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NOTES

Duty and Disaster: Holding Local Governments Liable for Permitting Uses in High-Hazard Areas

In the early morning hours of September 16, 1999, Hurricane Floyd came ashore at Wilmington, North Carolina. By the time the skies cleared, the storm had left twenty inches of rain in much of the eastern part of the state and had caused what Governor James Hunt called "a disaster like we've never had before in North Carolina." Flooding caused fifty-one deaths, stranded more than one thousand people, and closed parts of three hundred roads, including all major roads accessing a six-county region. State officials estimated that Hurricane Floyd caused $5.3 billion in damage in North Carolina.

North Carolina's experience with Hurricane Floyd vividly illustrates the role that development in high-hazard areas plays in turning natural hazards into natural disasters. North Carolina officials estimate that most of the 9,000 homes that suffered major storm damage were built in floodways or 100-year floodplains.

1. See Peter T. Kilborn, North Carolina Reeling in Hurricane's Aftermath, N.Y. TIMES, Sept. 20, 1999, at A1. The problems caused by Floyd's rainfall were exacerbated by the fact that they came on the heels of 16.5 inches of rain deposited by Tropical Storm Dennis just two weeks earlier. See David Firestone, High Water Strands 1,000 and Closes Roads in State, N.Y. TIMES, Sept. 18, 1999, at B5. Ronald Wall of the North Carolina Division of Emergency Management told reporters, "I don't know of anyone who's ever seen this much rain in North Carolina." Id. (quoting Ronald Wall).


4. See Firestone, supra note 1, at B5.


7. See generally Allison Dunham, Flood Control Via the Police Power, 107 U. PA. L. REV. 1098, 1100 (1959) ("Flood losses are caused by man, not nature. If man did not live and work on the flood plain, there would be no flood losses and no need for construction of flood prevention works.").

8. See NORTH CAROLINA EMERGENCY MANAGEMENT DIV. ET AL., HAZARD MITIGATION IN NORTH CAROLINA: MEASURING SUCCESS 6 (2000). Floodplains are measured by the estimated risk of flooding. The area that has a 1% chance of being covered by water in any given year is referred to as the 100-year floodplain because it should be submerged only once every 100 years, on average. See SCOTT FABER, ON
addition, the flood swept through twenty-four municipal sewage treatment plants,9 fifty hog waste lagoons, and three junkyards that were sited in floodplains.10 Millions of acres of the state's natural wetlands, which absorb flood waters when intact, already had been ditched and drained for other uses11 and offered no buffer against the flood.12 Development in floodplains is not unique to North Carolina, and the resulting pattern of development suggests that the current system of siting homes and businesses is deeply flawed.

Although North Carolina and other states cannot reduce the risk of natural hazards, they can reduce the degree of damage that natural hazards cause.13 State and federal agencies already encourage individuals and public entities to systematically reduce their exposure to natural hazard risks, a policy known as "hazard mitigation."14 Unfortunately, state and federal mitigation programs have achieved only partial success in discouraging development in hazardous areas because they are ineffective in altering local land use practices.15 For example, mitigation efforts have failed in part because even as state and federal governments have attempted to restrict development, they have encouraged new growth and reinvestment in hazard-prone

BORROWED LAND: PUBLIC POLICIES FOR FLOODPLAINS 8 (1996). The occurrence of a 100-year flood does not preclude its recurrence even within the same year. Scott Faber argues, however, that the use of the terms "floodplain" and "100-year flood" misleadingly represent floods as geographically and temporally predictable events, resulting in overconfidence among those who live in and near flood hazard areas. See FABER, supra, at 8.

12. See id.
13. See DENNIS S. MIILETI, DISASTERS BY DESIGN 27 (1999) ("The choices that are made about where and how human development will proceed actually determine the losses that will be suffered in future disasters.").
14. In the wake of Hurricane Fran in 1996, North Carolina bought 1,300 flooded homes and elevated an additional 700. See Wagner, supra note 8, at A4. The state's goal was to reduce the number of people and the quantity of privately owned property located in the path of future floods. See id. Similarly, federal programs, such as the John H. Chafee Coastal Barrier Resources System Act (CBRA), 16 U.S.C.A. §§ 3501-3510 (West 1999), and the National Flood Insurance Program (NFIP), 42 U.S.C. §§ 4001-4129 (1994), have attempted to limit development in high-hazard areas by preventing the use of federal funds or federally backed insurance in such areas. See infra note 49 and accompanying text (discussing these federal statutes).
areas by providing infrastructure grants and disaster relief.\textsuperscript{16} Moreover, mitigation policies at the federal level have achieved mixed results because federal mitigation efforts since the 1993 Midwest floods have focused on the acquisition and relocation of property located in high-hazard areas.\textsuperscript{17} Acquisition programs are problematic because they are very expensive and because they leave the responsibility for land use regulation to local governments.\textsuperscript{18} The combination of these factors is paradoxical: even as the federal government has assumed greater fiscal responsibility for what happens in floodplains, it increasingly has relied on methods of control that are beyond its direct influence.\textsuperscript{19} The result has been a

\begin{itemize}
  \item \textsuperscript{16} See id. at 35 ("Federal and state governments provide a host of financial incentives for hazardous coastal development, including subsidized flood insurance under the NFIP, disaster assistance . . . [and] development monies for highways and infrastructure."); see also DAVID R. GODSCHALK ET AL., COASTAL HAZARDS MITIGATION: PUBLIC NOTIFICATION, EXPENDITURE LIMITATIONS, AND HAZARD AREAS ACQUISITION 39 (1998) [hereinafter GODSCHALK ET AL., COASTAL HAZARDS MITIGATION] ("Public subsidies perpetuate an unending cycle of subsidized development, destruction and subsidized redevelopment."); RUTHERFORD H. PLATT, DISASTERS AND DEMOCRACY 291 (1999) (analogizing federal disaster policy to "driving with the brakes on" because it fuels development of hazardous areas through incentives, subsidies, and projects with one hand, even as it attempts to mitigate future losses with the other).
  \item Federal disaster relief policies and subsidies for reconstruction have been especially criticized for perpetuating the occupation of hazard-prone properties. See Scott Allen, Storm Brewing over Disaster Relief, BOSTON GLOBE, Sept. 20, 1999, at A1 ("The broad thrust of federal policy is to provide disaster grants, loans, and tax deductions that encourage investment in hazardous areas." (quoting Professor Platt)). Professor Platt argues that federal disaster relief initially was necessitated by federal investments that stimulated private development in hazardous areas. See PLATT, supra, at 11. He contends, for example, that the decentralized growth encouraged by federal highway and urban redevelopment programs led to construction in such hazard-prone areas as "stream valleys, unstable hillsides, accessible forestlands, and coastal shorelines." \textit{Id.} The ready availability of public relief creates an insurance effect known as a "moral hazard," in which landowners accept the risk of building in areas that would go undeveloped if they faced the true costs of future disasters. See MILETI, supra note 13, at 158 n.1; PLATT, supra, at 37-41; see also GODSCHALK ET AL., COASTAL HAZARDS MITIGATION, supra, at 39 ("Federal disaster assistance and flood insurance . . . ha\[ve\] facilitated coastal development by transferring much of the risks and costs of development from the private sector to the public sector . . . . The artificially low cost of developing property on coastal barriers creates a market bias in favor of development . . . .").
  \item See GODSCHALK ET AL., NATURAL HAZARD MITIGATION, supra note 15, at 66-67.
  \item See id. at 67. For a history of federal hazard mitigation policy, see generally PLATT, supra note 16, at 69-99.
  \item See NANCY S. PHILIPPI, FLOODPLAIN MANAGEMENT—ECOLOGICAL AND ECONOMIC PERSPECTIVES 59-60 (1996) (noting that because of its responsibility for dispersing disaster relief, the federal government bears the cost of floodplain management failures while floodplain regulation remains under the control of local governments). According to Philippi, "[t]he local authority to regulate floodplains continues to be the pivotal function upon which all else depends." \textit{Id.} at 60.
\end{itemize}
vacuum of accountability that has increased hazard risk.  

Some commentators have responded to these problems by calling for limiting federal disaster relief in hazardous areas, but such spending measures continue to enjoy tremendous political support. Taxpayers readily finance disaster rescue and recovery costs, and efforts to impose emergency costs on the victims themselves remain unpopular. Landowners in high-hazard areas, particularly coastal communities, oppose any transfer of disaster costs and argue that they already bear much of the cost through their insurance premiums. Property insurance, however, is unlikely ever to displace the demand for federal disaster relief; in practice, many at-risk property owners do not carry insurance. Moreover, there are


21. See id. at 291-94; Editorial, Awash in Tax Dollars, NEWS & OBSERVER (Raleigh, N.C.), Nov. 11, 1997, at A14 ("[T]he allocation of hundreds of millions in taxpayer dollars is exactly what has led the federal government to undermine what state officials have been trying to do for decades—discourage development in coastal areas that are vulnerable not just to hurricanes but to heavy storms of any kind."). California, for example, requires mandatory real estate disclosure statements for property located in a hazard area to include a statement that the disclosure "may harm the buyer's ability to receive disaster relief in the event of a disaster." Steven Tafoya Naumchik, Seller Beware: More Hazard Disclosure Requirements in the Sale of Real Property, 30 MC GEORGE L. REV. 713, 717 (1999). This Note does not argue that local government liability should preclude efforts to transfer the cost of losses to owners who purchase or build with notice of the hazard risk.

22. Between 1988 and 1997, Congress appropriated $30.1 billion in supplemental funds to pay for disaster relief and recovery. See Platt, supra note 16, at 24. President Clinton issued 189 disaster declarations in the fiscal years 1996, 1997, and 1998, a pace of more than one per week. See id. at 10. Declarations averaged 25 per year from 1984 to 1988, but climbed to an average of 45 per year between 1993 and 1997. See id. at 23. This increase is attributable to many factors, including high rates of growth along coast lines, see David R. Godschalk et al., Catastrophic Coastal Storms 2 (1989) [hereinafter Godschalk et al., Coastal Storms], and a series of particularly vicious hazard events, see Platt, supra note 16, at 22. Commentators also blame the growing number of declarations on the relative ease with which disasters are declared. See id. Professor Platt notes that as the number of declaration requests has increased, the percentage of disaster declarations granted has been increasing as well. See id. Not surprisingly, the highest approval rates on record were from fiscal years 1992 and 1996, the most recent presidential election years. See id.


24. See id. Such a policy would place the government in the expensive, time-consuming, and politically untenable position of attempting to recover funds from disaster victims even as they attempt to piece their lives back together.

25. See Godschalk et al., Coastal Storms, supra note 22, at 106; Nicholas Sparks, Editorial, Rebuilding the Coast: Worth Every Cent . . . , NEWS & OBSERVER (Raleigh, N.C.), Sept. 22, 1999, at A23. Insurance losses, however, also are passed along to policy holders outside hazard zones through higher premiums and insurance company defaults. See David M. Bush et al., Living by the Rules of the Sea 4 (1996).

26. See Interagency Floodplain Management Review Comm., Sharing the
costs to reconstruction—in terms of time, energy, natural resources, and other opportunities surrendered—that far exceed any private or public insurance reimbursement.  

In contrast to limited disaster relief, a mitigation-driven land use policy offers a promising approach for reducing hazard losses by avoiding development in hazard-prone areas. Mitigation-driven policy is unlikely to be pursued, however, unless those who knowingly allow private investments in dangerous areas bear the financial burden of any loss. Federal and state governments traditionally have retained only a supervisory role over land use decisions, leaving local government as the only entity to implement such a policy. Local governments have largely escaped responsibility for permitting development on hazard-prone properties even though they are in the best position to mitigate natural hazard damages through their ability to oversee directly their land use decisions and through their direct

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**CHALLENGE: FLOODPLAIN MANAGEMENT INTO THE 21ST CENTURY**

131 (1994) (noting that only between 20% and 30% of the buildings in identified flood hazard areas are protected by insurance); see also PLATZ, supra note 16, at 90 (noting that NFIP insurance covered only 2% of the damage inflicted by the 1993 Midwest Flood).

27. Hurricane Floyd was estimated to have left at least $1.3 billion in damage to eastern North Carolina alone, but that figure “doesn’t take into account the way the flood’s impact will ripple through the economy.” Dudley Price & Rah Bickley, Flood’s Worst Damage Is Invisible, NEWS & OBSERVER (Raleigh, N.C.), Sept. 26, 1999, at A1. Unassessed costs include higher unemployment rates, mortgages defaults by workers laid off from flooded businesses, lower property tax collection rates and lower future assessments, and lower bond ratings leading to higher public financing costs for reconstruction. See id. The interdependence of communities means that even those people who do not suffer major property damage from such disasters “increasingly need to draw on government resources” in order to recover. MILETI, supra note 13, at 121. For example, Hurricane Hugo, which struck South Carolina in 1989, elevated welfare rates in Charleston for years afterward. See Allen, supra note 16, at A1. Debris from that hurricane also consumed 17 years’ worth of landfill space. See id.

