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# The Takings Issue in a Natural Setting: Floodlines and the Police Power

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A flood disaster is not an act of God: it is an act of war. The United States is currently entangled in an undeclared domestic war, fighting an enemy that could have been an ally if we had recognized the foe's true nature in time, and supporting a regime that is inconsistent with basic national goals and destructive of the very things that the nation seeks to protect. Victory is impossible, for the cost of winning exceeds the cost of losing. The war takes place on the nation's floodplains;[1] rivers are the enemy; and support for human confrontation with rivers is our current questionable national policy. Like other wars, this one presents constitutional questions that reflect some of the deepest problems in our society and its legal system. Private property rights, which built the world's largest market economy, now impel the development of remaining unexploited areas. On the floodplains this pressure for investment and development results in escalating flood levels and a mounting destructive potential, despite the public works lobbies' crude and expensive efforts at flood control. Yet the entrenchment of private property interests in America makes it exceedingly difficult to implement a regulatory policy aimed at cutting off the causes of disasters at their source.

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1. Floodplains are the areas adjacent to rivers periodically required to hold or carry flood flows. For hydrological background see V. CHOW, HANDBOOK OF APPLIED HYDROLOGY (1964); W. HOYT & W. LANGBEIN, FLOODS (1955); C. WISLER & E. BRATER, HYDROLOGY (2d ed. 1959).

Current governmental flood control policy is pitifully shortsighted, unrealistically attempting to conquer rivers, actively encouraging private gambles against them, absorbing large losses, and restoring the fallen combatants for future encounters after each destructive battle. Rarely does anyone question the necessity for the conflict; even less frequently does anyone suggest that the contending forces should account for the disastrous consequences of their actions. The blame is thrown on God, whose acts are by definition unpredictable and inexorable. But floods are natural and predictable,[2] and most flood disasters could be avoided if humans were not located in the path of floods.

The confusion in contemporary constitutional takings tests has seriously undermined the effectiveness of floodplain land use regulations, which offer the most practical possibilities for ending the floodplain war, and in this regard the constitutional conflict on the floodplain reflects other environmental battles over wetlands, wilderness, strip mining, and pollution.[3] Focusing primarily on private interests, current takings tests ignore the public costs that regulations seek to prevent. The courts' preoccupation with individual loss apparently derives from the venerable words of Justice Holmes and from the current dominance of the takings area by zoning cases. Applying zoning principles, which in the zoning context typically support regulations far beyond strict protection against public injury, courts have been able to ignore public safety factors when they review nonzoning safety regulations like floodplain controls.[4] The deficiencies of this approach have

2. Though specific flood dates are not predictable, general frequency over time is. Recognition of this fact is analogous to recent legislative recognition of ecological principles in other areas of the law. It is difficult to hold riparians legally accountable for flood hazards. Some argue that rivers could be made accountable for their depredations. *See* Stone, *Should Trees Have Standing?: Toward Legal Rights for Natural Objects*, 45 S. CAL. L. REV. 450, 481 (1972). *See also* Sierra Club v. Morton, 405 U.S. 727, 741 (1972) (Douglas, J., dissenting).

3. Floodplain land use regulations typically appear in "floodplain zone" ordinances, but they also occur in subdivision ordinances, in wetland regulations, and standing alone. Besides raising many of the same constitutional questions as other environmental regulatory areas, floodplains are often the most scenic parts of the local landscape, and they are therefore prime targets for environmental quality concern. *See* W. WHYTE, THE LAST LANDSCAPE 44 (1968).

4. Viewed from one perspective, zoning cases are the most liberal extension of regulatory power, since they are now sustained on the basis of general planning objectives instead of public nuisance analogies. *Compare* Village of Euclid v. Ambler Realty Co., 272 U.S. 365, 387 (1926), *with* St. Paul v. Chicago, St. P., M. & O. Ry., 413 F.2d 762 (8th Cir. 1969), *cert. denied*, 396 U.S. 985 (1969). Furthermore, the zoning cases regularly assert the constitutional fairness of major private losses as long as a profitable residuum remains. Unfortunately, a takings test that is quite liberal in the

produced anomalies in environmental cases, uncertainty in the courts, and consternation among governmental officials who are handicapped in their regulatory efforts.[5] Review of the available alternative takings tests, however, reveals many deficiencies despite their occasional advantages over today's diminution test. The diminution theory potentially affords the most satisfactory test available, once it is clarified to incorporate explicit consideration of all affected interests in the regulatory situation. Weighing private losses against public rights reduces the scope of judicial arbitrariness and eliminates much of the subjectivity normally incorporated into the traditional diminution test, while increasing the likelihood that regulatory consequences will be in harmony with fairness expectations.

## I. Policy Decisions

### *A. Resource Confrontation: Rivers, Humans, and Law*

Flood levels are perfectly natural occurrences in the life of a river. When circumstances combine to load a river with large volumes of water, it responds according to the laws of physics, expanding to take all space necessary to carry its burden. Since watersheds have differing contours, rainfall patterns, soil permeability, and human interference, every river is unique. But in the course of time every natural river system inevitably produces floods.[6] In its natural state the floodplain acts as the river's self-regulator, responding like a farflung reservoir to retard and hold waters until downstream levels subside sufficiently to receive them. Even in the flood current area,[7] where the

typical zoning case can be extremely restrictive where no profitable property use remains yet grave public harms, as opposed to the conjectural public welfare interests of zoning cases, are directly involved.

5. Fear of being overturned in court or forced to pay compensation may easily deter legislators from enacting adequate controls. As examples of the anomalies in the area, compare Candlestick Properties, Inc. v. San Francisco Bay Conservation & Dev. Comm'n, 11 Cal. App. 3d 557, 89 Cal. Rptr. 897 (1970), with State v. Johnson, 265 A.2d 711 (Me. 1970). *See also* Bydlon v. United States, 175 F. Supp. 891 (Ct. Cl. 1959) (regulatory restrictions, not physical invasion of private property rights by the government, made subject to inverse condemnation).

6. Rainfall is the prime determinant of floods. Whenever soil is unable to absorb rainfall because of saturation, natural impermeability, and human modifications like asphalting, runoff occurs. In large amounts and in the right topographical context this produces floods.

7. The flood current area or "floodway" is the portion of the river and floodplain area that conveys moving water, as distinguished from the static holding areas of the "floodfringe." Many resource policymakers have restricted their attention to this area of the floodplain.

water force is greatest, floods usually do not destroy the floodplain environment. Nature mitigates potential damages by discouraging fragile and intolerant floodplain development, and the environmental disruptions that do occur heal naturally and quickly. The disasters occur when humans, refusing to follow nature's example, push out onto the river's territory and risk destruction to themselves and others.

