out the many public costs and implications of individual actions. An individual may be prevented from placing himself or herself at risk to a natural disaster not primarily for their own benefit or good, but because there are substantial and serious public costs associated with these decisions. One especially serious implication of such individual actions is that others, namely police and fire personnel, may end up placing their own lives at risk when having to rescue these individuals in the event of a flood or hurricane.

Exselsier Springs, MO, one of the communities participating in the Midwest buyout program, illustrates these public costs. Here, flash flooding is a serious problem and the police department has frequently had to rescue occupants of the floodplain. Now that the floodplain has essentially been "cleared out," no dangerous rescues have been required and the city's police chief, for this reason, strongly supports the program.

A major ethical dilemma, then, becomes how to balance personal freedoms and liberties, and other important public values, including minimizing the external effects of individual choices. A number of different approaches to this balancing have been identified through our cases. One approach is to permit substantial individual risk-taking, but to ensure that individuals are well informed about the nature of these risks and the implications of their choices. The individual choosing to live on the remote barrier island may be permitted

to do so, but might be informed about the storm risks associated with the location (perhaps she would even be required to watch a videotape showing the force of previous hurricanes?). The Alquist-Priolo Act in California is perhaps the best example of risk-disclosure requirement. Under the Act, all prospective buyers of property within fault rupture zones are required to be informed of this. The new more extensive California seismic mapping program (which will include mapping of liquefaction, landslides and other hazard zones) will impose a similar requirement.

It may also be possible to assess individuals for the extra financial costs of living in high-risk areas. Some local jurisdictions have begun to establish hazard management zones (special taxing districts) which assess a small fee to cover the costs associated with, say flood cleanup, or floodplain maintenance. Interestingly, user fees are increasingly being applied to a wide range of individual actions that create public costs. The National Park Service (?) now has a policy, for instance, of charging mountain climbers for the costs of rescue should this be needed. Such an approach preserves personal freedom and choice-making, yet attempts to recoup at least some of the public costs associated with risky personal behavior.

Another approach was suggested in Exselsier Springs where the fire department maintains a list of decapitated buildings which it states it will not, in the event of a fire, send personnel into (i.e. because of the danger of collapse). Perhaps a similar list could be developed for properties in especially risky locations, where propertyowners are put on notice that in the event of a flood they cannot be expected to be rescued.

Making some mitigation programs voluntary is another way to minimize infringement on personal liberty. The Midwest floods buyout program was a success to many because it was a completely voluntary program--flood propertyowners did not have to sell their property if they did not want to. It was an (attractive) option presented to them, but most flood occupants did not feel it was being forced upon them. We heard repeatedly from officials in the Midwest that had the program been mandatory, it would simply not have been acceptable.

#### Property Rights and the Takings Issue

In the American context, infringement on private property rights raises special legal and ethical challenges. Under the U.S. Constitution (and most state constitutions) government is prevented from "taking" private land without just compensation. Courts have determined the such takings can occur through government regulations as well as outright government appropriation, though they have historically been vague about the exact point as when this occurs. Many of the more potent land use mitigation strategies, such as the approach of the original S.C. Beachfront Management Act, raise serious takings challenges. Indeed, one case, *Lucas v. S.C.*, centered precisely on the constitutionality of the BMA, and reached the

level of the U.S. Supreme Court. The case involved an owner of two small beachfront lots in the community of Isle of Palms, South Carolina. As a result of the enactment of the BMA, the owner was unable to build permanent structures on either lot (both lots were seaward of the ideal dune line). The owner, David Lucas, sued the state, claiming a regulatory takings had occurred, and was awarded \$1.2 million. The State supreme court reversed on appeal, agreeing with the S.C. Coastal Council's argument that the Act was intended to prevent the creation of a public harm--namely the destruction of the state's public beaches. Lucas appealed to the U.S. Supreme Court, which reversed and remanded, issuing an opinion strongly endorsing the need for public compensation in cases where government regulation takes away all development value or potential. In this interesting story, eventually the state purchased the lots from Lucas and resold them ...

The takings issue, then, is both a major policy and ethical question that must be considered in designing and implementing mitigation. The last decade or so has witnessed the emergence of a potent pro-property rights political movement. New state takings legislation has passed in a number of states, including our case study state of Florida. As well, takings legislation has been proposed and debated in Congress. Such proposals would dramatically change takings law, requiring government compensation when regulations devalue property even as little as ten percent. Almost any form of mitigation involving regulation could potentially be affected.