Disaster victims suffer psychological injuries as well as economic ones. See Krzysztof Kaniasty & Fran Norris, The Experience of Disaster: Individuals and Communities Sharing Trauma, in RESPONSE TO DISASTER 25, 40-50 (Richard Gist & Bernard Lubin eds., 1999). As with economic injuries, psychological harms affect secondary victims, including the primary victims’ neighbors, friends, and relatives. See id. at 42-43. Although studies show that psychological distress dissipates relatively quickly following a disaster, it persists longest when victims continue to live in the risk-prone environment. See Mark S. Salzer & Leonard Bickman, The Short- and Long-Term Psychological Impact of Disasters: Implications for Mental Health Interventions and Policy, in RESPONSE TO DISASTER, supra, at 63, 72-73. Studies following a 1972 dam collapse and flood found evidence of heightened incidence of anxiety and depression among victims 14 years after the disaster. See id.

28. See Ann Louise Strong et al., Property Rights and Takings, AM. PLAN. ASS’N J., Feb. 1996, at 5, 6 (observing that although property “oversight” responsibilities are divided between the federal and state governments, “local governments . . . are the entities that most frequently and pervasively act to influence the use of private property”).
control over the rate, timing, and location of development. Because of this ability to reduce hazard risk, local governments should be liable for land use decisions that increase the exposure of people and property to the path of predictable natural hazards. The Note analyzes two traditional causes of action that could be used to hold local governments accountable for development decisions. First, the Note argues that publicly permitted development that increases hazard risk to adjacent properties or the community at large constitutes a nuisance for which local governments should be liable. Second, the Note argues that local governments act negligently when they permit development in or extend public services to hazard-prone areas and should be held liable for the resulting damage. The Note then addresses governmental immunity and whether it provides protection against such claims. Finally, the Note addresses policy issues, concluding that local governments might have overly restricted their hazard mitigation efforts in reaction to the Supreme Court's ruling in *Lucas v. South Carolina Coastal Council* and that imposing a countervailing liability is necessary to spur mitigation efforts.

Natural hazards in the United States between 1975 and 1995 caused an estimated $500 billion in disaster losses. Although predicting the occurrence of specific hazard events is difficult—if not impossible—censusional and academic studies conducted in the wake of Hurricane Andrew and the 1993 Midwest floods concluded that many losses could be avoided through hazard mitigation. As a

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29. *See Godschalk et al.*, *Coastal Storms,* supra note 22, at 40-44 (explaining development management policies); *Philippi,* supra note 19, at 70 (noting that although the states and the federal government encourage mitigation, local governments must implement mitigation measures).

30. *See infra* notes 57-89 and accompanying text.

31. *See infra* notes 90-165 and accompanying text.

32. *See infra* notes 166-85 and accompanying text.


34. *See infra* notes 186-231 and accompanying text.

35. Natural hazards are “recurring natural phenomena, such as floods, hurricanes, and earthquakes.” *Godschalk et al.*, *Natural Hazard Mitigation,* supra note 15, at 4. This Note addresses intermittent, mappable hazards such as floods, coastal storm surges, landslides, and, to the extent that fault zones are mappable, earthquakes. Because the general location of these hazards may be predicted with relative accuracy, they are most suited to being addressed by land use policies that establish appropriate sites for development. Non-site-specific hazard measures, such as building codes, are outside the scope of this Note and are addressed only insofar as they provide analogies for legal or policy arguments.


37. *See id.* at 174-89.

38. *See Godschalk et al.*, *Natural Hazard Mitigation,* supra note 15, at 38-54 (discussing various studies and critiques). Mitigation is the practice of taking advance
result, both federal and private organizations increasingly have
turned to mitigation as a means of reducing the costs of disasters. 39

Mitigation techniques can be divided into two categories:
structural techniques, such as dams, levees, and other "armoring" of
land and buildings against anticipated hazards, 40 and non-structural
techniques, such as land use planning, regulation, and land acquisition
that rely on hazard avoidance. 41 Structural techniques have long been
popular because they are intended to reduce the vulnerability of
buildings and populations already present in hazard-prone areas. 42

One of the primary criticisms of structural techniques, however, is
that they displace hazard impacts by relocating the effects of hazards
from one location to another. 43 For example, coastal jetties capture
sand and build mitigating beaches on their updrift side, but reduce the
width of beaches on adjoining down-drift properties, thereby
subjecting those properties to greater hazard risk. 44 Structural
measures also may encourage development in areas adjacent to a
protective structure, thereby resulting in higher losses when the
structure fails. 45 By comparison, non-structural mitigation techniques
use growth management measures to limit development in hazard-
prone areas. 46 Federal and private actors have turned to such
measures because they present a more effective and sustainable

action to avoid or reduce long-term risk to people and property from natural hazard
events. See id. at 5.

39. See id. at 54–67.

40. See MILETI, supra note 13, at 23. Until the 1970s, flood risk was primarily
addressed through such measures. See PLATT, supra note 16, at 70. The wide use of
structural measures persisted despite commentators' long-standing support for alternative
approaches focusing on hazard avoidance. See, e.g., Dunham, supra note 7, at 1100
(arguing that by 1959, "the flood control literature ha[d] undergone an almost complete
shift in emphasis from consideration of measures to prevent floods to consideration of
human adjustment to floods").

41. See MILETI, supra note 13, at 24 ("Nonstructural mitigation measures attempt to
distribute the population and the constructed environment such that their exposure to
disaster losses is limited."). Land use planning, land use regulation, and public land
acquisition are typical non-structural techniques. See PLATT, supra note 16, at 70. Flood
hazards in particular have served as a research and development subject for non-structural
mitigation techniques. See id. at 69; see also PHILIPPI, supra note 19, at 47 ("What began
as flood control, controlling floods by building structures to contain them, has broadened
to include floodplain management, controlling and restricting the uses of our
floodplains."). For a discussion of the history of nonstructural hazard mitigation, see

42. See GODSCHALK ET AL., COASTAL STORMS, supra note 22, at 25.

43. See MILETI, supra note 13, at 25 (arguing that many structural mitigation
techniques do not prevent hazard damage, but merely relocate it).

44. See BUSH ET AL., supra note 25, at 24.

45. See PHILIPPI, supra note 19, at 76.

46. See MILETI, supra note 13, at 24.
solutions to natural hazard risk over the long term.\textsuperscript{47}

Over the past thirty years, a variety of federal programs have advocated non-structural methods of avoiding hazards.\textsuperscript{48} Typically, under the rules of these programs, states and local governments must undertake mitigation efforts as a condition of receiving federal funds or subsidies.\textsuperscript{49} In the past decade, Congress has conditioned the receipt of some federal disaster funds on the implementation of state and local mitigation programs.\textsuperscript{50} Observers, however, note that this particular approach has achieved only modest success.\textsuperscript{51} In reality, even though the federal government funds post-disaster reconstruction, it has little effective control over the use of that money to limit the recurrence of such disasters.\textsuperscript{52} In order to break

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\item \textsuperscript{47} See id. at 155-56 ("No single approach to bringing sustainable hazard mitigation into existence shows more promise at this time than increased use of sound and equitable land use management."). For a discussion of sustainable hazard mitigation, see generally id. at 30-35, and GODSCHALK ET AL., NATURAL HAZARD MITIGATION, supra note 15, at 525-51.
\item \textsuperscript{48} See PLATT, supra note 16, at 71. For example, the National Flood Insurance Program promotes at least four mitigation tools: floodplain mapping, minimum construction standards for floodplains, mandatory insurance, and public acquisition of flood-prone properties. See id. at 77.
\item \textsuperscript{49} For example, the National Flood Insurance Program, 42 U.S.C. §§ 4001-4129 (1994), and the John H. Chafee Coastal Barrier Resources System Act, 16 U.S.C.A. §§ 3501-3510 (Supp. 1999), were designed to reduce development in high-hazard areas. See 42 U.S.C. § 4001(e); 16 U.S.C.A. § 3501(b). The NFIP relies heavily on incentives to encourage local land use controls. See Alexandra D. Dawson, \textit{Land Use Implications of Wetland and Floodplain Regulation}, in \textit{1982 ZONING AND PLANNING LAW HANDBOOK} 235, 244 (Fredric A. Strom ed., 1982). The program is designed as a quid pro quo: the federal government offers flood insurance in return for a degree of local management over floodplain development. See id. at 243. The NFIP is lightly subscribed. See PLATT, supra note 16, at 30 (noting that only 20% to 25% of all flood-prone properties are covered under the program). The NFIP's effectiveness has been further circumscribed by the fact that it is "notoriously" willing to continue insuring structures that are damaged repeatedly, often without an increase in the insurance premium. \textit{Id.} at 31 (reporting that 40% of all NFIP payments, totaling $2.58 billion, have been for repetitive loss properties). The result is that the program is perceived as "equivalent to an 'entitlement' " for some property owners. \textit{Id.} at 32. In contrast with the NFIP, CBRA prohibits new flood insurance coverage and limits federal infrastructure expenditures in designated at-risk areas regardless of local mitigation activities. See \textit{id}. at 81. CBRA has been undermined, however, because it does not limit federal expenditures for barrier islands that already were developed or developing at the time of its passage. \textit{See id.}
\item \textsuperscript{50} The Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5121-5204(c) (1994), which Congress passed in 1988, requires that a portion of all disaster relief funds be reserved for projects that mitigate the effects of natural hazards. See \textit{id}. § 5121.
\item \textsuperscript{51} The first comprehensive study of the Act concludes that it has had limited effectiveness in reducing hazard damages. See GODSCHALK ET AL., NATURAL HAZARD MITIGATION, supra note 15, at 425-31.
\item \textsuperscript{52} See PLATT, supra note 16, at 93 (noting "a discontinuity between the rising level of
the cycle of reconstruction status quo ante, local governments must be successfully encouraged to adopt mitigation plans and policies.\textsuperscript{53}

Local governments may engage in non-structural mitigation in three ways. First, local governments can avoid siting public amenities, such as fire and police stations, schools, and wastewater treatment facilities, in hazard-prone locations.\textsuperscript{54} Second, local governments can avoid siting local infrastructure in high-hazard areas because doing so encourages the development of these areas.\textsuperscript{55} Finally, local governments can limit or prohibit the development of hazard-prone areas through zoning, setbacks, subdivision ordinances, and other development restrictions.\textsuperscript{56}

When local governments fail to take such measures, they imply that hazardous areas are "safe" for private development. Home and business owners rely on local governments to regulate the safety of development, so they settle near public amenities and infrastructure without realizing that they have placed themselves in harm's way. Although local governments have not been accountable to the federal government for actions encouraging hazardous development, this Note argues that courts can and should hold them liable to property owners by adapting two traditional causes of action to development and hazard mitigation decisions.

The first cause of action—nuisance—involves a use of real property that causes harm to neighboring landowners.\textsuperscript{57} North Carolina courts have defined nuisance as a "substantial non-trespassory invasion of another's interest in the private use and enjoyment of property" that substantially affects the "health, comfort or property of those who live near[by]."\textsuperscript{58} Applying this

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\item federal fiscal liability for disaster costs and the diminishing extent of federal political influence over development decisions that affect hazard vulnerability
\item See id. at 71.
\item See FABER, supra note 8, at 10 (arguing that local governments should set an example by not siting public facilities in high-hazard areas); GODSCHALK ET AL., COASTAL STORMS, supra note 22, at 177–80 (explaining that coastal development is highly influenced by capital facilities, such as roads, sewers, and water service). Twenty-four North Carolina wastewater treatment plants were flooded by Hurricane Floyd. See Alan Scher Zagier, Deluged, PLANNING, Feb. 2000, at 8, 10.
\item See GODSCHALK ET AL., COASTAL STORMS, supra note 22, at 177–80 (explaining how a locality can develop an explicit set of capital facilities extension policies designed to avoid high-hazard areas).
\item See id. at 167–71 (noting that hazard mitigation plans must be accompanied by development regulations in order to be effective).
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definition, the development of hazardous areas can be deemed a nuisance when it increases physical or economic risks to adjacent properties. Although traditional nuisance claims have focused on physical invasions of neighboring property, there is a strong argument in the hazardous areas context that recovery for a nuisance also should be allowed for non-property losses. Such losses include economic harms for increased disaster rescue and recovery costs necessitated by hazard-prone development and economic harms that occur long after the initial development.