Human settlement on floodplains does not occur for lack of capacity to identify the danger. By correlating various data from watershed areas,[8] hydrologists can compute the probable frequency of future flood levels with surprising accuracy.[9] Even where floodplains are not immediately discernible to the eye, they can be accurately defined, mapped, and avoided. The technical ability to delineate floods, however, has not prevented man from challenging rivers in head-on confrontation by developing floodplains. Approximately five percent of the United States population now lives on floodplains, and the amount of that development continually increases.[10] The final result is that floods, when they inevitably strike, take rising tolls in lives and property.

Ironically, the flood hazard is increasing not only because of the mere presence of increased investment and occupancy on the floodplain, but also because human interference with natural conditions over

8. Relevant data include alluvial soil deposits, historical flood, weather and stream flow records, remote sensing, and vegetation studies. There is no single accepted method for computing flood frequencies; several government agencies rely upon historical data extrapolations or the log Pierson III method. The most modern technique appears to be the unit hydrograph method. *See* E. BRATER & J. SHERILL, PREDICTION OF THE MAGNITUDE AND FREQUENCIES OF FLOODS IN MICHIGAN (1961); V. CHOW, *supra* note 1; U.S. WATER RESOURCES COUNCIL, UNIFORM TECHNIQUES FOR DETERMINING FLOOD FLOW FREQUENCIES (1967).

9. A 100-year flood, for example, is a flood level resulting from a combination of circumstances that can be expected to reach a given site elevation once in 100 years; every year there is a one-percent chance that a flood of that level will occur. Engineers, however, refuse to predict flood levels for any given year. Three 100-year floods might hit within a month; the 250-year flood could occur any day. *See* Solomon v. Whitemarsh Township, 92 Montg. Co. 114 (Pa. C.P. 1969) (50-year flood occurred seven times in two years). These examples might also indicate that the frequencies are underestimated. Computed heights and frequencies can be laid out on topographical maps, delineating the areas that face probable flooding and noting the odds of its occurring each year. These maps form the basis of most modern floodplain regulations, and they generally show the 100-year flood, in addition to higher or lower risk floods.

10. Reliable statistics on floodplain development are nonexistent, but in light of consistent postflood reconstruction and new floodplain development the proposition is self-evident. *See generally* F. MURPHY, REGULATING FLOOD-PLAIN DEVELOPMENT (1958); White, *Strategic Aspects of Urban Flood Plain Occupance*, in AMERICAN SOC'Y CIVIL ENG'RS, 126 TRANSACTIONS pt. 1, at 63 (1961).

the years causes flood levels to rise. Human encroachment on the floodplain's carrying capacity and modification of runoff characteristics have increased the percentage chance that a given flood elevation will be reached or exceeded each year.[11] By far the most common and significant encroachment is the inexpensive dumped or diked fill operation that raises property up from the floodplain. Those encroachments fairly effectively diminish dangers to the buildings on them, but they have very serious consequences elsewhere in the resource network. Encroachments anywhere in the floodplain displace the floodplain's natural storage capacity; the degree of displacement depends upon the nature of the encroachment.

At first glance the effect may seem minimal; the total storage loss from an individual encroachment in the 100-year flood may amount to less than a hundred cubic yards of water. Measured against the value of an individual investment, the potential harm due to this floodflow increment may be small, and it may be infinitesimal compared to total downstream flood stages. Moreover, until recently hydrologists apparently doubted the importance of floodplain storage, assuming that the floodway currents were the only significant floodflow element. For these reasons some legal observers concluded that the encroachment-displacement effect was an insufficient justification for regulations excluding development from the floodplain. Using the same assumptions, several courts and legislatures have implied the same conclusion.[12] While individual encroachments may have minimal local

11. *See* G. WHITE, CHOICE OF ADJUSTMENT TO FLOODS (1964). The common sense correlation of damages with increased floodplain development is documented in TASK FORCE ON FEDERAL FLOOD CONTROL POLICY, A UNIFIED NATIONAL PROGRAM FOR MANAGING FLOOD LOSSES, H.R. DOC. NO. 465, 89th Cong., 2d Sess. 3-5 (1966) [hereinafter cited as TASK FORCE REPORT]. The planners' slow realization that these damages would not occur if development were directed elsewhere is reflected in TENNESSEE VALLEY AUTHORITY, FLOOD DAMAGE PREVENTION: AN INDEXED BIBLIOGRAPHY (2d ed. 1973). The cause of increased flood levels does *not* appear to be increased rainfall, since records do not show a noticeable increase in precipitation over the years. Human modification of watersheds has increased the volume, height, and velocity of runoff levels by covering the soil and groundwater aquifer recharge areas, channelizing watercourses, and encroaching on the floodplain's carrying capacity. Interview with Prof. E.F. Brater, Dep't of Civil Eng'r, University of Michigan, in Ann Arbor, Michigan, April 7, 1972. *See* C. WISLER & E. BRATER, *supra* note 1, at 77-79.

12. Baker v. Planning Bd., 353 Mass. 141, 228 N.E.2d 831 (1967); Morris County Land Improvement Co. v. Township of Parsippany-Troy Hills, 40 N.J. 539, 193 A.2d 232 (1963). Hager v. Louisville & Jefferson County Planning & Zoning Comm'n, 261 S.W.2d 619 (Ky. Ct. App. 1953), is often cited for this proposition though it involved backwater flooding from a government dam, not natural flood storage. MICH. COMP. LAWS ANN. § 323.2a, *as amended*, (Supp. 1973-74), restricts controls to the floodway. *See also* AMERICAN SOC'Y CIVIL ENG'RS TASK FORCE ON FLOODPLAIN REGULATION, A

displacement effects, however, their cumulative consequences throughout a watershed seriously increase the frequency of floods and aggravate downstream damages. In a recent engineering study at the University of Michigan the cumulative effect of encroachments throughout a computer-simulated watershed showed flood increases of 30 percent.[13] The computerized watershed, of course, was less responsive than some natural watersheds and more responsive than others, and in river systems without numerous encroachments the 30 percent figure will be of limited usefulness. Nonetheless, the study for the first time established scientific support for the common sense principle that extensive encroachment upon floodplain storage areas will result in significant increases in flood flows and flood hazards.[14]

The probability that a flood will reach a given elevation in a particular year thus increases with additional floodplain development. Parcels that were threatened only by 250-year floods a generation ago may now fall within the 100-year floodlines. Since today's marginal location may be in the path of the next major flood, these rising levels emphasize the urgency of preventing all unnecessary human development in the floodplain. As a constitutional matter, this aspect of flood causation is important for the defense of regulatory measures that attempt to keep people off the floodplains. Regulating potential flood victims may not seem so harsh if they are viewed as contributing causes as well as potential victims of future floods.

The fact that encroachment results in diminished danger to the encroacher does not entirely explain why people live and build on the floodplain. Obvious risks still remain for all floodplain development. The annual recurrence of flood disasters should sufficiently demonstrate that anyone living or building near a river faces potential destruction; thus plain ignorance does not explain this behavior.[15] The scene, re-

GUIDE FOR DEVELOPMENT OF FLOODPLAIN REGULATION 24 (1969), asserting that out-of-flow ponding areas have insignificant effects. This is also the shortcoming of statutes that focus upon channel encroachments. *See* Beuchert, *State Regulation of Channel Encroachments*, 4 NATURAL RESOURCES J. 486 (1965).