The takings issue raises a host of ethical questions, and a full examination of them is not possible in this brief working paper (see Beatley, 1994, for a more extensive discussion). At a very fundamental level, are questions about the meaning of private property. Ought private property rights be seen as largely absolute and inviolable, or are they necessarily constrained by the broader needs of the community and society? Do landowners have the right to reap the full and complete market value of their land, or are they only entitled to a reasonable economic return? What about cases where government regulations are only intended to prevent a landowner from creating a public harm (as opposed to securing a public benefit)--is compensation required in these cases as well? And if compensation is required after a certain devaluation threshold is reached, is this threshold applied to the entire parcel, or simply to the portion of the land affected by the regulation?

Ironically, charges of infringement of private property rights can also occur where government decides to withhold a mitigation or recovery benefit. Following the 1993 floods, for instance, some private levees were determined to be ineligible under the federal levee repair program. As the Galloway report notes, some property owners argued that denial of such benefits constituted an "abridgement of their entitlement" and a "violation of their property rights" (Interagency Floodplain Management Review Committee, 1994, p.184). (9)

Here are raised, as well, questions about the ethical



obligations of landowners. In the spirit of Aldo Leopold, we can wonder whether owners of land have in addition to rights to use and benefit from land, affirmative duties to act as stewards of the land, and to take into account the needs of the broader community and public. There is no question that individual decisions about the use of land have broader implications. Flooding along the Mississippi-Missouri, and many other watersheds, is in large part a function of landowners filling wetlands, creating impervious surfaces, destroying natural vegetation, etc. Acknowledgment of individual ethical obligations to the land, or relative to land, would perhaps do much to minimize the effects of certain natural disasters.

## Conclusions and Recommendations

What follow are some very tentative conclusions and recommendations from the previous discussions. These are presented in the form of statements of ethical guidance--ethical aspects and issues that should be considered in formulating and implementing hazard mitigation programs. While the ethical conclusions are the authors alone, and may not be universally accepted in the mitigation community, I offer them as starting-points and points for future discussion and debate.

1. Hazard mitigation policy invariably raises questions of ethics and ethical choices. Those involved in mitigation policy--elected officials, government administrators, and citizens alike--should be encouraged to view mitigation policy through an ethical lens and attempt to clarify and better understand the ethical assumptions and dimensions of mitigation.

2. The implementation of hazard mitigation measures relies heavily upon individuals in the design and building professions, especially architects and engineers. Efforts should be made to reinforce or reinvigorate the (stated) ethical standards and obligations of these professions, and that indeed these professional roles carry with them important responsibilities to the public. Individuals in a variety of hazard- or disaster-related professions should be encouraged to reflect on these ethical obligations, and their respective professional organizations should give greater attention to ethical standards, and how these professional ethical obligations translate into practice.

3. There is a considerable disagreement about who, ultimately, is responsible for ensuring safety. One conclusion is that a number of different individuals and groups have ethical duties to promote safety, including building owners, merchants, and insurance companies, among many others. Even the individual housing consumer has a degree of responsibility to educate herself and to make informed personal decisions about risks from natural disasters. Yet, we find that the collective has a special duty and that individuals and the public expect, and should expect, that government regulations and actions (e.g. through building codes and construction standards) will ensure the basic safety of homes and buildings.

Where people are allowed to occupy buildings and locations that are not safe, they have the right to be informed of these risks.

4. Mitigation ethics requires that similarly-situated individuals be treated as equally as possible, and that where differing benefits and treatment occur that those affected be explained the reasons for such. Efforts can and should be made to treat people proportionately to their unique circumstances. Mitigation ethics requires clear and consistent application of mitigation standards and requirements, both before and after a disaster event. Procedural fairness may require that public officials resist the natural human tendency to suspend or loosen requirements following a disaster to allow a quick return to normalcy.

5. Fairness in mitigation also implies that administrators have an a priori obligation to enforce mitigation law. Failure to enforce the law (e.g. the substantial improvement rule under the NFIP), amounts to treating unfairly the majority of citizens and propertyowners who have adhered to the law. A more ethical tact would be to seek to change the law, so that all affected parties are treated uniformly and consistently.

A greater mitigation (public) good--such as relocating people and property out of harms way--may sometimes be seen to overrule or supersede procedural fairness and equal treatment. There will often be ways, however, to achieve these larger mitigation goods without sacrificing equity and fairness, and mitigation officials have an obligation to develop and promote such solutions.

6. Ethical dilemmas in mitigation are very much about trade-offs between competing values. In structuring these choices mitigation officials should avoid making choices based on narrow economic criteria--but should carefully consider and evaluate the full range of ethical duties and claims that may be relevant. Mitigation officials should not only ask "What can we afford?" but the broader question, "What is ethically required?"