The inequitable diversion of costs and damage from one property to another that nuisance law is intended to prevent is particularly evident in floodplains, where individual developments pose a future hazard to both their immediate and downstream neighbors as a result of the physical proximity of the properties.59 First, there is the risk of physical damage being caused by debris swept loose in a flood.60 Second, and more significantly, upstream development raises flood levels on downstream properties by reducing the capacity of the floodplain to absorb water at its historical rate.61 Scott Faber, the director of floodplain programs at the nonprofit conservation organization American Rivers in Washington, D.C., describes the 100-year flood as a bag containing 99 clear marbles and one black marble.62 Each year a local jurisdiction has the same chance of pulling the black marble from the bag.63 But the effect of floodplain development, Faber writes, is to increase the number of black marbles: “Anyone who fills a wetland, improves field drainage, builds or raises a levee, paves a parking lot, or channels a stream is essentially pulling out a clear marble and returning a black one, gradually increasing everyone’s chances of...

59. See Turner v. Del Norte, 101 Cal. Rptr. 93, 96 (Cal. Ct. App. 1972) (recognizing that buildings in the floodplain raise flood levels, posing a risk to buildings outside the current floodplain); Usdin v. State Dep’t of Envtl. Protection, Div. of Water Resources, 414 A.2d 280, 290 (N.J. Super. Ct. Law Div. 1980) (finding that floodplain regulation was justified in part by the injuries that could result from floodplain development, including “injury to onsite property, injury to offsite persons or property in the downstream path of the debris from a wrongful development, and injury to community members who drink or use water contaminated by inappropriate onsite development”); see also DANIEL MANDELKER, LAND USE LAW § 12.05, at 485 (4th ed. 1997) (noting that building in the floodplain raises flood levels, thus posing risks to an increased number of buildings).
60. See Usdin, 414 A.2d at 290.
61. See Turner, 101 Cal. Rptr. at 96 (recognizing that buildings in the floodplain raise flood levels, posing a risk to buildings outside the current floodplain); MANDELKER, supra note 59, § 12.05, at 485 (same).
62. See FABER, supra note 8, at 9.
63. See id. The black marble goes back in the bag after it has been pulled, making it possible to have hundred-year floods several years in a row. See id.
getting a black marble." Increasing the number of black marbles results in two classes of potential plaintiffs who suffer from upstream development: those whose properties suffer increased flooding and those whose properties are newly subjected to floodwaters.

Accordingly, two types of recovery should be available under a nuisance cause of action. First, a property owner who sustains actual damages caused or exacerbated by property a local government permitted in a floodplain should be able to recover those actual damages. Second, because the harm associated with floodplain development does not manifest itself until some time after the development is completed, property owners who are likely to suffer substantial interference with their property from this development should also be allowed to seek injunctive relief against the local government to prevent such development.

Under current law, governments are liable for actual damages sustained by a property owner if the government either created or contributed to a nuisance. A number of courts have held that "governmental licensing of businesses, activities[,] or land uses . . . [that] create[s] or maintain[s] a nuisance" is enough to create such liability. For example, the Georgia Court of Appeals has held a municipality liable for approving development that increased water runoff onto adjacent properties. In *City of Lawrenceville v. Heard*, the City of Lawrenceville approved development on a slope uphill from the plaintiffs' home. The uphill development appeared to be the cause of significant water runoff, which washed through the

64. Id.

65. Local governments are not immune to suit for nuisances. See, e.g., Columbus, Ga. v. Smith, 316 S.E.2d 761, 766 (Ga. Ct. App. 1984); see also 1 CIVIL ACTIONS AGAINST STATE AND LOCAL GOVERNMENT, ITS DIVISIONS, AGENCIES, AND OFFICERS § 1.22, at 76–77 (Jon L. Craig ed., 2d ed. 1992) [hereinafter CIVIL ACTIONS] ("The rationale is that a governmental entity has no more right to create and maintain a nuisance than a private individual." (citing Board of Educ. v. Riverdale, 578 A.2d 207, 210–11 (Md. 1990))).

66. 2 JOHN W. SHONKWILER & TERRY MORGAN, LAND USE LITIGATION § 27.05, at 285; *see also* Frustruck v. Fairfax, 28 Cal. Rptr. 357, 367 (Cal. Ct. App. 1963) (noting that a city's liability "is not necessarily predicated upon . . . the actual physical act of diversion" and that "[t]he basis of the liability is its failure, in the exercise of its governmental power, to appreciate the probability that the drainage system . . . would result in some damage to private property"); Lukas v. New Haven, 439 A.2d 949, 952 (Conn. 1981) (noting that a municipality will be liable for creating a nuisance through some positive act); *Columbus, Ga.*, 316 S.E.2d at 766 (holding the City liable for approving development that increased runoff and flooded plaintiffs' property). See generally 19 E. MCQUILLIN, MUNICIPAL CORPORATIONS § 53.59.40 (3d ed. rev. 1994) (surveying municipal liability for the creation or maintenance of nuisances).


68. *See id.* at 442.
plaintiffs' backyard and flooded their basement. The court held that the increased water levels constituted a nuisance and agreed that the City was liable.

Under the rationale espoused in Lawrenceville, a municipality would also be liable for approving development in hazardous areas. Much like uphill development, upstream development has a clear, predictable impact on future flooding. When such flooding invades downstream residents' properties and causes significant damage, those residents experience a substantial invasion of the use and enjoyment of their property within the traditional understanding of nuisance law.

Local governments' liability might even be stretched beyond the traditional limits of nuisance law to account for the unusual economic and temporal aspects of natural disasters. Nuisance law traditionally has focused on remedying direct physical harm to property. Several unique characteristics of natural hazards, however, provide a strong argument for also allowing injunctive relief for prospective or economic harms against local governments that permit development in hazard-prone areas. For instance, the most serious damage caused by development-related flooding is not the temporary interference with the use and enjoyment of a property owner's land, but rather, the long-term economic damage left behind. Moreover, the economic damage may occur years after upstream development is completed, depending on the timing of storms. These problems

69. See id. at 443.
70. Id. at 443-44.
71. Nuisance law has traditionally been a flexible doctrine that has been "given an expansive meaning by the courts." 2 SHONKWILER & MORGAN, supra note 66, § 27.05, at 284; see also First English Evangelical Lutheran Church v. County of Los Angeles, 258 Cal. Rptr. 893, 899 (Cal. Ct. App. 1989) (holding that nuisance law has "been applied by the Court to uphold prohibitions against a broad range of other uses of one's property"). Although nuisance law recognizes a landowner's right to put her land to productive use, see Aaron M. McKown, Note, Hog Farms and Nuisance Law in Parker v. Barefoot: Has North Carolina Become a Hog Heaven and Waste Lagoon?, 77 N.C. L. REV. 2355, 2361 (1999), it assures neighboring property owners the right to be free from any substantial interference with the use and enjoyment of their property. See Watts v. Pama Mfg. Co., 256 N.C. 611, 617, 124 S.E.2d 809, 813-14 (1962). These principles apply whether the problematic use is one that is actively dangerous or whether it is merely unpleasant or undesirable. Compare M & J Coal Co. v. United States, 47 F.3d 1148, 1154 (Fed. Cir. 1995) (applying the nuisance exception to the takings doctrine when federal officials ordered a stop to mining operations that caused dangerous subsidence of the surface), with City of Birmingham v. Scogin, 115 So. 2d 505, 514 (Ala. 1959) (requiring the defendant city to reduce odors from a landfill).
72. See MANDELKER, supra note 59, § 4.02, at 99.
73. See supra note 27 and accompanying text.
suggestion that courts need to be flexible if they are to provide property owners with any meaningful relief. Nuisance law should, by analogy to the instances of direct physical harm, provide a cause of action when a local government approves a hazardous land use, even though the harms to be remedied are prospective or largely economic.

Injunctive relief is the only appropriate remedy for prospective economic harms because no actual damages have occurred at the time the relief is sought. In practice, however, courts typically deny injunctive relief when plaintiffs claim that a legal use of a property will cause prospective harm to their property. A court will presume—until a plaintiff can demonstrate otherwise as a result of experience—that a legal land use can be performed in a manner that does not substantially interfere with the use and enjoyment of other properties. Moreover, to obtain injunctive relief, plaintiffs must demonstrate a diminution in value of their property that results from the nuisance. Plaintiffs may obtain injunctive relief, however, to prevent a prospective harm when they can demonstrate an immediate danger or an irreparable injury. Courts should be flexible in applying this standard in cases of hazard-prone development in order to facilitate the granting of injunctive relief. Courts should also

74. See Wilcher v. Sharpe, 236 N.C. 308, 312, 72 S.E.2d 662, 665 (1952) (denying an injunction to prevent the construction of a grain mill based on the plaintiffs claims that the mill would cause noise and dust that would interfere with the use and enjoyment of their homes); Dorsett v. Group Dev. Corp., 2 N.C. App. 120, 125, 162 S.E.2d 653, 656 (1968) (upholding the denial of a temporary injunction against the construction of an asphalt plant).

Legal uses of property that are not nuisances per se may become nuisances per accidens by virtue of their location. See Duffy v. E.H. & J. A. Meadows Co., 131 N.C. 31, 33, 42 S.E. 460, 461 (1902). This Note argues that development becomes a nuisance per accidens when it occurs in the floodplain. Although courts prefer that plaintiffs seek remedies for nuisances per accidens only when actual damages have been inflicted, see Wilcher, 236 N.C. at 311, 72 S.E.2d at 664, the denial of injunctive relief for a prospective harm does not preclude a subsequent cause of action for actual damages, see id. at 312, 313, 72 S.E.2d at 665.

75. See Wilcher, 236 N.C. at 311, 72 S.E.2d at 664.

76. See, e.g., Redd v. Edna Cotton Mills, 136 N.C. 342, 343, 48 S.E. 761, 762 (1904) (declining to enjoin a factory from blowing whistle blasts in the early morning and late evening in part because the jury apparently found that the noise had not impaired property values).

77. See Hooks v. International Speedways, Inc., 263 N.C. 686, 692, 140 S.E.2d 387, 392 (1965) (upholding a temporary injunction against the construction of a race track within 2500 feet of a rural church); Causby v. High Penn Oil Co., 244 N.C. 235, 240, 241, 93 S.E.2d 79, 83, 84 (1956) (holding that replacing an oil refinery that had previously amounted to a nuisance with another refinery of the same type was certain to create another nuisance and noting that "[e]quity does not require a man to stand idle, until his family has sickened or died"); Cherry v. Williams, 147 N.C. 452, 461, 61 S.E. 267, 270-71 (1908) (upholding an injunction to restrain the construction of a tuberculosis hospital).
recognize that some largely economic harms, such as increased costs for disaster recovery and reconstruction, will not be reflected in diminished property values. Adjacent property owners should be able to seek injunctive relief to prevent development in the floodplain when new structures are likely to increase the risk of future flooding to their properties or to impose significant disaster recovery costs. A cause of action for prospective and largely economic harms would broaden the definition of nuisance by equating these harms with a substantial interference of private property.

Although courts are more apt to find a nuisance when there has been a physical invasion of a plaintiff's property (such as when pollution from a neighboring use drifts onto her property), a physical invasion is not necessary. Indeed, many land use regulations restricting noxious uses hinge on the fact that development merely increases the risk of harm to neighbors. In announcing the nuisance exception to the Takings Clause in *Lucas v. South Carolina Coastal Council*, Justice Scalia, writing for the majority, identified a prospective harm that the government could address as a present nuisance. Justice Scalia noted hypothetically that a nuclear power plant that is sited on a fault line would constitute a nuisance despite the fact that the plant would cause no damage to its neighbors until the fault line beneath it triggered a disaster. The nuisance that is avoided by prohibiting or relocating the plant is not a present threat that causes repetitive damage, as in the *Lawrenceville* storm runoff case, but instead, is the risk of unreasonable future damage. Similarly, liability should attach to government decisions that license or permit development posing a reasonably predictable risk of creating unreasonable future interference with neighboring property.