13. S. Sangal, The Surface Runoff Process During Intense Storms, 1970 (unpublished thesis, Dept. of Civil Eng'r, Univ. of Michigan).

14. Connecticut is apparently the only state that recognizes this principle in its legislation. CONN. GEN. STAT. ANN. § 25-4(a), *as amended*, (Supp. 1973) (requiring review of cumulative encroachment effect). The Massachusetts courts have recently accepted the principle. Turnpike Realty Co. v. Town of Dedham, — Mass. —, 284 N.E. 2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973). *See also* U.S. ARMY CORPS OF ENGINEERS (NEW ENGLAND DIV.), CHARLES RIVER STUDY, App. D (1972).

15. Contemporary humans are apparently more ignorant than the American Indians and early farming settlers who rarely established permanent settlements on floodplains

peated after virtually every recent flood, of citizens rebuilding their wrecked floodplain homes precisely where they stood before demonstrates that even with clear information men and their market will choose to risk flood dangers.[16] In some places unfortunate physical constraints encourage floodplain development. In steep valley areas or broad flatlands like the Mississippi basin, for example, developers may have no alternative to building on the floodplain other than wholesale industrial and population migration from the area. The absence of alternate building sites, however, is the exceptional case. The real reasons for continued floodplain development lie in economics, human nature, and the present state of the law.

The dangers of future floods are intangible to the human mind, while the aesthetic and economic advantages of locating near rivers can be quite concrete.[17] Even after disaster actually strikes, humans generally try to forget and plod onward. Further, human psychology and the market encourage a floodplain replay of Professor Hardin's tragedy of the commons:[18] each development on the floodplain increases the destructive potential of floods; yet each owner who can profit from encroaching can rationally ignore the encroachment effect, because the increment in danger to him is negligible compared to his gain. The adverse flood effects he imposes upon others are too diffuse or commingled in the common resource pool to be charged against him. Since every decisionmaker shares essentially the same reasoning, and since the profit and tax effect of each encroachment en-

then existing. TASK FORCE REPORT, *supra* note 11, at 11; G. WHITE, CHANGES IN URBAN OCCUPANCE OF FLOOD PLAINS IN THE UNITED STATES 6 (1958).

16. The force of tradition, inertia, and economics is made evident by the failure of government attempts to relocate citizens after flood disasters. *See* F. MURPHY, *supra* note 10, at 115.

17. In addition to the obvious aesthetic, recreational, production, and transport features of riverfront location, floodplain parcels are often attractively inexpensive, available in larger blocs, and strategically located near developed areas. Moreover, they do not require extensive grading and site preparation. Where governmental control works or other subsidies are available, floodplain investment can produce windfall profits for land speculators.

18. Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968). In this provocative article Hardin analogized environmental degradation in general, and specifically overpopulation, to communal use of grazing pasture. The commons can absorb only a fixed number of cow user units without deteriorating; yet each herdsman exercising freedom of choice will try to add more cows to his herd beyond that optimum number even though the common resource is thereby diminished, because he himself will realize the net value of almost one full cow for each addition while sharing the detriment with all users of the common. All other herdsmen are similarly encouraged to escalate the exploitation, and each must do so just to remain even in the competition. The result of freedom of action in the commons is eventual destruction of the common resource.

courages other landowners to develop or depart, the floodplain environment suffers the total effect of many encroachments—higher and higher floods.[19]

Market value is a mirror of human irrationality on the floodplain, acting as a catalyst to the development process that produces flood disasters. Economists argue that the market is supremely rational in weighing dangers. They assume that people who know of hazards will consider them in arriving at purchase prices and development decisions, and they implicitly postulate that all danger costs are felt by some actor in the market process. Neither assumption is tenable. The floodplain land market can only reflect the aggregate wisdom of the least discriminating class of buyers. Market values are set by the highest prices that are being offered consistently for similar floodplain parcels; presumably persons who ignore the flood hazard offer the highest prices.[20]

The law today, in various guises and in disparate ways, aggravates the flood situation by ignoring its dangers. Since property taxes are based upon market value, tax law makes market value a self-fulfilling prophecy by encouraging a landowner to develop in order to pay the taxes on his property's developmental value. More significant in perpetuating the floodplain conflict, however, are the legislative and judicial policies that succeed in hiding the true costs of floodplain development from private decisionmakers.

Dams, levees, and other controls works authorized by legislatures and built by eager governmental beavers are prime examples of public

19. The development pressure on the property owner comes not only from increasing tax assessments as neighboring floodplain parcels are accorded higher market values for development, but also from the increasing flood heights he can expect to encounter if he too does not fill in the floodplain area. Though Hardin does not explore the issue beyond advising "mutual coercion, mutually agreed upon," the only way to prevent eventual destruction of the commons is to create binding agreements or regulations between various users to prevent use beyond the equilibrium point, or to create some direct accountability market mechanism so that each user must confront the full detrimental effects he causes by exceeding the optional limits.

20. Alternatively, buyers who know about the flood hazard can ignore it for other reasons, because public subsidies or weaknesses in tort remedies allow them to externalize costs caused on and off the site. Paradoxically, in some other situations the highest prices are offered by those who cannot afford to pay for safety. Intensive low quality residential use is often the market's highest use for urban floodplains where industrial and commercial users find it more practical to build elsewhere. "[T]he Urban ecology of North American cities leads to the settlement of ghettos in low-lying areas." Meier, *Insights Into Pollution*, 37 J. AM. INST. PLANNERS 211, 216 (1971). The reality of povery limitations on freedom of choice argues forcefully against economists who would leave floodplain settlement patterns up to open bargaining in the marketplace.

subsidy for floodplain developers. These works substantially reduce the risks and dangers of floodplain location at no cost to the local landowners beyond payment of ordinary taxes.[21] Whether dams are built to protect existing private investments or to promote future development, they make land development more profitable and encourage further development.[22] Protection works, however, are a dangerous subsidy. At best they never afford 100 percent protection against floods, and they may be overtopped in any year due to human error, unusual combinations of natural conditions, or increases in river flows beyond design capacity.[23] Since the waters from a failing dam strike owners who, without the false security of the control works, would have built elsewhere, the devastation may be far greater than it would have been without the dam. Even if the works never fail, their enormous economic and environmental cost still represents a gratuitous public payment to support the profitability of private development that otherwise might have been prompted to occupy safer uplands.[24]

Federal flood insurance, which received much attention during the months after the 1972 floods, represents another counterproductive subsidy. The flood insurance statute attempts to discourage further floodplain development by making land use regulation a precondition to issuance of subsidized insurance policies and by refusing to subsidize any development not existing at the time of federal certification of the local program.[25] In practice, however, this program shows the classic flaws of current flood policy. It encourages continuation of existing development that might otherwise relocate by providing prem-

21. Analysis of cost externalizations is increasingly a basic feature of contemporary environmental policymaking. *See generally* K. BOULDING, ECONOMICS OF POLLUTION (1971); R. KNEESE & B. BOWER, ENVIRONMENTAL QUALITY ANALYSIS (1969); ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, PROBLEMS OF ENVIRONMENTAL ECONOMICS (1972).