7. In considering the mitigation priorities of a community, officials should explicitly confront the relationship between the goal of saving lives and the goal of protecting property. Ideally, many mitigation policies and programs will be able to do both (building codes are an example), but where a choice between them is necessary, ethical mitigation gives moral priority to protection of human life.

8. Mitigation ethics explicitly acknowledges that there are duties to preserve and restore the nature environment. Mitigation strategies and policies that serve to destroy or damage the environment should be avoided, and those which respect, and ideally restore, the environment should be encouraged. Mitigation officials have an ethical obligation to search for mitigation solutions that overcome confrontations between environmental preservation and public safety/property protection. Sustainability offers the promise of a synthesis of

purpose between mitigation values and environmental preservation/restoration.

9. Mitigation ethics acknowledges the obligation to protect and preserve historic buildings and resources. Mitigation solutions which simultaneously protect public safety and preserve historically-valuable buildings and landscapes should be emphasized.

10. Mitigation ethics require careful attention to the distributive impacts and implications of mitigation programs and policies. Mitigation programs must be designed and implemented in ways which minimize negative impacts on the least-advantaged members of society. Moreover, mitigation ethics holds that all individuals and communities are entitled to share in a common level of public safety. In the distribution of mitigation and post-disaster benefits, special care must be exercised to ensure that all groups have equal access to these benefits.

11. Mitigation choices often hinge on what an acceptable level of risk is in a community. Any public discourse about mitigation must involve an explicit discussion of acceptable risk. A number of factors should be taken into account, including the nature of the risks experienced, the irreversibility of the impacts involved, the extent to which they are voluntarily assumed ... and will depend in part on many of the other values identified and discussed in this paper.

12. In making decisions and choices about mitigation, a broad notion of the moral community should be employed. Specifically, ethical mitigation requires consideration of the impacts of policy on, and the interests of, future residents and generations (temporal dimension), other communities (geographical dimension), and other forms of life (biological dimension). Especially compelling is a view of mitigation duties that takes a long moral timeframe--one which sees a fundamental responsibility to ensure that the people and communities to follow us are safe, and that their quality of existence is very high. On the specific question of illegal residents, ethical mitigation supports the provision of post-disaster services based on need, not on citizenship status.

13. Culpability holds that those individuals or entities that create or cause a hazard (or disaster) should bear responsibility for it. Those culpable, under ethical mitigation, can be asked to compensate, repair or otherwise rectify the circumstances.

14. Ethical mitigation requires sensitivity to the perceived or actual negative effects that mitigation or post-disaster projects may have on a neighborhood or community. Where the impacts are real, mitigation officials should look for ways to reduce or minimize them. Education and community dialogue may be appropriate where the impacts are more imagined than real. Efforts should be made to ensure that a particular neighborh-

ood or community has not been unfairly burdened with a disproportionate share of uses, projects or activities that generate negative impacts.

15. Who should pay for mitigation, and for the costs associated with disasters, will likely continue to be a contentious ethical and policy issue in the years ahead. Ethical mitigation supports shifting much of the financial burden to those states, communities and individuals who benefit from risk-taking behavior. There is little ethical basis to expect the larger public (e.g. federal, state) to cover the costs of mitigation projects (such as the proposed Auburn dam), which benefit primarily the constituents of a locality or region. Ability-to-pay, and need, are also factors that should be considered in determining a fair distribution of costs.

16. Government disaster assistance is increasingly seen as an entitlement--an expectation not simply to be assisted in the event of a disaster, but to be made whole. Such a position is not defensible ethically, nor likely to be economically tenable in the long run. Ethical mitigation suggests that some amount of assistance is reasonable, but that individuals and communities should bear some or all of the risk associated with living in a dangerous location, or in dangerous conditions, particularly where personal opportunities to protect and mitigate are available. Ethical mitigation also recognizes that government may have created, or helped to create these expectations. Mitigation officials have a moral duty to strive to actively correct or adjust such expectations in the future. Efforts to scale back disaster benefits to individuals and communities, then, should be accompanied by efforts to modify expectations accordingly.

17. How people are treated in the process of making mitigation and disaster recovery decisions is extremely important. Ethical mitigation recognizes the moral obligation to actively involve all members and groups in the community, and especially those parties that will be directly impacted by these decisions. Mitigation ethics, then, requires a democratic, participative process, in which peoples' concerns, ideas, and creative input should matter, and are taken in account.

18. It is primarily through the political process that decisions and choices about mitigation are made. Politicians, and others involved in the political arena, should accept that they too have ethical duties and moral constraints. While what it means to be operating ethically in the political realm is ambiguous, it at least requires the politician to: listen to all points of view and consider all perspectives in making decisions; consider and reflect upon the full range of moral issues and considerations that enter into a mitigation choice; treat people fairly and with dignity.