If courts decided to recognize prospective and economic harms

78. An injunction allows the parties to determine the full extent of the harm and to investigate steps to mitigate that harm.
79. See *Mandelker*, supra note 59, § 4.02, at 99. In many hazard cases the dispute is over the threat of future physical invasions.
80. See *Just v. Marinette County*, 201 N.W.2d 761, 770-71 (Wis. 1972); see also *Mandelker*, supra note 59, § 12.05, at 485 (“Development in floodplains increases the flooding danger by diminishing the carrying capacity of the floodplain. This causal relationship between floodplain development and flood danger provides an important basis for upholding restrictive floodplain regulations against taking objections.”).
82. See *id*.
83. Likewise, when the government acts to prohibit or to restrict hazardous uses on the basis of their danger to the public, it should be liable for subsequently failing to enforce its rules and policies.
as nuisances, they would then have to decide whether non-physical harms in specific hazardous area cases constituted a "substantial" interference. Courts have occasionally recognized that hazardous land uses reach the threshold of substantial interference with neighboring properties when such uses create a risk of physical harm.\(^{84}\) Plaintiffs whose property is subjected to a heightened risk of future flooding suffer the same interference with the use and enjoyment of their property as those who are subject to repeated flooding. They face the same fear of losing people or property to rising water and flood-borne debris. They also share in the economic and social harms that a disaster inflicts on their community in general, including the costs of disaster recovery.\(^{85}\)

One state court has adopted an expanded definition of substantial interference that recognizes as a nuisance any activity that would increase the amount of public expenditures to remedy the effect of such activities. In *Turnpike Realty Co. v. Town of Dedham*,\(^{86}\) the Supreme Judicial Court of Massachusetts upheld floodplain regulations against a takings challenge in part because hazard-prone development imposes public costs for disaster recovery.\(^{87}\) Specifically, the court held that development in the floodplain increases the risk of harm to the entire community by exposing it to "individual choices of land use [that] require subsequent public expenditures for public works and disaster relief."\(^{88}\) The court held, in part because these greater public costs for disaster relief and recovery constitute substantial non-physical interference with the community at large, that land uses that would increase those costs could be regulated without compensation to the affected landowners.\(^{89}\)

Although *Turnpike Realty* provides an ideal model that courts should follow in liberally construing "substantial interference," courts need not adopt *Turnpike Realty* in order to determine that development in high-hazard areas constitutes a substantial interference. If those who stand to share in the common costs of a disaster are allowed to prevent development that would raise those

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\(^{85}\) See supra note 27 and accompanying text.


\(^{87}\) See id. at 899.

\(^{88}\) Id. at 896.

\(^{89}\) See Turnpike Realty Co. v. Town of Dedham, 284 N.E.2d 891, 899 (Mass. 1972).
costs, a homeowner who suffers exemplary risk as a result of that development should be able to recover for the nuisance created. By acknowledging that the risk of physical harm will result in a substantial interference, courts could hold local governments accountable for permitting such development. Even though recognizing nuisance liability will not reduce the future damage to individual property owners in the short term, over the long term, it would stem the perpetuation of hazard risk that results when local governments allow property owners to build in high-hazard areas or to restore damaged properties in high-hazard areas to their previously vulnerable state. Presumably, local governments that foresee being held liable for development in high-hazard areas will be less likely to permit such development.

A second cause of action that could be used to hold local governments accountable for their development decisions is based on a theory of negligence. Unlike nuisance, liability under this theory would not depend on whether a local government has created or contributed to hazardous development. Instead, courts would have to determine whether local governments owe residents a duty to act reasonably to limit exposure to hazards of which the government has actual or constructive notice. More importantly, negligence would allow relief for individuals who not only build outside hazardous areas and are flooded, but also for those who build in hazardous areas and do not realize the risk of such development because of their reliance on local governments' implicit assurances of safety.

The key issue in negligence claims is whether a duty exists. In general, local governments are held liable only for misfeasance, or acting unreasonably, but not for nonfeasance, or for failing to act at all. A duty usually arises with respect to local governments by virtue of the municipalities' control over hazards, as is the case with dangerous roads. Absent control, a local government may assume a duty to prevent harm or to warn of hazards if it takes actions that cause others to reasonably believe that the local government has

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91. See City of Pritchard v. Lasner, 406 So. 2d 990, 992 (Ala. Civ. App. 1981) (indicating that a city cannot be held liable for failing to exercise its authority to construct drainage); Coffey v. City of Berkeley, 149 P. 559, 560 (Cal. 1915) (holding that the City was under no duty to build a bridge across a dangerous stream bank); Hayashi v. Alameda County Flood Control & Water Conservation Dist., 334 P.2d 1048, 1051–52 (Cal. Ct. App. 1959) (noting that “it is probably the law that a flood district is under no enforceable obligation to build levees or other public improvements to keep out floods”).
taken responsibility for policing the problem.\textsuperscript{92} Although courts have not applied these general principles to the question of damage from private development in high-hazard areas, the general principles of negligence suggest that local governments can be held liable for failing to act reasonably in encouraging and regulating such development.

Once a duty is determined to exist, a related issue is the standard of care courts should adopt in evaluating whether a local government has satisfied its duty. Local governments should not be judged against their peer governments because few have undertaken serious mitigation efforts. Rather, they should be judged by analogy to the instances in which local governments have been held to the standard of care as a reasonably prudent individual. Local governments are expected to act like reasonably prudent individuals in their role as landowners\textsuperscript{93} and in providing public amenities such as streets,\textsuperscript{94} sewer services,\textsuperscript{95} and utilities.\textsuperscript{96} In these instances, the public is entitled to rely on the safety of facilities that the government operates and controls as if they were provided by a private party.\textsuperscript{97} For example, in Hayashi v. Alameda County Flood Control & Water Conservation District,\textsuperscript{98} the plaintiff alleged that the district had failed to repair a levee that had broken following a heavy rain.\textsuperscript{99} The plaintiff

\textsuperscript{93} See Hayashi v. Alameda County Flood Control & Water Conservation Dist., 334 P.2d 1048, 1053 (Cal. Ct. App. 1959) (holding the local government entity liable for failing to maintain a levee that it had constructed on its property).
\textsuperscript{94} See, e.g., Tyler v. Richmond, 191 S.E. 625, 627 (Va. 1937) (holding that although pedestrians must exercise "ordinary care," they are ordinarily entitled to assume that a sidewalk is unobstructed); 19 MCQUILLIN, supra note 66, § 54.122, at 553 ("In the absence of knowledge to the contrary, persons using a street or sidewalk have a right to presume ... that the way is reasonably safe for ordinary travel ...."). In the majority of jurisdictions, local government liability for unsafe streets is based on a common law duty to maintain the roads. See id. § 54.02, at 46. Other jurisdictions infer a duty to maintain safe roads from the municipality's general control over roads. See id. § 54.03.20, at 54. In a few jurisdictions the duty to provide safe roads has been created by statute. See id. § 54.05, at 59. For a discussion of the governmental duty to ensure safe roads, see generally FOWLER V. HARPER ET AL., 5 THE LAW OF TORTS § 29.7, at 643–53 (1986).
\textsuperscript{95} See, e.g., 18A MCQUILLIN, supra note 66, § 53.125, at 236 (citing to cases from more than 20 states).
\textsuperscript{96} See, e.g., City of Wichita Falls v. Lipscomb, 50 S.W.2d 867, 872 (Tex. Civ. App. 1932) (recognizing municipal liability for negligence relating to a local government's provision of water service).
\textsuperscript{97} See MARSHALL S. SHAPO, THE DUTY TO ACT: TORT LAW, POWER & PUBLIC POLICY 89 (1977) ("[I]t seems reasonable that the citizen expect a level of government responsibility for his safety that accords with the standard for comparable activities in which private enterprise undertakes the management of hazardous clusters of energy.").
\textsuperscript{99} See id. at 1049.
repeatedly notified district officials of the break, but the district failed to repair the levee, leading to subsequent damage of the plaintiff's property on two occasions. The court held that the district was under the same duty as a private landowner to maintain the levee in a reasonable manner and was therefore obligated to prevent the danger from materializing. Given the abnormal risk that government activities with regard to hazards may pose to public safety, governments should not be held to a lesser standard of care than the reasonably prudent individual.

To be held liable for dangerous conditions within its control, a government must have had actual or constructive notice of the dangerous condition and have failed, within a sufficient time, to remedy the problem. In the case of roads, notice of a dangerous condition can be established by showing that the government was or should have been aware of the hazard, either by having created it or by the passage of time sufficient to allow its discovery. Generally, courts have concluded that actual notice exists when a resident explicitly notifies the responsible entity of the hazard, such as when a landowner brings a hazardous situation to the attention of the local government. Liability attaches if the government then fails to act as a reasonably prudent person under the circumstances by failing to mitigate the hazard.

Even absent an express duty to safeguard or warn the public, local government may assume a duty to do so through certain actions. Under present law, a local government may be held liable for breaching a duty assumed when it takes actions that place third parties at risk of injury or otherwise induces reliance by third parties. Liability often results if the victim forgoes protecting

100. See id.
101. See id. at 1053.
102. See, e.g., Bowman v. Town of Granite Falls, 21 N.C. App. 333, 334, 204 S.E.2d 239, 240–41 (1974) (stating that a municipality's notice of a defect and its failure to remedy it are required for recovery in negligence); 19 MCQUILLIN, supra note 66, § 54.102, at 441. In some jurisdictions, notice requirements are determined by state statute. See 1 CIVIL ACTIONS, supra note 65, § 3.27, at 285–87.
103. See, e.g., Hughes v. Jahoda, 553 N.E.2d 1015, 1016–17 (N.Y. 1990) (mem.) (holding that notice of a dangerous condition was not required when the town had placed a utility pole too close to the roadway).
104. See, e.g., 19 MCQUILLIN, supra note 66, § 54.102, at 441 (citing more than 40 cases).
105. See, e.g., Hayashi, 334 P.2d at 1052.
106. See, e.g., Maloney v. City of Grand Forks, 15 N.W.2d 769, 773 (N.D. 1944); 5 HARPER ET AL., supra note 97, § 29.7, at 651.
107. See 2 SHONKWILER & MORGAN, supra note 66, § 27.02, at 277.
108. See Indian Towing Co. v. United States, 350 U.S. 61, 64–65 (1955); City of
herself in favor of reasonably relying on another—such as a local government—to address a hazardous situation. Such reliance on the government is reasonable if the government provides some assurance of safety by its efforts to mitigate a risk. In City of Pritchard v. Lasner, for example, the Alabama Court of Appeals held the City liable for flood damage that resulted when it stopped maintaining a drainage ditch adjacent to the plaintiff's property. The court reasoned that the City had assumed a duty to maintain the drainage ditch by repeatedly cleaning it in the past. The court noted that although the City may not have initially had a duty to keep the ditch clear, it assumed that responsibility once it undertook to do so and was liable for flooding that resulted when it ceased to maintain the ditch.

An assumption of duty more typically arises with respect to hazards when a municipality is charged with enforcing an ordinance or enforcing mandatory statutory requirements that are designed to ensure public safety. A cause of action in these circumstances is founded on the notion that an injured party reasonably relied to his detriment on the public entity's express or implied assurances. The courts have recognized two broad categories of safety assurances that justify reasonable reliance by the public: a government's affirmative act to warn of a public danger and a government's affirmative attempt to reduce a danger by enforcing minimum standards.

In the first broad category of cases, an affirmative act to warn of a public danger will result in liability if it is performed negligently. In Indian Towing Co. v. United States, for instance, a lighthouse operated by the Coast Guard failed, causing a tugboat and barge

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109. See RESTATEMENT (SECOND) OF TORTS § 324A (1965); cf. Sheridan v. Aetna Cas. & Sur. Co., 100 P.2d 1024, 1031 (Wash. 1940) (holding hotel owners not liable for failure to inspect hotel elevators when they had relied on the defendant insurance company's voluntary promise to make such inspections).