22. *See* Miller & Simmons, *Crisis on Our Rivers*, in MCCLELLAN, LAND USE IN THE UNITED STATES 100, 104 (1971). Promotion of future development on the floodplain is often a "benefit" justification for government dams and control works. TASK FORCE REPORT, *supra* note 11, at 20.

23. It is not feasible to build the failproof dam; most dams are constructed to a 250-year frequency level, and even this margin of safety can be frustrated by rising flood levels or human error. In some circumstances the government may be liable for dam failures. *See* Barr v. Game, Fish & Parks Comm'n, 30 Colo. App. 482, 497 P.2d 340 (1972).

24. Flood control dams are often impractical for multiple use because of required major fluctuations in pool levels. The official cost-benefit ratios are likewise arguably inflated and often marginal in any event. Recent federal proposals would require some beneficiaries to share in the cost of public works projects. NATIONAL WATER COMM'N, WATER POLICIES FOR THE FUTURE 497-98 (1973).

25. 42 U.S.C. § 4015 (1970), *as amended*, P.L. 93-243, § 103 (Dec. 31, 1973).

ium subsidies up to 99 percent; it depends upon disjointed local regulations that have been riddled with large constitutional loopholes permitting floodplain development; it has stretched under development pressure to allow subsidy for new construction; and since developers who build before the H.U.D. Secretary certifies the local flood insurance program are virtually assured of subsidized insurance, it actually operates to encourage rapid new floodplain settlement.[26]

Flood relief is another dysfunctional aspect of current governmental policy. As the 1972 floods demonstrated, floodplain occupants can expect massive federal, state, and local efforts to rescue them and their property, to provide relief, welfare, and reconstruction funds, and to absorb disruption and restoration costs.[27] Since floodplain occupants are legally liable for none of these external costs, they do not enter into the market decision to develop. To be sure, each individual owner risks injury, disease, or death, and his property may be soaked, crushed, buried in mud, or floated away.[28] When he weighs the dan-

26. The current flood insurance program is filled with anomalies. Subsidized rates generally encourage those who might relocate to stick around for one more disaster. Recent modification of the statutory ban on subsidized rates for new construction is even more disturbing. Although § 4015(c) prohibited subsidized rates for new construction once an area has been designated as susceptible to "special flood hazards," 42 U.S.C. § 4015(c), HUD temporarily "suspended" this prohibition due to "substantial delays" in specifically designating the qualified areas. Instead, local communities must determine that new construction sites are "reasonably safe from flooding." 24 C.F.R. § 1910.3 (1973). This provision may actually encourage floodplain development, since developers will hasten to build before local communities' participation in the program eliminates the opportunity for subsidies. Some communities are reportedly delaying participation to accommodate the developers. Telephone interview with Federal Insurance Administrator's Office, Nov. 1, 1972.

While the recent flood insurance act amendment asserts the policy of relocating development out of the floodplains, it nevertheless undermines that policy. It allows subsidized insurance rates for new construction until Dec. 31, 1974, or the publication of federal insurance rate maps (not the more available and logical flood hazard maps) whichever comes *later*. P.L. 93-243, § 103 (Dec. 31, 1973). In light of the greatly increased subsidized coverages (from $5000 to $100,000 in some cases) and the timing of the new program, the new statute appears strongly to encourage the rapid development of floodplains. Against these provisions, the accelerated flood hazard mapping provisions, *id.* at § 204, and mandatory local participation, *id.* at §§ 201(d), 204, are insignificant improvements in the program.

27. Floodplain occupants in 1972 received $172.5 million out of the regular disaster relief budget, $200 million voted by Congress as temporary relief, and $1.3 billion to finance donations of $5000 apiece to floodplain homeowners and low interest reconstruction loans beyond that figure. N.Y. Times, Aug. 16, 1971, at 13, col. 1. Beyond dollars, a substantial number of fatalities were rescue workers; workers took weeks to restore public services; jobs and local economies were disrupted; and the life of many affected communities has not yet returned to normal.

28. The range of medical problems encountered in the wake of a flood extends beyond typhoid and dysentery. Following the devastating floods in the Northeast in the late spring of 1972, doctors in that area braced for a surge of psychiatric problems,

gers and odds of developing on the floodplain against its various attractions, however, the individual can discount many of his own potential costs thanks to insurance or relief, and he can completely ignore almost all damages imposed upon the public at large.

The common law, which in other circumstances often acts as a cost internalizer,[29] has abetted legislatures in hiding the true cost of floods by severely limiting liability for flood damages. For example, a developer may decide to build a residential subdivision in the 100-year floodplain because land is cheap, consolidated in a large parcel, and has an alluring view of the nearby river. If he can expect uninformed buyers pressured by the housing shortage to purchase most of his units within a few years despite the flood hazard, the profit incentive will encourage him to take the short-term risk of building there rather than on a more expensive upland location.[30] In the absence of fraud, misrepresentation, or subdivision regulations incorporating flood criteria, neither the law nor the economics of his decision will force him to consider the long-term plight of his customers.[31]

Even more deficient, from a resource cost internalization point of view, are the limitations of liability for injuries he inflicts off the floodplain site. The physical consequences of floodplain development, of course, reach far beyond injuries to the subject parcel and its occupants.[32] Some legal sanctions accompany the local offsite effects of floodplain development. Physical obstructions of the floodway can severely interfere with local flow characteristics by catching debris and

including suicides, attributable to the feeling of futility brought on by personal and property losses. American Medical News, July 24, 1972, at 1, 3.

29. *See* Michelman, Book Review, 80 YALE L.J. 647 (1971); Wright, *The Cost-Internalization Case for Class Actions*, 21 STAN. L. REV. 383 (1969).

30. Subdivisions in floodplains are apparently not a rare occurrence. *See* American Land Co. v. Keene, 41 F.2d 484 (1st Cir. 1930); Turner v. County of Del Norte, 24 Cal. App. 3d 311, 101 Cal. Rptr. 93 (1972); Dooley v. Town Plan & Zoning Comm'n, 151 Conn. 304, 197 A.2d 770 (1964). Subdivision regulations, however, have begun to incorporate flood considerations. *See, e.g.*, MICH. COMP. LAWS ANN. § 560.117, *as amended*, (Supp. 1973-74).