19. All analytic and decision tools used in mitigation contain ethical assumptions. Those involved in using these tools have an obligation to understand and be sensitive to these assumptions, and to be honest and forthright about them when findings and recommendations are conveyed to the public and to

decisionmakers. Cost-benefit and cost-effectiveness analyses, especially, raise questions concerning moral bias, and the outputs of such techniques must be tempered by a consideration of the full array of ethical concepts and obligations.

20. Scientists and mitigation personnel have an ethical obligation to convey to the public the inherent uncertainties of science, where they exist. There is an ethical obligation to convey to the public the nature of risks in as clear and understandable a way as possible, and which avoids giving a false impression of the accuracy and certainty of scientific predictions.

21. Other things being equal, mitigation programs and policies should respect the personal freedom and life-choices of individuals. However, government and society may have legitimate reasons to curtail certain personal freedoms, and to place restrictions on life-choices, when these freedoms and choices interfere with the freedoms of others, or in circumstances where individuals are not able to fully assess or comprehend (and can not be reasonably expected to assess or comprehend) the serious risks involved. Those mitigation programs and policies which interfere least with personal freedoms and choices should be given full consideration (e.g. hazard disclosure, voluntary relocation ... assessing individuals a hazard fee to cover the cost associated with living in a high-hazard zone).

22. Mitigation programs and policies sometimes involve restrictions on how propertyowners can use their land. This raises significant ethical questions about the nature and sanctity of private property rights in land, and how far government can fairly (and legally) go in regulating or restricting the use of land. If there are important public interests served by mitigation programs and policies, government has the right (indeed the duty) to control private use of land, especially where this serves to prevent or reduce public harms. There is no ethical basis in a modern society for landowners to expect to reap the maximal economic profit from their land. When a regulatory "takings" occurs remains ambiguous, but compensation is only ethically-required (and even this is debatable) when there is essentially no remaining economic use for the land. Owners of land must also recognize that duties attach to this ownership. Private landowners should not take actions which create significant harms and hazards for others or the broader public, or degrade or destroy the land and its natural abilities to reduce or mitigate natural hazards.

#### Notes

1. There are, of course, a host of other professions and professional organizations involved in one way or another in community building and development, and in hazard mitigation. Other important professional organizations include, for instance, the Association of State Floodplain Managers, the Association of State Wetlands Managers...

2. The grand jury reports are especially harsh in their

criticism of the system of inspection and code enforcement. In the words of the first report: "The effectiveness of this community's building inspection process has been questionable for decades. The process has remained vulnerable to innuendoes of corruption, at worst, and apathy at best...Essentially, we have been a community dependent upon the building industry to police itself...Lack of code enforcement contributed greatly to the property destruction and damage this community suffered. The evidence was abundantly clear as the rubble and remains of construction were observed. The opened guts of thousands of homes exposed countless violations of the SFBC and sound construction practices. No one, including the present staff of Dade County's largest inspection department, denies this blatantly unconscionable truth...Historically, the Dade County Building and Zoning Department has had a high turnover of leadership and has lacked adequate, qualified staff, particularly during the boom years of construction. The Department's staff has traditionally lacked adequate training and suffered from an ineffective inspection per inspector ratio. Shamefully, prior to 1991, no roofing systems expert existed for roofing inspections." Dade County Grand Jury, 1992, pp.10-11.

3. Under the Flood Insurance Reform Act...

4. States and communities may feel that they are treated inconsistently as well. While in many previous disaster events the federal share of recovery costs was 75%, the federal government has assumed a much higher share in several recent disaster events...

5. The Jordan Commons design incorporates a number of impressive features, including...

6. The historic importance of the town also led to some unusual efforts to deflect floodwaters during the floods...

7. This heavy financial reliance on the federal government, the Galloway report concludes, "is inconsistent with the philosophy that federal disaster assistance should be provided in situations where communities and states, due to the magnitude of damages, will exhaust their resources and not have the capability to recover on their own." (Interagency Floodplain Management Review Committee, 1994, p. 83). Among other things, the Galloway report recommends holding the federal share to no greater than 75%, consistently implementing this standard, and placing limits on federal assistance for communities not participating in the NFIP.

8. Specifically, it recommends the development and use of a "system-of-accounts analysis." See p.86, Interagency Floodplain Management Review Committee, 1994.

9. Another property rights complaint heard by the Galloway committee involved possible restrictions placed on "flood fighting" by individuals and groups. See page 184, Interagency Floodplain Management Review Committee, 1994.

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