111. See id. at 992.

112. See id.

113. See id.

114. See 2 SHONKWILER & MORGAN, supra note 66, § 27.02, at 277.

115. See 19 MCQUILLIN, supra note 66, § 54.122, at 533–34.


operated by the towing company to run aground.120 The Supreme Court held that when the Coast Guard undertakes to provide a lighthouse, it has a duty to maintain that lighthouse in working order.121 Writing for the Court, Justice Frankfurter stated that "it is hornbook tort law that one who undertakes to warn the public of danger and thereby induces reliance must perform his 'good Samaritan' task in a careful manner."122 The Supreme Court of Washington echoed this holding in Brown v. MacPherson's, Inc.,123 in which the State had failed to publicly announce an avalanche warning.124 A noted expert had warned the State about the risk of an avalanche on the plaintiff's property.125 The State led the expert to believe that it would pass his information along to the parties at risk, but failed to do so.126 The court held that if the State leads others to believe that it will notify a party, then the State assumes a duty to warn that party.127 If the State then fails to exercise reasonable care in issuing the warning, either by giving an insufficient or inaccurate warning or by failing to issue the warning altogether, the State is liable for the plaintiffs' otherwise avoidable injuries.128

The second broad category giving rise to an assumption of duty is when a governmental entity affirmatively attempts to reduce a danger by enforcing minimum safety standards. While the majority of jurisdictions have held that municipalities are not liable for negligently inspecting structures for compliance with safety standards,129 some courts have held that once a governmental agency undertakes an inspection, it is under a duty to follow through in a reasonable manner.130 In Adams v. State,131 for example, the victims

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120. See id. at 62.
121. See id. at 69.
122. Id. at 64–65.
123. 545 P.2d 13 (Wash. 1975) (en banc).
124. See id. at 15.
125. See id. at 17.
126. See id. The State apparently misinformed the real estate developer of the extent of the avalanche risk and did not inform the plaintiff, a subsequent purchaser, at all. See id.
127. See id.
128. See id. at 18–19.
130. See Adams v. State, 555 P.2d 235, 240 (Alaska 1976) (holding that after inspecting and discovering fire hazards, "the state fire officials had a duty to proceed further with regard to the recognized hazards"); Wilson v. Nepstad, 282 N.W.2d 664, 673–74 (Iowa 1979) ("Municipalities are not going to be motivated toward meaningful inspections while
of a hotel fire sued the State of Alaska for the negligent enforcement of its fire code. The plaintiffs alleged that state inspectors had examined the hotel more than eight months before the fire and had uncovered several serious hazards, including a non-functioning alarm system. Despite having full notice that the building failed to meet minimum safety codes, the State failed to inform the hotel owners of the specific violations. The Alaska Supreme Court held that by undertaking to inspect the hotel, the State assumed a duty to ensure that its minimum safety codes were met and then breached that duty by taking no further action after discovering dangerous fire conditions at the hotel. The court concluded that the plaintiffs, as users of the hotel, were the intended beneficiaries of the safety standards and the foreseeable victims of a fire. Therefore, the State was liable to them for breaching its duty.

Local governments fulfill their duty to protect against some hazardous activities by providing notice of a hazard risk to those endangered by it. For example, if a government builds a road with a curve that it knows can be negotiated safely only at a certain slow

insulated from their employees' negligence with respect to these statutory duties [to inspect].""); Coffey v. City of Milwaukee, 247 N.W.2d 132, 139 (Wis. 1976) (observing that once an inspection is undertaken, "a duty to exercise reasonable care in so doing" arises); see also Hawes v. Germantown Mut. Ins. Co., 309 N.W.2d 356, 363 (Wis. Ct. App. 1981) ("Public policy does not preclude municipal liability for approval of plans and construction containing specific code violations where the injury is directly attributable to easily discoverable violations.").

132. See id. at 236–37.
133. See id. at 238–39.
134. See id. at 239.
135. See id.; see also SHAPO, supra note 97, at 96 ("[W]hen government undertakes an inspection, it should be liable for failure to follow up on discovered hazards when a prudent private person in possession of that knowledge and endowed with comparable expertise would seek corrective action."). The Adams court distinguished the case from instances in which no hazard is discovered during a routine inspection. 555 P.2d at 240. The court went on to hold, however, that the state has a duty to exercise reasonable care to discover fire hazards during inspections. See id. at 240–41. This extension of liability is reasonable because the third party relies on governmental action without regard to whether the hazard was discovered and neglected or was mistakenly overlooked. But see Modlin v. City of Miami Beach, 201 So. 2d 70, 76 (Fla. 1967) (holding that the negligent failure of an inspector to discover the danger that a building may collapse did not result in municipal liability).

136. See Adams, 555 P.2d at 241.
137. See id.
138. See generally 1 CIVIL ACTIONS, supra note 65, § 3.25, at 279 (observing that liability under tort statutes may attach for failing to warn of dangerous roadway conditions); id., § 2.13, at 137 (noting that the decision to warn or not warn of a road hazard is not protected by discretionary function immunity); id., § 2.12, at 132 (noting obligation to warn potential victims of a dangerous individual's release from custody).
speed, it has a duty to post a warning to motorists. The duty arises because in the absence of the warning, drivers are entitled to assume that the road is safe to be traveled at the customary speed. Generally, the duty to warn is limited to instances in which a governmental entity either has created or controlled the dangerous condition and had actual or constructive knowledge of the hazard. Although a governmental entity may assume that motorists and pedestrians will avoid most obvious hazards, municipalities are nonetheless required to mitigate preemptively those roadway dangers that reasonably may be anticipated to arise. In cases when dangers are obvious, most courts will hold local governments liable for failing to warn, but will reduce the amount of recovery to account for the plaintiff's knowledge of the hazard.

139. See Department of Trans. v. Neilson, 419 So. 2d 1071, 1078 (Fla. 1982). In Neilson, the Supreme Court of Florida held that governmental entities cannot be held liable for maintaining dangerous intersections because the placement of roads and traffic signals is protected by the discretionary function immunity. See id. at 1077-78; see also infra notes 173, 176 (discussing the discretionary function immunity). The court noted, however, that the immunity is curtailed when the governmental entity knows that a road design is inherently dangerous. See id. at 1078. In such circumstances, the government is under an obligation to warn of the danger. See id. Thus, because the failure to warn of a known danger is an operational level omission, a government will not be afforded relief under the discretionary function immunity. See id.

140. See SHAPO, supra note 97, at 88 (“A dangerous section of highway without the most specific warnings implicitly signals that it is safe for travel at generally accepted standards of motoring behavior.”).

141. See 1 CIVIL ACTIONS, supra note 65, § 2.8, at 120-22. With regard to roads, however, the government may be responsible for hazards that endanger motorists even if the danger arises from property not under its control. See Brown v. State, 58 N.Y.S.2d 691, 692 (N.Y. Ct. Cl. 1945) (“The State is obligated to maintain its highways in a safe condition for travel, not only with regard to obstructions and defects . . ., but also with regard to conditions adjacent to and above the highway which might reasonably be anticipated to result in injury and damage to the users thereof.”); Ford v. South Carolina Dep’t of Transp., 492 S.E.2d 811, 814 (S.C. Ct. App. 1997) (noting that the State of South Carolina “has a duty to use reasonable care to keep streets and highways within its control in a reasonably safe condition for public travel”). But see Bowman v. Town of Granite Falls, 21 N.C. App. 333, 334-35, 204 S.E.2d 239, 240 (1974) (holding that local government was not liable when a tree on private property fell across a public street and damaged the plaintiff’s car because even the residents had not even discovered the hazard).

142. See 19 McQUILLIN, supra note 66, § 54.15, at 94-95 (noting that municipalities are neither required to ensure ideal traveling conditions nor to protect the public from “normal hazards”).

143. See id. (“If the municipality has knowledge of facts from which it can reasonably anticipate that harmful consequences may result from its failure to act, it must assume more responsibility than the passive role of waiting for defects to develop and to be brought to its attention.”).

144. See Socorro v. City of New Orleans, 579 So. 2d 931, 939 (La. 1991) (holding that the City remained liable for failing to post “No Diving” signs even though the danger of diving was or should have been known to the victim, but allowing the recovery to be
Simply giving a warning, however, may not be enough for a local government to avoid liability in all circumstances. Whether a warning is sufficient to satisfy a government's duty depends on whom the government warns. If the government warns people who build in high-hazard areas of the dangers that inhere in such properties, then that warning is probably enough to satisfy its duty. This is particularly true in contributory negligence jurisdictions such as North Carolina. In contrast, if the government warns those who have already purchased property in hazard-prone areas based on previous governmental assurances, or who purchased outside a high-hazard area and who then sustain damage from property that the government permitted, that warning should not be sufficient. In those instances, the government's warning is too late to ameliorate the risk it created.

Applying these precedents to development in hazardous areas suggests that local government has a duty not to encourage development in high-hazard areas. Municipalities implicitly assure prospective builders and buyers that sites are not unduly hazardous when they permit development in or provide public services to those sites. Government building permits suggest to the permittee that

145. Only four states retain the doctrine of contributory negligence. These states include: Alabama, see Williams v. Delta Int'l. Mach. Corp., 619 So. 2d 1330, 1333 (Ala. 1993); Maryland, see Faith v. Keefer, 736 A.2d 422, 443 (Md. Ct. Spec. App. 1999); North Carolina, see Hall v. Kmart Corp., __ N.C.App. __, 525 S.E.2d 837 (March 7, 2000); and Virginia, see Lawrence v. Wirth, 309 S.E.2d 315, 317 (Va. 1983). Contributory negligence prohibits the recovery of damages to any party who itself was negligent, even if the degree of negligence was slight. See Keith D. Boyette, Note, Reconciling Comparative Negligence, Contribution and Joint and Several Liability, 34 WASH. & LEE L. REV. 1159, 1159 n.4 (1977). Accordingly, property owners who are warned of the dangers of building in high-hazard areas, but who ignore those warnings and engage in development will most likely be deemed to possess some degree of negligence for any damages that result from natural hazards. As a result, those property owners would be precluded from recovering any damages. See, e.g., Hall, 525 S.E.2d at 838 (holding that the doctrine of contributory negligence would bar a plaintiff's recovery when the plaintiff "actually knew of the unsafe condition or if a hazard should have been obvious to a reasonable person").

146. The breach of implicit assurances of safety will result in liability if they may be reasonably relied upon. See Brown v. MacPherson's, Inc., 545 P.2d 13, 18 (Wash. 1975) (en banc) ("Even where an offer to seek or render aid is implicit and unspoken, a duty to make good on the promise has been found by most courts if it is reasonably relied upon.").

minimum safety standards have been met. Public services, such as roads, also provide public assurances in that the government implicitly warrants that the recipient may rely on their safety.\(^{148}\) Moreover, the public is entitled to assume that the government considers the hazard risk to foreseeable public and private projects when it makes its public service investment decisions. People purchase and improve their property relying on the assurance of safety implicit in a government's decision to allow construction or to build roads, sewer lines, and other infrastructure in an area.\(^{149}\) Because such purchases and improvements are the direct effects of the government's action, the government should be held liable when it makes unreasonable assurances that result in the development of hazard-prone areas.\(^{150}\)

\(^{148}\) See 19 MCQUILLIN, supra note 66, § 54.122, at 533–34 (observing that pedestrians and motorists are entitled to assume that streets are reasonably safe for travel and that the government has complied with protective statutes and ordinances). Cf. Belair v. Riverside County Flood Control Dist. 764 P.2d 1070, 1075 (Cal. 1988) (finding that plaintiffs were reasonable in relying on the government's levee to protect their homes against floods that did not exceed its design capacity).

Similarly, the provision of roads, water, and sewer services may create an unsafe situation by similarly allowing or encouraging development in high-hazard areas. See GODSCHALK ET AL., COASTAL HAZARDS MITIGATION, supra note 16, at 39. Indeed, when Congress decided to restrict development on coastal barrier islands, it elected to do so through a ban on federal subsidies for infrastructure on those islands. See GODSCHALK ET AL., COASTAL STORMS, supra note 22, at 8 (estimating that withdrawing federal flood insurance and infrastructure grants could save $5.4 billion between 1984 and 2004 and arguing that comparable savings would be available to state and local governments that adopt a similar approach).

Some public services, such as utilities, pose a different liability concern than highways in that the user of a public utility would not seek to recover for the danger posed by the utility itself; rather, the liability would result from the government's implicit guarantee that an area is safe for development through its decision to locate public utilities there.

149. The siting of roads and water and sewer services are known to be "growth shapers." See DAVID J. BROWER ET AL., REDUCING HURRICANE AND COASTAL HAZARDS THROUGH GROWTH MANAGEMENT: A GUIDEBOOK FOR NORTH CAROLINA COASTAL LOCALITIES 92–144 (1987). Accordingly, localities should avoid placing roads and sewers in high-hazard areas, where they will predictably encourage development. See id. at 145. Where development is highly dependent upon public facilities, local government decisions will have an especially strong effect on where development occurs. See id. Flood levees also tend to induce reliance by invariably encouraging a higher rate of development behind them. See MILETI, supra note 13, at 25; PHILIPPI, supra note 19, at 23–24, 76–77.

Governmental actions that promote public safety naturally inspire the public's expectation of safety in reliance on those actions, and, in the words of one commentator, "[c]ommon expectations are the stuff of duty." Liability results from the government's inability to ensure the level of safety the public reasonably presumes to result from the government's program. As the Indian Towing Court noted, mariners should be able to reasonably assume that a lighthouse will warn of shallow water. Similarly, hotel guests reasonably assume that a building that has undergone a fire inspection does not pose an undue fire hazard. Likewise, the government's construction of public projects such as roads "communicates a concern for the individual welfare of prospective users that entails the further obligation not to tolerate traps in [such projects], and to rectify conditions that experience proves dangerous." The existence of such assurances may encourage individuals to forgo steps they might otherwise take to ensure their own safety, and the failure of the government to fulfill the obligations that it has assumed (as measured by a reasonable degree of reliance) leads to its liability.