31. Providing flood information to lending institutions, including the FHA and VA, could help to internalize the onsite flood hazard costs, but this would entail extensive administrative costs. Current practice incorporates flood hazard information only where obvious riverside location, recent flood memories, federal input from the insurance program, or other volunteered information raise the issue. *Cf.* P.L. 93-234, § 102(a)(b) (attempting to tie federally supported financing to a flood insurance requirement that would theoretically be based upon flood hazard information). The identification of areas remains a problem.

32. The primary offsite damage is due to the encroachment effect, but onsite septic systems, industrial chemicals, and flotsam also account for much offsite damage.

causing upstream ponding, deflections, and scouring. If neighbors can establish prospective injury or past causation due to these local effects with enough specificity to convince courts, they can ground liability in traditional tort or riparian rights theories.[33] To the extent that a developer can anticipate such liability, he can internalize these costs in his development decisions. The difficulty of proving specific damages attributable to specific tortfeasors, however, is a major obstacle to common law relief, especially where the hydrologic and economic injury effects of local obstructions commingle with those of myriad anonymous upstream users. The same difficulty renders injunctions for prospective injury virtually impossible. Moreover, even if local effects can be proved, the common law tort and riparian rights theories may be useless in states that apply the common enemy rule to floods[34] or limit landowners' liability to injuries caused by floods that are not extraordinary.[35]

The difficulties of apportioning liability for local effects are miniscule compared with the immense problems attendant to the legal internalization of a floodplain development's extended downstream costs. Except for the situation in which a piece of debris clearly identifiable to a particular source causes the downstream damage, the difficulties of measurement and attribution of the extended effects of any single floodplain development make general tort theories unworkable. Even if causation were provable, the act of God defense, limitations on negligence in the case of "extraordinary floods," and other restrictions on liability operate to make recovery of damages from those not left

33. Proof of local damage causation is hydrologically difficult in many cases for obvious reasons. Where such proof is possible, liability usually follows as in the case of channel obstructions. "The flood channel of the stream is as much a natural part of it as the ordinary channel . . . . With this flood channel no one is permitted to interfere to the injury of other riparian owners." 3 H. FARNHAM, WATER AND WATER RIGHTS 2562 (1904) (apparently referring to floodway encroachments). This may explain why no challenges to floodplain regulations have come from floodway encroachers.

34. A number of jurisdictions, including California, have applied the common enemy doctrine. *See, e.g.*, Costello v. Bowen, 80 Cal. App. 2d 621, 182 P.2d 615 (1947). *See also* cases cited Annot., 23 A.L.R.2d 750, 752-56 (1952). Other courts reach the same result by saying that defendants will not be liable for damage caused by acts of God or the vicissitudes of nature. *E.g.*, Cole v. Bradford, 52 Ga. App. 854, 184 S.E. 901 (1936).

35. The distinction between extraordinary and ordinary floods as a defense to tort claims for damages caused by structural encroachments on flood channels appears throughout the cases, but no exact definition of "extraordinary flood" exists. One flood was defined as extraordinary because it had been equalled or exceeded only twice in the memory of witnesses. Kansas City M. & B. R.R. v. Smith, 72 Miss. 677, 17 So. 78 (1895). *See also* cases cited Annot., 29 A.L.R.2d 447, 452 (1953).

judgment-proof improbable. When applied to prospective floods the grounds for liability are even more conjectural.

### *B. Governmental Policy Choices for the Future*

Only three general policies are available in the face of the escalating conflict along our rivers. We can continue the present system of confrontation, supporting private floodplain development both before and after floods as a common burden; we can conquer rivers so that they never again will dare to threaten American lives or property; or we can disengage and try to live at peace with nature.

Current flood policy is notably inadequate to protect lives and property, and it wastefully misallocates resources. Besides the dam and levee approach, other techniques have been proposed or implemented, including flood forecasting, floodproofing, and flood information for the market,[36] but none of these techniques promises an effective, general solution for the problem. Moreover, the encouragements to development like subsidies and cost insulations make sense only if they implement some specific policy of promoting floodplain development. No such national policy has been articulated. Instead, the current system apparently sprang up by default, protecting private property in the floodplain on the danger-disregarding presumptions that all private property assigned developmental market value must be developable and that government owes protection and support to floodplain occupants.[37] So long as alternate locations for development are economically avail-

36. Flood forecasting by the U.S. Weather Service (National Oceanic and Atmospheric Administration) is of tactical benefit, but it is hardly an adequate protection for most nonevacuatable development. Floodproofing requires investment that could be avoided entirely in alternative locations; its prime utility is for existing development and situations where floodplain locations must be used for lack of alternatives. *See* SHEAFER, INTRODUCTION TO FLOOD PROOFING (1967); U.S. ARMY CORPS OF ENGINEERS, FLOOD PROOFING REGULATIONS (1972).

37. Several cases have indicated that local governments cannot restrict normal market development where it will add new governmental burdens; nor can municipal services be denied to achieve the same result. *See* Reid Dev. Corp. v. Township of Parsippanny-Troy Hills, 10 N.J. 229, 89 A.2d 667 (1952); Mansfield & Swett, Inc. v. Town of West Orange, 120 N.J.L. 145, 198 A. 225 (Sup. Ct. 1938); National Land & Inv. Co. v. Easttown Twp. Bd. of Adjustment, 419 Pa. 504, 215 A.2d 597 (1965). The argument could be made that flood protection works and flood relief are a normal obligation of government, not to be avoided by land use restrictions. *See* Dunham, *Flood Control Via the Police Power*, 107 U. PA. L. REV. 1098, 1125-27 (1959) [hereinafter cited as Dunham, *Flood Control*]; *cf.* Reich, *The New Property*, 73 YALE L.J. 733 (1964). In presuming that market decisions must be supported by government in the face of predictable natural hazards, this theory would create a legally novel and irrationally wasteful governmental obligation.

able, there is no reason to think that a policy favoring floodplain development is or ever will be desirable. Current policy continues to offer recurring wars of attrition with little rational justification.

Total conquest of floods is a possible, but undesirable, alternative. If the national policy were the total elimination of floodplain hazards, technology as usual has an expensive answer. Technology can subject entire watersheds to control by modifying rainfall patterns, establishing broad networks of computer-coordinated control works, and replacing rivers with a chain of ponds, dikes, sluices, and watergates descending from the highest upland meadows all the way to the sea. The direct expense would be formidable, and the consequent loss of farmland, open space, water use, and environmental quality would be even greater. But we then could build upon the floodplain in safety. With alternative development locations available, massive public subsidy of private decisions to build in the floodplain would be a sad misallocation of resources.

Disengagement from the conflict thus emerges as the most rational alternative, reducing the area of confrontation between rivers and humans by making their mutual uses of river valleys compatible. Basic to this management theory is the proposition that the only tolerable development on the floodplain is that which provides benefits in excess of all true costs, economic and otherwise, to the resource network as a unit.[38] Further, even where net benefits exist, developments that impose costs upon public safety and the environment should not be built on floodplains if net benefits would be greater, or the costs less, in other locations.[39] The proposition requires maximization of benefits in use allocations throughout a whole area in light of true costs.