Accordingly, when local government approves development plans and permits in high-hazard areas or approves the provision of public services to those areas, it assumes a duty to meet the

(holding that the city could be liable to a private party for an injury to fireman resulting from illegal building design approved by the city). Other courts more accurately describe the government's duty as an obligation to ensure that its own actions are not undertaken negligently. See, e.g., Wilson v. Nepstad, 282 N.W.2d 664, 673 (Iowa 1979) (holding that a city may be held liable for negligently performing an inspection it had a statutory duty to conduct).

151. See SHAPO, supra note 97, at 88-90; see also GODSCHALK ET AL., COASTAL HAZARDS MITIGATION, supra note 16, at 39 ("Government efforts to stabilize eroding shorelines or inlets often encourage further development and provide a false sense that development is secure . . . .'').

152. SHAPO, supra note 97, at 88. Indeed, in some instances, the level of common expectations is raised by background expectations about the standards inherent in governmental decision-making. Professor Shapo argues that in some instances "the role of government as a protector of physical security, and citizen dependence on that role, is such that, if anything, the responsibility of government should be judged more expansively than that of private parties." Id. at 90. Shapo gives as an example the case of highway design: "The government possesses superior information about hazards as well as the physical power necessary to produce safer conditions" resulting in "almost total motorist dependence" on the exercise of government power to assure reasonably safe conditions. Id. at 87.


155. SHAPO, supra note 97, at 88-89.

reasonable expectations of the persons who depend on those activities. The public holds a justifiable perception that government action to permit or encourage growth in certain areas carries an implicit acknowledgment that those sites are safe for habitation. As a result, property owners who are injured because they rely on these indicia of safety and choose not to take additional steps to protect their own interests should be entitled to recover from the negligent government.

Moreover, governments generally should not be able to escape liability by arguing that natural hazard risks are apparent dangers. For example, flood risk frequently is not evident to the purchaser of a property due to the infrequency of such events. In other instances, risk may be obscured by participants in the market, including developers, real estate agents, or financial lenders who want to encourage sales. Municipalities are more likely than purchasers, particularly those who are also new residents, to have notice of hazard risks to particular properties because the municipalities have experience with the location and extent of past disasters. Government surveys of risk areas also give local jurisdictions notice of the scope of damage that may be inflicted by “typical” natural disasters. As with highway dangers, notice of hazard risk could be

158. See GODSCHALK ET AL., COASTAL HAZARDS MITIGATION, supra note 16, at 15.
159. See MILETI, supra note 13, at 120 (“The extent to which a community is composed of relatively new residents . . . affects the extent of community and household ‘memory’ of past disasters.”).
160. Unfortunately, government surveys are not uniformly accurate. For example, flood insurance rate maps provided by the National Flood Insurance Program are frequently inaccurate as to the scope of floodplains for several reasons, including a lack of actual floods from which to extrapolate, insufficient analysis, and because they predate significant changes in land use that affect the flood level. See Katherine Bennett, A Look at the Effect of Floodplain Management Regulations on Development Patterns in Ten Northwest Communities, in FROM THE MOUNTAINS TO THE SEA—DEVELOPING LOCAL CAPABILITIES: PROCEEDINGS OF THE NINETEENTH ANNUAL CONFERENCE OF THE ASSOCIATION OF STATE FLOODPLAIN MANAGERS 448, 451 (1995); see also J. Andrew Curliss, State's Flood Maps Outdated, NEWS & OBSERVER (Raleigh, N.C.), Oct. 31, 1999, at A10 (noting that recently updated maps in Boone, Charlotte, and Durham, N.C. predicted flood levels of up to four feet higher than those on previous maps). Bennett concludes that the federal maps’ “liability to imprecision and inaccuracy” results in marked discrepancies between the mapped floodplains and the natural floodplain. Bennett, supra, at 449; see also Bob Williams & Matthew Easley, Why Epic Flooding Took State by Surprise, NEWS & OBSERVER (Raleigh, N.C.), Oct. 10, 1999, at B1 (reporting in the wake of Hurricane Floyd that floodplain maps in many of North Carolina’s worst-hit communities were outdated). Nonetheless, because these maps represent a widely accepted standard for where not to build, see PHILIPPI, supra note 19, at 22, they should provide a starting point for assessing notice for the purposes of establishing municipal liability.
imputed to the government by showing that hazard damage had occurred—either once or repeatedly—and that sufficient time had elapsed to allow for the discovery of the risk.

Local governments could fulfill their duty to address hazard risks reasonably by warning potential property owners of the risk in areas subject to significant or repeated losses. Hazard warnings only will be effective at reducing hazard losses, however, if they reduce the number of homeowners who build or live in floodplains. Proponents of publicly mandated real estate disclosure provisions6 claim that notice of hazards reduces the market inefficiencies—such as the lack of complete information—that promote development in hazard-prone areas.6 Nevertheless, in practice, such notice often may prove ineffective. First, development in hazard areas may depend on factors other than a lack of notice. For example, people often build in floodplains because land there is inexpensive6 and in coastal areas because private insurance and public subsidies are readily available.6 The second reason why notice is ineffective is that the methods by which notice is given may impair its effect on the market. For example, if a potential homebuyer is given a densely worded notice of hazards just prior to closing on her purchase, the momentum of the transaction may dissuade her from giving the warning as much consideration as she would have given a clearer disclosure made earlier in the transaction.6 Although these problems can be reduced by structuring disclosures effectively, a publicly mandated market disclosure program may not achieve the goal of reducing hazard exposure.

Regardless of the legal theory used, any suit against a local government regarding development in hazardous areas would have to deal with sovereign immunity. Traditionally, local governments were immune to most causes of action sounding in tort even if the governments or their agents acted negligently.6 Although

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161. Disclosure provisions generally require that potential purchasers be informed some time prior to purchase that the property is subject to certain hazard conditions. See GODSCHALK ET AL., COASTAL HAZARDS MITIGATION, supra note 16, at 15. Some disclosure statutes also require that all purchasers be provided with general educational materials regarding hazard risk and property ownership. See id.

162. See id. at iv.

163. See FABER, supra note 8, at 10.


165. See id. at 16 (observing that the effectiveness of hazard notification may be diminished if the notice is given too late, if it is unclear, or if it is not presented seriously).

166. See 1 CIVIL ACTIONS, supra note 65, § 1.3, at 11.
governmental immunities have been abrogated in most states,\textsuperscript{167} many jurisdictions have partially restored some common-law immunities by statute.\textsuperscript{168} The restored immunities commonly protect discretionary functions\textsuperscript{169} and duties deemed owed to the public at large.\textsuperscript{170}

In dealing with liability for development-related problems, courts have been reluctant to hold local government accountable for a number of reasons.\textsuperscript{171} First, courts do not wish to make governments the insurers of private property or development, especially when the developer or owner may have been partially responsible for the loss.\textsuperscript{172} Moreover, potential liability could prevent some governments from taking appropriate action, even in the case of safety.

\textsuperscript{167} See 1 id., § 1.8, at 21–31. Abrogation has been justified on the grounds that the municipality, rather than the individual victim, should bear the responsibility of its errors. See \textsc{Restatement (Second) of Torts} § 895C cmt. d. (1965).

\textsuperscript{168} See 1 Civil Actions, supra note 65, § 1.11, at 36–37.

\textsuperscript{169} The discretionary function provides that governments will not be liable for "a good faith exercise of their discretionary powers in a judicial, legislative, or governmental policy-making function." 2 Shonkwiler \& Morgan, supra note 66, § 26.04, at 261. As one court noted, "it cannot be tortious conduct for a government to govern." Department of Transp. v. Neilson, 419 So. 2d 1071, 1075 (Fla. 1982). In jurisdictions recognizing an exception for discretionary functions, governments are immune for policy-making functions, but not for negligent implementation of policy. See Bennett v. Tarrant County Water Control \& Improvement Dist. No. 1, 894 S.W.2d 441, 451 (Tex. App. 1995). For more information about the discretionary function immunity, see 1 Civil Actions, supra note 65, §§ 2.4–7, at 99–120.

\textsuperscript{170} Under the public duty doctrine, local governments and their agents are not liable for negligently performing duties owed to the public at large rather than to specific individuals. See 2 Shonkwiler \& Morgan, supra note 66, § 26.03, at 249. This doctrine rests on the principle that "a duty to all is a duty to no one." Hoffer v. State, 755 P.2d 781, 785 (Wash. 1988) (quoting J \& B Dev. Co. v. King County, 669 P.2d 468, 471 (Wash. 1983) (en banc)).

\textsuperscript{171} Some jurisdictions preclude governmental liability for negligent permitting under the public duty doctrine. See Hilliard v. City of Huntsville, 585 So. 2d 889, 892 (Ala. 1991); Modlin v. City of Miami Beach, 201 So. 2d 70, 76 (Fla. 1967); Hannon v. Counihan, 369 N.E.2d 917, 921–22 (Ill. App. Ct. 1977); Hoffert v. Owatonna Inn Towne Motel, Inc., 199 N.W.2d 158, 159–60 (Minn. 1972); Georges v. Tudor, 556 P.2d 564, 566–67 (Wash. Ct. App. 1976). To the extent that public services are provided pursuant to a governmental policy decision, some jurisdictions will protect those decisions under the discretionary function immunity. See, e.g., Klingenberg v. City of Raleigh, 212 N.C. 549, 553, 194 S.E. 297, 298 (1937) (holding that a municipality exercises discretion when adopting a plan for its streets); see also Blackwelder v. City of Concord, 205 N.C. 792, 795, 172 S.E. 392, 393 (1934) (distinguishing between immunity from liability for adopting a plan and liability for injuries resulting from negligent execution of the plan). See generally 1 Civil Actions, supra note 65, § 2.7, at 111–20 (discussing the differences between discretionary and ministerial decisions). Finally, local governments may be absolved of liability for negligent permitting by statute. See 1 Civil Actions, supra note 65, § 3.15, at 223–32.

\textsuperscript{172} See Hilliard, 585 So. 2d at 892; District of Columbia v. Fosman, 580 A.2d 1314, 1319 (D.C. 1990); Hoffert, 199 N.W.2d at 159–60; Georges, 556 P.2d at 566.
Despite these concerns, however, immunity should not absolve local governments from liability with regard to development in hazardous areas. Sovereign immunity is not a defense to nuisance because local governments are no more privileged to create a nuisance than are private individuals. With regard to negligence, a policy of not imposing liability minimizes the burden on local governments in the short-term, but perpetuates larger burdens on taxpayers in the long-term. Because natural hazards pose such an acute danger to life and property and cause such widespread costs and unevenly distributed damage, enhancing the long-term safety and equity of the community should be the top policy priority.

In contrast, the policy objections to liability have been overstated. For example, the fear that imposing liability on local governments will convert them into insurers misstates the role of government liability. Courts that reject immunity generally do not treat the government as an insurer and instead, often reduce recovery to the degree that a plaintiff undertook or contributed to an obviously dangerous activity. Courts that reject or amend immunity to permit a cause of action simply conclude that governments should take responsibility for their own errors. As one court has noted, government is unlikely to take responsibility for its actions because of the financial costs and inconvenience of correcting past mistakes in

173. See Hilliard, 585 So. 2d at 892.
175. See Socorro v. City of New Orleans, 579 So. 2d 931, 939-40, 942-43 (La. 1991) (holding that city remained liable for failing to post “No Diving” signs even though the danger of diving was or should have been known to the victim, but allowing recovery to be reduced for the carelessness of the victim). The acts of a landowner in developing property she knew to be subject to hazards could lead courts to find contributory negligence, especially when the landowner altered the property in a manner that increased the hazard risk, such as removing protective dunes on the coast, vegetation from hillsides, or wetlands from flood-hazard areas. A person is contributorily negligent when that person's conduct “falls below the standard to which he should conform for his own protection.” RESTATEMENT (SECOND) OF TORTS § 463 (1965). Courts also relieve governments of liability for damage solely attributable to extraordinary events. See Glisson v. City of Mobile, 505 So. 2d 315, 319 n.2 (Ala. 1987) (noting that a city is not liable for negligence when flooding would have caused the same damage anyway).
176. See Steinke v. South Carolina Dep’t of Labor, Licensing, & Regulation, 520 S.E.2d 142, 153 (S.C. 1999) (holding a state agency liable for its failure to inspect an amusement ride after the agency became aware that the owner had made a dangerous modification to the ride). The Steinke court noted that the purpose of inspections would be defeated if the government were not liable for its gross negligence in performing inspections. See id.
the absence of court-imposed liability.\textsuperscript{177} Because of this lack of motivation, a government that is protected by immunity may be more willing to tolerate ineffective programs than one that is vulnerable to liability.

Another reason cited for immunizing local governments from hazard-related liability is that liability could discourage hazard mitigating activities.\textsuperscript{178} Most local governments are not liable for nonfeasance,\textsuperscript{179} even when government action would reduce the risk of a public harm.\textsuperscript{180} Thus, some courts have argued that if local governments were liable for poorly implemented policies, some might choose not to incur that risk at all.\textsuperscript{181} Indeed, one court has suggested that imposing local government liability for hazards in projects that it had inspected "would serve only to destroy the municipality's motivation or financial ability to support this important service."\textsuperscript{182}

To counter such logic, courts that permit liability have noted that most local governments traditionally have been held liable for fundamental duties, such as the duty to provide safe roadways, and that such liability has not curtailed these activities.\textsuperscript{183} Furthermore, courts have recognized that increases in liability have not put an unbearable strain on governments.\textsuperscript{184} Indeed, disaster mitigation is often cost-effective: the cost of mitigation, including liability, is far outweighed by the hazard-induced losses that are prevented. In Alaska, for instance, fire inspections and liability for negligent

\textsuperscript{177} See id. at 673-74 ("Municipalities are not going to be motivated toward meaningful inspections while insulated from their employees' negligence with respect to these statutory duties [to inspect].").

\textsuperscript{178} See, e.g., Hilliard, 585 So. 2d at 892.

\textsuperscript{179} See City of Pritchard v. Lasner, 406 So. 2d 990, 992 (Ala. Civ. App. 1981) (indicating that a city cannot be held liable for failing to exercise its authority to construct drainage); Coffey v. City of Berkeley, 149 P. 559, 560 (Cal. 1915) (holding that a city was under no duty to build a bridge across a dangerous stream bank); Hayashi v. Alameda County Flood Control & Water Conservation Dist., 334 P.2d 1048, 1051-52 (Cal. Ct. App. 1959) (noting that "it is probably the law that a flood district is under no enforceable obligation to build levees or other public improvements to keep out floods").

\textsuperscript{180} See Coffey, 149 P. at 560 (holding that the failure to erect a bridge where a road neared a steep stream bank was a proper exercise of city's discretion, for which no liability would attach).

\textsuperscript{181} See Hilliard, 585 So. 2d at 892.

\textsuperscript{182} Id.

\textsuperscript{183} See Adams v. State, 555 P.2d 235, 244 (Alaska 1976) (noting that liability for road hazards has not stopped construction of highways and that limited liability for negligence in an inspection is unlikely to stop the state from continuing to conduct fire inspections); Board of Comm'rs v. Splendour Shipping & Enter. Co., 273 So. 2d 19, 25-26 (La. 1973) (discussing the ubiquity of government intervention and the need for governmental responsibility).

\textsuperscript{184} See Splendour Shipping, 273 So. 2d at 25.
inspections has proven far less costly than the fires would have been.185

Beyond the specific issues in the immunity debate, holding local governments accountable for hazardous development also is supported by broader policy and structural arguments. Unless municipalities are held liable by the courts, they may not have the ability or the political will to pursue the safest development restrictions.186 Many local governments are under significant political and economic pressure to accept or even encourage new development.187 Municipalities also may be concerned about liability if an attempt to remedy a hazard situation fails188 and about the risk that their regulatory measures will be deemed a taking of private property.189

The takings issue is particularly urgent in the aftermath of the Supreme Court’s 1992 decision in Lucas, which held that a South Carolina beach setback provision effected a complete taking that required the State to compensate the property owner $1.2 million.190 Commentators report that Lucas has had a chilling effect on local governments, which are afraid that strict rules and development limitations could make them liable for potentially millions of dollars in damages.191

A close reading of Lucas, however, suggests that local governments still have broad authority to mitigate damage from natural hazards and nuisances. Takings law traditionally distinguished between takings that created a public benefit, which were compensable, and those that prevented a public harm, which

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185. See Adams, 555 P.2d at 244 (arguing that the cost of inspections, including liability for negligent inspections, “is still less than the cost to the state of disastrous fires, in terms of fire-fighting effort, lost taxes, and the impact on the economy”).

186. See MILETI, supra note 13, at 144, 160. This reluctance often stems from an unwillingness to spend money combating low-frequency (albeit high-risk) events or from a political antipathy toward private property regulations. See id. at 160.

187. See GODSCHALK ET AL., COASTAL STORMS, supra note 22, at 43 (noting “the opposition of development interests to government intervention into the land development market”).

188. See MILETI, supra note 13, at 151. Local government liability, however, is unlikely to arise when a local government enacts regulations that successfully reduce hazard risk. See infra notes 219–33 (discussing how courts generally uphold regulatory efforts enacted to reduce hazard risks based on a government’s reasonable exercise of its police powers).

189. See MELTZ ET AL., supra note 59, at 263–64 (discussing growth management).


191. See PLATT, supra note 16, at 295 (“[T]he threat of Lucas-based lawsuits has caused public agencies at all levels of government to refrain from restricting property rights, even in the face of well-documented natural hazards.”).
were not.\textsuperscript{192} Recognizing that an analysis regarding whether a statute is effecting a benefit or preventing a harm is likely to devolve into an argument over semantics,\textsuperscript{193} the Supreme Court in \textit{Lucas} rejected the benefit-harm distinction in favor of distinctions drawn by the common law of nuisance for evaluating complete takings. \textit{Lucas} presented the question of whether a South Carolina state beach management statute that proscribed development within a certain distance of the water effected a taking.\textsuperscript{194} The Court held that when a regulation deprives a landowner of all economically viable use of his property, that deprivation will amount to a taking unless it is designed to prevent nuisance uses that had been traditionally prevented by

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\textsuperscript{192} See First English Evangelical Lutheran Church v. County of Los Angeles, 482 U.S. 304, 313 (1987) (holding that a temporary ban on reconstruction in a floodplain could amount to a taking if it were not a proper governmental purpose to enact such safety regulations as would deny all use of the property); Goldblatt v. Town of Hempstead, 369 U.S. 590, 596 (1962) (upholding the Town prohibition of mining as a valid exercise of police power); Mugler v. Kansas, 123 U.S. 623, 668–69 (1887) (declaring that "[a] prohibition [based] simply upon the use of property for purposes that are declared, by valid legislation, to be injurious to the health, morals, or safety of the community, cannot, in any just sense, be deemed a taking or an appropriation of property for the public benefit"; Usdin v. State, Dep't of Envtl. Protection, Div. of Water Resources, 414 A.2d 280, 290 (N.J. Super. Ct. Law Div. 1980) (upholding floodplain development restriction against a takings claim because the restriction had harm-prevention goals as its primary purposes); Just v. Marinette County, 201 N.W.2d 761, 768, 769 (Wis. 1972) (holding that land use regulations restricting the use of property to "natural and indigenous uses" does not effect a taking where it prevents harm to public waterways); see also PETER W. SALSCHE & TIMOTHY J. TRYNECKI, LAND USE REGULATION 84 (1998) ("Generally, if the regulation prevents a harm, the use of the police power generally has been upheld despite the impact on land use; if the regulation extracts a public benefit, however, such as a scenic easement, courts have held that a taking is effected.").
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Justice Stevens dissented from the Court's decision in \textit{First English}, arguing that it was not necessary for the Court to remand the case because it was reasonable to find that the church, like its similarly situated neighbors, was prevented only from creating a dangerous situation akin to a nuisance and, therefore, did not suffer a taking. \textit{See First English}, 482 U.S. at 325 (Stevens, J., dissenting). Justice Stevens contended that when a government regulation seeks to impose health and safety limitations on property use of the type at issue in \textit{First English}, "it may not be 'burdened with the condition that [it] must compensate such individual owners for pecuniary losses they may sustain, by reason of their not being permitted, by a noxious use of their property, to inflict injury upon the community.'" \textit{Id.} at 326 (Stevens, J., dissenting) (quoting Mugler v. Kansas, 123 U.S. 623, 669 (1887)). Therefore, Justice Stevens concluded that the "government . . . surely may restrict access to hazardous areas" under a power akin to that by which it may prevent nuisances. \textit{Id.} at 325–26 (Stevens, J., dissenting).

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\textsuperscript{193} See \textit{Lucas}, 505 U.S. at 1025–26 n.12 ("In Justice Blackmun's view . . . the test for required compensation is whether the legislature has recited a harm-preventing justification for its action. Since such a justification can be formulated in practically every case, this amounts to a test of whether the legislature has a stupid staff.").
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\textsuperscript{194} See \textit{id.} at 1008. The distance was calculated based on historical rates of erosion. \textit{See id.} at 1009.
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The majority reasoned that regulations that address health, safety, and welfare do not invoke takings, even when they prevent any economic use of a property, because a landowner’s title never included a property interest in the endangering use. Justice Scalia illustrated the Court’s holding with the example of the nuclear power plant that is discovered, after construction, to have been built on an earthquake fault. Justice Scalia reasoned that because no government would knowingly allow power plants to exist on such a dangerous site, there would be no taking in requiring the one particular plant to remove its structures. Therefore, Lucas demonstrates that the government can prevent a landowner from using her property in a manner that harms or risks serious harm to her neighbor.

The rationale for the Court’s finding that a taking occurred in Lucas stemmed from the specific facts of the case. The plaintiff, David Lucas, had bought, and was entitled to develop, two oceanfront lots prior to the law’s enactment. The enactment of South Carolina’s beach management statute, however, had the effect of declaring Lucas’s lots completely unbuildable. Justice Scalia, speaking for the Court, expressed skepticism that South Carolina’s law was intended to reduce hazard risk, noting that owners of existing structures were allowed to remain in the hazard area and rebuild after a disaster if their houses were not totally destroyed. The Court suggested that because Lucas’s neighbors—who lived on equally dangerous properties—were allowed to remain and rebuild, the hazard purposes of the statute were not its primary goal. Finally, Justice Scalia explained that many of the South Carolina legislature’s “harm-preventing” justifications for the beachfront setback “seem to

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195. See id. at 1027–29. Justice Scalia noted that the state’s power therefore is limited to the extent that it is entitled “to abate nuisances that affect the public generally” or to destroy property in order to prevent “grave threats to the lives and property of others.” Id. at 1029 & n.16.

196. See id. at 1027.

197. See id. at 1029–30.

198. See id. Justice Scalia’s other example of a nuisance suggests that inherent property rights do not include the right to flood a neighbor’s property: “[T]he owner of a lake-bed . . . would not be entitled to compensation when he is denied the requisite permit to engage in a landfilling operation that would have the effect of flooding others’ land.” Id. at 1029.

199. See id. at 1008.

200. See id. at 1008–09.

201. See id. at 1024–25 n.11.

202. See id.
us phrased in 'benefit-conferring' language."203 As a result, the Court remanded the case to the South Carolina Supreme Court.204

Since Lucas, other courts have held that hazardous land uses constitute a nuisance for which Lucas-style takings claims will not be available.205 In M & J Coal Co. v. United States,206 for instance, the Court of Appeals for the Federal Circuit denied a takings claim in which the Department of the Interior ordered the defendant's mining operations to halt after the company caused significant subsidence of the surface above the mine.207 M & J argued that it had purchased and held title to the right to subside the surface.208 The court concluded that although M & J's title granted it the right to subside the property above the mine, the right to create a hazard to public

203. Id. In his dissent, Justice Blackmun identified the prevention of hazards as the primary purpose behind the regulation and would have upheld the regulation on that reasoning. See id. at 1039–40 (Blackmun, J., dissenting). Cf. Turnpike Realty Co. v. Town of Dedham, 284 N.E.2d 891, 896 (Mass. 1972) (upholding local floodplain regulations and noting that a provision advocating wildlife conservation was seeking an incidental benefit and did not conflict with the enabling legislation's primary goal of reducing hazard risk); see also Platt, supra note 16, at 151 (observing that the Court "said nothing whatsoever about coastal hazards in the Lucas case itself").

204. See Lucas, 505 U.S. at 1032. On remand the South Carolina Supreme Court rejected the State's argument that a common law nuisance basis existed to prohibit construction on Lucas' property, therefore, holding that the statute effected a taking. See Lucas, 424 S.E.2d 484, 486 (S.C. 1992).