38. This conclusion is gradually gaining recognition, most recently in the National Water Commission's draft report, which states that "the material wealth of a nation is not enhanced by development of any tract of land subject to flood overflow unless the net value of the resulting production exceeds the costs of development plus the flood losses (or the cost of preventing such losses) [counting] any non-material values sacrificed through development [as costs]." NATIONAL WATER COMM'N, *supra* note 24, at 160. *See* Sax, *Takings, Private Property and Public Rights*, 81 YALE L.J. 149, 1972 (1971); U.S. Water Resources Council, *Unified National Floodplain Management Program* (continuing reports beginning 1971).

39. *See* TASK FORCE REPORT, *supra* note 11, at 14. Uses that currently appear to require floodplain location include nuclear power plants (where heavy reactors must be transported by barge), utility transmission structures, and water-based recreational structures. Each deserves a policy judgment comprehensively comparing probability and degrees of damages against benefits. The same kind of decision underlies regulatory schemes; we base restrictions on the 100-year rather than the 1000-year floodline because we consider that net benefits of development within the latter line outweigh the detriments.

### C. *Techniques for Resource Regulation: Internalizing External Costs*

The extreme difficulties involved in quantifying and attributing the true costs of individual development renders all the available cost internalization techniques insufficient to the task of disengaging development from the floodplain. In some cases the problem with cost internalization is political or philosophical. The government may be thoroughly rational, for example, in attempting to dissuade floodplain development by declaring an end to public flood relief. While this technique of cost internalization has been seriously suggested and is even discernible in recent federal legislation, its political and moral consequences make it unthinkable as a general national policy.[40]

The practical problems of cost internalization are equally perplexing. A government policy of requiring all floodplain occupants to purchase flood insurance for themselves at full actuarial rates, for example, would totally disregard the offsite costs imposed on downstream occupants, effectively encouraging landowners to develop encroaching land fills. Recognition of offsite costs, however, requires heroic administrative efforts. A legislature could require a bond for all new floodplain development sufficient to cover the potential pro rata share of costs occurring throughout a watershed in the event of floods,[41] or it could require developers to purchase flood insurance covering all onsite and offsite damages caused by development. Alternatively the courts could expand the common law theories of tort liability to ground claims throughout a watershed.[42] Each of these comprehensive approaches, however, would require an accurate base quantification of basin-wide damage that is difficult enough to make after a flood and impossible in the case of prospective floods. Apportioning costs to each floodplain occupant would require endless gradations

40. Milton Friedman seriously suggested this in a recent article. NEWSWEEK, Sept. 4, 1972, at 64. The same rationale supported § 1314(a)(2) and § 1315 of the National Flood Insurance Act of 1968, 42 U.S.C. §§ 4021-22 (1970), which denied federal relief to persons who had the opportunity to enter the federal flood insurance program by implementing floodplain land restrictions. The political and philosophical difficulties of this approach are shown by the fact that the effective date of the provision was repeatedly postponed, Act of Dec. 22, 1971, Pub. L. No. 92-213, § 2(b), 85 Stat. 775, and recently repealed. P.L. 93-234, § 203 (Dec. 31, 1973). Ending public flood relief, of course, would not internalize offsite costs that a floodplain developer imposes on others.

41. Such broad coverage bonds have not been seriously examined because the administrative problem is so complex. Onsite damage bonds are analogous to enforced savings programs like social security and workmen's compensation plans.

42. This alternative would require class action and class defendant provisions far beyond the dreams of the drafters of rule 23 of the Federal Rules of Civil Procedure.

through the watershed, and the transaction costs in evaluating, litigating, and paying claims back and forth through the resource network would be stupendous. In some cases more simplified internalization, such as assessing downstream beneficiaries for their pro rata share of the costs of flood control works or requiring "rescue bonds" to cover direct public relief costs in the event of flood might be possible, but no sufficiently practical and extensive cost internalizing technique presently exists.[43]

The complexities of cost-internalization, however, can be circumvented by an alternative governmental approach preventing cost externalizing uses.[44] Land use regulations restricting development, for example, act directly to impose a governmental cost-benefit decision upon private landowners, instead of attempting to quantify factors to be incorporated into the cost-benefit balance of the private market process. Preventing externalization thus avoids the practical obstacles that dominate cost-internalization techniques, while fulfilling the requirements of a rational disengagement policy.

One obvious method for preventing cost externalizations is government acquisition of property rights.[45] Acquisition of floodplain lands by purchase or condemnation effectively would reserve them for floodflow purposes, provide public parkland (in the case of fee simple acquisition), and raise none of the constitutional or political objections that plague regulatory measures. Since purchase of the nation's floodplains would probably double the national debt, however, this approach is impractical as a large-scale policy.[46] Land acquisition at

43. In specialized local circumstances some simple cost-internalizing techniques may work. *See* Farb, *Let's Plan the Damage*, 49 NAT'L CIVIC REV. 238, 241 (1960). While the National Water Commission stresses the approach of making beneficiaries pay for river control works, NATIONAL WATER COMM'N, *supra* note 24, at 497-98, it advocates land use regulation as an essential element of floodplain management. *Id.* at 154-56, 158-60.

44. This is the second possible remedy for Hardin's tragedy of the commons. It assumes a decision that the externalities are worse than the total cost of suppressing the activities. In some cases whether a restriction is a forced internalization or a prohibition of an externalizing use may be an analytically close question. For example, a prohibition on polluting a river may accomplish a cost internalization if treatment equipment is economically possible, or a prohibition of the industrial activity if it is not.

45. This solution does not entirely avoid the cost externalization phenomenon, since the government buys at market prices that ignore the externalized costs attributable to development.

46. No one has even estimated what the cost would be, but the strategic urban, recreational, and commercial locations involved ensure that purchase at current market values would be impossibly expensive. The National Water Commission was unenthusiastic about acquisition policies. NATIONAL WATER COMM'N, *supra* note 24, at 155-56.

"fair market value" also possesses a philosophical shortcoming. Since the buyers who set market value can presently disregard offsite costs and discount onsite flood risks, government acquisition at market prices pays off the landowners' gamble at subsidized profit rates that equally ignore those costs.[47] Compensable regulations, for all their practical advantages, would reflect the same failings.[48]

Perhaps the most compelling case for government acquisition concerns existing settlements that are repeatedly threatened by flood disasters, often as a result of general increases in flood levels. In these circumstances, compassionate public policy would recommend compensated evacuation of entire towns to new upland locations. In practice, however, this policy has little promise. The cost of buying existing development at market rates for the purpose of eliminating developed uses is economically prohibitive, and the costs of re-creating entire communities is disproportionately high. Moreover, floodplain inhabitants doubtless would oppose a forced evacuation from their traditional homes at a time when a flood is only a possibility.[49] Using a more fanciful approach, the government could condition rehabilitation grants and low interest loans after floods upon the victim's agreement to move out of the floodplain, thus "purchasing" property rights with relief money. Under this approach, however, victims would reject the government's relief offer unless it exceeded the amount a market speculator would pay for the land. If, for example, the government offered relief of $5,000 to persons whose flooded property was worth $6,000 on the market, they would choose to sell their land or rebuild themselves, in either case assuring continued occupancy of the floodable land. To prevent further development the government would have to

A further danger of an acquisition policy is that it might cause general floodplain land prices to rise, encouraging owners to develop wherever the government does not buy.

47. This would be equally true for fee simple and less-than-fee-simple acquisition, since the latter price will almost exactly equal the development value of floodplain land. In effect, less-than-fee-simple acquisition involves transfer of the private right to develop. Many observers assert the futility of this approach, arguing that the government will be paying 90% of market value while obtaining no right of public use of lands. *Cf.*, W. WHYTE, *supra* note 3, at 89-117.

48. *See* Krasnowiecki & Paul, *The Preservation of Open Spaces in Metropolitan Areas*, 110 U. PA. L. REV. 179 (1961). One question rarely addressed in discussion of compensable regulations and inverse condemnation is why compensation must be paid for the entire market value loss that restrictions cause, rather than merely for the "excessive" portion of the loss that renders compensation necessary.

49. "[T]hat's when I sit on the front porch with a gun," replied Mr. Frank Novak of Wilkes-Barre, Pa., to the suggestion that government should move people out of the floodplain. Christian Science Monitor, Aug. 21, 1972, at 6, col. 4. *See also* F. MURPHY, *supra* note 10, at 113-19.

pay at least $6,000. Nonetheless, though it would inflate initial relief costs, this form of acquisition might be cheaper than straight acquisition of land, since the government undertakes to pay relief in any event. A negotiated purchase after floods would prevent future relief payments, which could be capitalized toward purchase price.

### *D. The Police Power: Floodplain Regulations*

Floodplain regulations are analogous to standard land use districting schemes, controlling all uses of land within the hydrologically defined areas subject to floods of a designated frequency. Administered by a permit or zone procedure, they essentially establish a flood set-back rule for most development. Schedules of permitted and prohibited uses usually establish a gradient of restrictions within the floodplain area, decreasing in severity at the floodplain's fringes.[50] Flexibility can be built into regulations through criteria for permits that authorize uses that do not increase flood levels or cause or sustain significant damage. Regulations may condition permits on structural modifications or other changes. When a proposed installation would cause increases in flood levels, but its net benefits would outweigh damages, it can be subject to special exception procedures.[51]

Applying use schedules, conditional uses, nonconforming uses, and special exception permits necessarily involves legislative and administrative balancing procedures, and accommodations with economic and political constraints inevitably occur. Existing development, of course, presents extremely difficult legal and policy problems. Although the floodplain situation offers a notable opportunity for amortization procedures and, in some cases, abatement of existing develop-

50. Thus all structural development or substantial alteration of ground contours is generally prohibited within the floodway, with permitted uses limited to low hazard uses like agriculture, recreation, and parking. In the flood fringe area, limited nonresidential structural uses may be allowed; at the extremities of the 100-year floodplain, limited incursions of filling or other encroachments with minimal adverse hydrological effects may be permitted with conditions attached according to the provisions of special exception clauses. Residential uses are usually denied throughout the floodplain, as are unprotected utility lines, storage of dangerous chemicals and floatable debris, and septic installations. *See generally* J. KUSLER, WATER RESOURCES POLICY IN WISCONSIN —FLOOD PLAIN MANAGEMENT 59-60 (1971); 1 U.S. WATER RESOURCES COUNCIL, REGULATION OF FLOOD HAZARD AREAS TO REDUCE FLOOD LOSSES (1971) [hereinafter cited as FLOOD HAZARD AREAS]; Note, *Recent Natural Resources Cases*, 4 NATURAL RESOURCES J. 445 (1965).

51. A special exception, allowing variations from an ordinance when the proposed use is consistent with the purposes of the ordinance, is the proper form; variances that issue to avoid unconstitutional hardship are not the proper form in such circumstances.

ment, current regulations that lack cost internalization mechanisms generally do no more than restrict existing development to the provisions for nonconforming uses.[52] Over time, however, the combination of controls on existing development and restrictions against new investment can direct development away from floodplain locations.

The similarity of floodplain regulations to other established land use regulations makes them relatively easy to initiate and administer. Several adequate model ordinances exist, backed by a fairly extensive legal commentary.[53] Authority to issue regulations at the local level usually is present in general zoning and police power enabling acts;[54] if not, the notoriety of recent floods should reduce the difficulty of obtaining specific legislative authorization. In practice, zoning authorities can incorporate floodplain districts as overlays on existing zone maps, or they can administer them separately.[55] In either event, the graphic nature of the basic floodplain maps makes them easy to comprehend and apply, facilitating public notice, incorporation in title records, administrative handling, and judicial review. Conscientiously administered regulations, of course, impose costs upon government treasuries; base data, mapping, drafting, and enforcement procedures

52. Most land use regulations contain nonconforming-use provisions. While the reason for including them may be fear of constitutional invalidity, *see* State *ex rel.* Nealy v. Cole, 442 S.W.2d 128 (Mo. App. 1969), in *In re* South of Ann Drive, 34 App. Div. 2d 412, 312 N.Y.S.2d 66 (1970), political concerns were equally important to the planners who spawned the concept late in the 1920's. *See* 1 R. ANDERSON, AMERICAN LAW OF ZONING § 6.02, at 308-09; § 6.06, at 318-19 (1968). If a nonconforming use is in the nature of a nuisance, it is more susceptible to termination by so-called retroactive zoning or amortization. *See* More, *The Termination of Nonconforming Uses*, 6 WM. & MARY L. REV. 1 (1965); Noel, *Retroactive Zoning and Nuisances*, 41 COLUM. L. REV. 457, 467-70 (1941).

53. For examples of model ordinances see AMERICAN SOC'Y OF PLANNING OFFICIALS, REGULATIONS FOR FLOOD PLAINS, Rep. No. 277, at 43 (1972); FLOOD HAZARD AREAS, *supra* note 50; Hines, Howe & Montgomery, *Suggestions for a Model Flood Plain Zoning Ordinance*, 3 LAND & WATER L. REV. 321 (1970); LEXINGTON, KY. CITY-COUNTY PLANNING COMM'N, DRAFT FLOODPLAIN ORDINANCE (1973). None satisfactorily compels specific identification of all public harms as suggested here, but each supplies a workable basis for rational floodplain management systems. *Cf.* MICHIGAN DEPT. OF NATURAL RESOURCES, OFFICE OF PLANNING SERVICES, MODEL ZONING ORDINANCES: NATURAL RIVER ZONE (draft of Feb. 3, 1973) (drafted by author).