Justice Stevens repeated his harm-prevention argument in his dissent to Lucas, arguing that the development of hazard-prone property was a proper use of the state's police powers. See Lucas, 505 U.S. at 1075 (Stevens, J., dissenting). Justice Stevens did not contend, and Lucas did not decide, however, whether construction in hazard areas constitutes a "noxious use." Although the Court appeared to believe that development of the lots at issue in Lucas was not a nuisance because it would not have increased the harm to neighbors, see id. at 1024–25 & n.11, coastal geologists have noted that even though shorefront development may not affect its lateral neighbors, it can increase the risk of flooding to inland properties, see Bush et al., supra note 25, at 24, 50, 55–56, 60 (arguing that development on coastal barrier islands poses a risk to adjacent properties). Ironically, in the wake of Lucas, commentators expected that the decision would result in a broader view of what constitutes a nuisance. See Robert H. Freilich & Elizabeth A. Garvin, Takings After Lucas: Growth Management, Planning, and Regulatory Implementation Will Work Better Than Before, in After Lucas: Land Use Regulation and the Taking of Property Without Compensation 53, 68 (David L. Callies ed., 1993).

205. See M & J Coal Co. v. United States, 47 F.3d 1148, 1155 (Fed. Cir. 1995); see also Wilson v. Commonwealth, 597 N.E.2d 43, 44–46 (Mass. 1992) (holding that the state's failure to permit beachfront property owners to erect a seawall before erosion destroyed their homes did not constitute a taking and, in dicta, distinguishing the case from Lucas on the grounds that the state may prohibit uses that pose a risk to others or to the state).

206. 47 F.3d 1148 (Fed. Cir. 1995).

207. See id. at 1155. The subsidence caused significant harm to nearby private property, public utility connections, and the town's water storage tank. See id. at 1151–52.

208. See id. at 1152–53.
safety is never part of a landowner's property rights. The court remarked that "[j]ustice and fairness do not require that the community at large bear the 'burden' of M & J's inability to mine in a manner that is safe to the public."210

Despite the fear of takings claims, the premise that local government may reduce hazard risk through the regulation of private property is generally sound. The Supreme Court has held that regulation of development in hazardous areas to limit damage from natural hazard events is a proper use of local governments' police powers.211 The police powers authorize local governments to protect and promote the health, safety, and welfare of their citizens.212 Courts have held that police powers authorize governments to act, not only through zoning213 and the enforcement of building codes,214 but also through regulations that preserve open space215 and limit hazard-prone development in floodplains.216 The public power to regulate

209. See id. at 1154.
210. Id. at 1155.
211. See Dolan v. City of Tigard, 512 U.S. 374, 386–87 (1994) (holding that regulation of floodplains to prevent flooding is a legitimate public purpose). In Lucas, the plaintiff challenged a statewide beachfront setback regulation that was designed in part to "protect life and property." Lucas, 505 U.S. at 1021 n.10. While upholding the challenge on other grounds, the Court noted that the plaintiff had not challenged the state's police power to enact the legislation. See id. at 1009; see also PLATT, supra note 16, at 157 (noting that Lucas "need not be cause for alarm to hazard mitigators if it is read carefully"). Having a proper governmental purpose is important because a taking will result if the regulation does not serve a proper purpose, even when the regulation does not completely eliminate the value of the property. See Keystone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470, 485 (1987).

212. See Euclid v. Ambler Realty Co., 272 U.S. 365, 395 (1926); Corn v. City of Lauderdale Lakes, 997 F.2d 1369, 1375 (11th Cir. 1993); Mestre v. City of Atlanta, 255 F.2d 401, 403 (5th Cir. 1958).
213. See Euclid, 272 U.S. at 397 (upholding the separation of incompatible uses through zoning); Shea v. Board of Appeals, 622 N.E.2d 1382, 1385 (Mass. App. Ct. 1993) (holding that a town may refuse to grant permits to build houses on lots lacking sufficient access for emergency vehicles).
214. See Hidden Oaks, Ltd. v. Austin, 138 F.3d 1036, 1043–44 (5th Cir. 1998) (holding that a municipality's blocking of utility service to substandard housing to keep it unoccupied and to ensure that it is brought up to code is a proper use of police powers). The district court in Hidden Oaks relied upon Camara v. Municipal Court, 387 U.S. 523 (1967), which held that "the police power of municipalities to impose and enforce ... minimum standards [extended to] existing structures' and ... that 'the public interest demands that all dangerous conditions be prevented or abated.' " Hidden Oaks, 138 F.3d at 1043 (quoting Camara, 387 U.S. at 535, 537).
216. See Dolan, 512 U.S. at 386–87; Responsible Citizens in Opposition to the Floodplain Ordinance v. City of Asheville, 308 N.C. 255, 265, 302 S.E.2d 204, 211 (1983); see also MELTZ ET AL., supra note 59, at 227 ("Protecting the health and safety of the public is the foremost justification for all police power regulations, and floodplain regulations have long been recognized in this category."); 1 EDWARD H. ZIEGLER, JR.,
land use for health and safety purposes is not unlimited, but will result in a "categorical" taking only if it compels a physical invasion of private property or if it "denies all economically beneficial or productive use of land."

Fortunately, hazard mitigation is unlikely to trigger a successful takings challenge. First, Lucas-style categorical takings apply only when the government prohibits all economically beneficial use of land. Such complete deprivations are rare, although some uncertainty remains in this area because the Court has not explained in detail how to determine when no economic use remains. In the

RATHKOPF'S THE LAW OF ZONING AND PLANNING § 7.04[2], at 7-21 (4th ed. 1998) (noting that no court has held the government's control of flood-prone areas to be ultra vires). The police power authority is frequently cited in state legislation enabling local control over development in floodplains. See 1 ZIEGLER, supra, § 7.04[2], at 7-22. Nevertheless, courts have been willing to infer such authority, however, even when it is not explicitly granted. See Turnpike Realty Co. v. Town of Dedham, 284 N.E.2d 891, 894 (Mass. 1972).

217. See Vartelas v. Water Resources Comm'n, 153 A.2d 822, 824 (Conn. 1959) (upholding a ban on construction in a floodplain, but observing that "[t]he police power has limitations in the extent to which it can properly destroy or diminish the value of property" and that "[w]here those limitations would be exceeded, the power of eminent domain must be used").


219. Lucas, 505 U.S. at 1015-16. Less than complete reductions in the value of land do not trigger a "categorical" taking. See id. at 1015-16 & n.6; see also A-S-P Ass'n v. City of Raleigh, 298 N.C. 207, 218, 258 S.E.2d 444, 451 (1979) (upholding a historic district ordinance and noting that "the mere fact that an ordinance results in the depreciation of the value of an individual's property or restricts to a certain degree the right to develop it as he deems appropriate is not sufficient reason to render the ordinance invalid").

220. See Lucas, 505 U.S. at 1028-29. A taking may result from less than complete losses when the regulation does not "substantially advance legitimate state interests." Keystone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470, 485 (1987) (quoting Agins v. City of Tiburon, 447 U.S. 255, 260 (1980)). The Court has repeatedly held, however, that hazard mitigation is a legitimate state interest. See supra note 214 and accompanying text.

221. See Lucas, 505 U.S. at 1018; see also Front Royal & Warren County Indus. Park Corp. v. Town of Fort Royal, 135 F.3d 275, 286 (4th Cir. 1998) ("Not all regulatory deprivations amount to regulatory takings, and a regulatory deprivation that causes land to have 'less value' does not necessarily make it 'valueless.'"); MELTZ ET AL., supra note 59, at 141 ("Total takings arise in relatively few cases.").

222. In Lucas, the Court acknowledged the difficulty of this problem, especially when the Court itself has not made clear the basis for measuring total loss. Lucas, 505 U.S. at 1016-17 n.7 (noting that "uncertainty regarding the composition of the denominator in our 'deprivation' fraction has produced inconsistent pronouncements by the Court"). In his dissent to Lucas, Justice Stevens argued that the land was not "valueless," noting that the plaintiff could have used the beachfront property for recreation or could have sold it to his
case of floodplain restrictions, government regulations that limit the use of private property to agriculture, passive recreation, or even parking have been held to preserve sufficient economic uses. Moreover, local governments have even more authority to abate nuisances than they do to regulate generally. With regard to nuisances, Lucas suggests that governments can take abatement actions that completely deprive landowners of all economically viable use of their land without effecting a taking. Thus, in such situations, the government is not "taking" a private benefit from the land owner, but rather, is acting to prevent the landowner from obtaining private benefits from actions that harm neighboring landowners or the public at large.

Lucas may have frightened governments from actions that reduce hazard risk and yet fall well short of complete takings. With or without Lucas, there will be instances in which communities may have to purchase land to avoid development. Nonetheless, in most instances, a taking may be avoided—and the public good may be equally served—by limiting the use of hazard-prone property. For example, communities can slow or redirect development through their capital facilities policies without taking property. Zoning neighbors as a buffer. Id. at 1065 n.3 (Stevens, J., dissenting). At least one lower court has held that there is no inherent right to alter property to achieve an economic return when it will cause harm to neighboring property. See Just v. Marinette County, 201 N.W.2d 761, 768 (Wis. 1972) ("An owner of land has no absolute and unlimited right to change the essential natural character of his land so as to use it for a purpose for which it was unsuited in its natural state and which injures the rights of others.").

223. See Turnpike Realty Co. v. Dedham, 284 N.E.2d 891, 894 (Mass. 1972); Krahl v. Nine Mile Creek Watershed Dist., 283 N.W.2d 538, 543 (Minn. 1979); MELTZ ET AL., supra note 59, at 228.
224. See Lucas, 505 U.S. at 1027.
225. See Vartelas v. Water Resources Comm'n, 153 A.2d 822, 824 (Conn. 1959) ("The police power regulates use of property because uncontrolled use would be harmful to the public interest. Eminent domain, on the other hand, takes private property because it is useful to the public." (citing Town of Windsor v. Whitney, 111 A. 354, 356 (Conn. 1920))). Nuisance law promotes the principle that a person cannot use her own land in a manner that injures another's land or the public in general. See MELTZ ET AL., supra note 59, at 213.

226. For a discussion of land use management tools available to local governments, see generally BROWER ET AL., supra note 154, at 92–145; MILETI, supra note 13, at 156–58.
227. See BROWER ET AL., supra note 154, at 121 (noting that purchase is typically the most effective means of "reducing the extent of exposure to storm hazards"). Purchases in fee simple offer the most control, but the costs of acquisition will be a significant burden on most local governments' budgets. See id. at 123. In some cases, the purchase cost may be defrayed by purchasing an easement or leasing or selling the property back to a private owner with a prohibition on development attached to the deed. See id. at 125.
228. The Fourth Circuit recently confirmed that a municipality's refusal to extend services from public facilities does not constitute a taking. See Front Royal & Warren
ordinances can reduce the risk of losses by controlling the amount and type of property exposed to natural hazards. In the case of floodplains, zoning measures have withstood takings challenges so long as they preserve some degree of economic use, such as agriculture, forestry, or commercial recreation.

Unfortunately, however, local governments are unlikely to pursue such measures aggressively unless courts begin to hold them accountable for their actions. Lucas has given local governments one more reason to avoid developing and ardently implementing effective mitigation policies. The risk of takings suits, when combined with traditional governmental immunity and federal disaster aid, insulates local governments from their own land use errors and omissions. The combination has shifted safety risks to private citizens and property risks to the national government. A countervailing liability is necessary to reconcentrate accountability for both public safety and private property at the level of government that is most directly responsible for permitting development in hazardous areas. Local government liability would help break the cycle of development and destruction by reducing the structural bias toward development in hazardous areas, by encouraging the dedication of local resources to hazard avoidance, and by reducing the long-term risk to life and property. Although states cannot fully prepare for a storm with the magnitude of Hurricane Floyd, the careful siting of homes and businesses that would be encouraged by local government liability for permitting development in hazard areas would reduce future losses and speed recoveries.

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County Indus. Park Corp. v. Town of Front Royal, Va., 135 F.3d 275, 285–86 (4th Cir. 1998) (upholding the Town's refusal to provide water and sewer service to a private industrial park and noting that there is "absolutely no warrant for the proposition that where the government does not affirmatively prohibit the realization of investment-backed expectations, but merely refuses to enhance the value of real property, a compensable taking has occurred").

229. See BROWER ET AL., supra note 154, at 92.

230. See id. at 94.

231. See PLATT, supra note 16, at 294–95. According to one commentator, "the threat of Lucas-based lawsuits has caused public agencies at all levels of government to refrain from restricting property rights, even in the face of well-documented natural hazards." Id. (noting also that the lower federal courts have not actively overturned regulations in the wake of Lucas).