54. Floodplain regulation implemented for traditional police power purposes can usually be subsumed under general statutory delegations to local governments. Statewide regulation, of course, would require new statutory authority for an administrative agency, unless zoning statutes with sufficient scope already exist. *See* FLOOD HAZARD AREAS, *supra* note 50, at 126-99, 242-70. *Cf.* HAWAII REV. STAT. Ch. 205 (1968), *as amended*, (Supp. 1969).

55. The latter solution may be simplest, but there is no organic reason why the structural restriction in floodplain regulations cannot be fully incorporated in a building code. Many states also insert flood consideration into subdivision regulations. *See, e.g.*, MICH. COMP. LAWS ANN. §§ 560.116-17, *as amended*, (Supp. 1973-74).

require substantial public expenditures. The costs of administering a floodplain management system, however, are infinitesimal compared to the cost of a single dam or a major flood. If conscientiously and comprehensively administered throughout a watershed, floodplain regulations can exclude all uses that pose dangers to floodplain inhabitants, but allow special uses in which the necessity for particular developments outweighs the disutility of their placement.

In practice, however, the regulatory approach has had its failings. Most of the more than 500 units of government that have promulgated floodplain management legislation are low-level governmental entities that rarely attempt to coordinate their efforts within watershed systems.[56] Without coordinated basin-wide management policies, the fragmented administration of floodplain regulations severely limits their effectiveness. State level regulation is probably the most practical method to bring entire watersheds up to minimum regulatory levels. Though states are generally chary of invading the political domain of local governments, a firmly established trend points in that direction.[57] Raising the level of governmental control has other benefits. Technical information, which currently represents substantial opportunity costs to small towns, can be generated more easily at the state level. Communication with relevant federal agencies may be easier. Removal of administration from the local level may alleviate heavy local pressures for modification, and state level regulation may possess enhanced standing in court.

Though the form and content of existing legislation are generally adequate to meet the requirements of the situation, the terms of existing regulations are presently adjusted in practice to conform to the pressures of private property. Fearing political pressure and reverses in court, floodplain administrators at every level are hesitant to enforce regulations that impose major losses in market value, notwithstanding important public concerns.[58] They are echoed by most of the legal com-

56. The exact number is unclear, but is certainly growing rapidly under the influence of the federal flood insurance program. *See* 38 Fed. Reg. 1001-17 (1973).

57. *See* F. BOSSELMAN & D. CALLIES, THE QUIET REVOLUTION IN LAND USE CONTROL (1972); the fact that flooding is a basin-wide problem dictates that effective solutions be basin-wide as well. *Cf.* Susquehanna River Basin Compact, 84 Stat. 1509 (1970); Delaware River Basin Compact, 75 Stat. 688 (1961). In practice, however, these compacts seem to prefer dams to land use controls. Unfortunately, the federal flood insurance program encourages a checkerboard of local rather than state regulation.

58. Given the uncertain nature of takings tests, administrators are understandably reluctant to risk judicial and political battles. Liberal grants of variances and amend-

mentators, who generally counsel that regulations are unassailable if they do not substantially erode private property values.[59] Floodplain regulations, of course, generally do just that, severely diminishing property values by preventing development of land whose value primarily lies in its development potential.

Floodplain restrictions exemplify a classic dilemma in contemporary resource management regulations. Severe misallocations of costs exist, and they can be adequately handled only through comprehensive and detailed regulatory control of resource uses. But private property lines and market processes disregard the majority of criteria relevant to the public interest, producing major disparities between private and public conceptions of land use goals. From these disparities emerges a new confrontation between different forces in our legal system.

## II. The Constitutional Dilemma in Resource Regulation

Environmental land use regulations are inevitably prone to constitutional attack, not only because they seek to prevent cost externalizations that courts do not customarily recognize, but also because they drastically curtail the market value of private property, posing a sharp constitutional conflict between public and private interests. The numerous successful constitutional challenges to floodplain regulations have been particularly disappointing.[60] More fundamental than the regula-

ments are the result, despite theoretically stringent requirements for granting them. Variances theoretically provide flexibility in regulatory schemes where private property rights in specific individual circumstances would otherwise be unconstitutionally violated (as contrasted with special exception permits that allow flexibility for regulatory policy purposes). Yet variances in practice become political footballs, and they are granted for a frustratingly broad and arbitrary range of reasons. *See* Dukeminier & Stapleton, *The Zoning Board of Adjustment: A Case Study in Misrule*, 50 KY. L.J. 273, 324-30 (1962); *cf.* Otto v. Steinhilber, 282 N.Y. 71, 75-76, 24 N.E.2d 851, 852-53 (1939). Since administrative *grants* of variances are rarely appealed, the many cases in which courts order such grants may only be the tip of the iceberg. Until strong constitutional support for such regulations emerges, administrators will be tempted to allow them to erode under attack by property owners. Pressured amendments of zoning ordinances, however, may often be attacked as "spot zoning." *See* 1 R. ANDERSON, *supra* note 52, at §§ 5.04-.13 (1968). Note that governments may find themselves held liable in tort for unwisely permitting floodplain development. *See* Eschete v. City of New Orleans, 258 La. 134, 245 So. 2d 383 (1971).

59. *See, e.g.*, FLOOD HAZARD AREAS, *supra* note 50, at 29, 36.

60. Apparently, "there is a hierarchy [of constitutional values] . . . in which the right to profit stands first, with a grudging exception for exigent public need." Sax, *supra* note 38, at 149 n.7. In the leading case, Dooley v. Town Plan & Zoning Comm'n, 151 Conn. 304, 197 A.2d 770 (1964), the court declared a floodplain ordinance unconstitutional. Four of the following seven cases reached the same result. Ordinance void as applied: Bartlett v. Zoning Comm'n, 161 Conn. 24, 282 A.2d 907 (1971); Sturdy Homes, Inc. v. Township of Redford, 30 Mich. App. 53, 186 N.W.2d

tions' dismal court record, however, is the inadequacy they reveal in today's judicial takings tests. The courts, instead of exploring the subtle balance between private and public interests, chose to apply the narrow, traditional language of Mr. Justice Holmes' diminution test, which focuses primarily on the decrease in value of private property caused by a police power regulation. In practice, the courts appear to resolve the illogic of the theory, especially in cases involving very serious public concerns, by striking an unspoken balance between private regulatory losses and some unspecified form of public interest. Even where implicit balancing is possible, however, the weighing of public interest considerations is necessarily haphazard, and the diminution test tends to bias the takings question in favor of supporting market values. The floodplain cases' extreme fact situations, involving novel police power objectives and dramatic erosions of market value, offer a magnificent opportunity to clarify some of the toughest constitutional questions and environmental issues in contemporary property law, but the courts have ignored their chance. Unless they revise outmoded takings tests, however, the resulting limited utility of floodplain regulations and environmental measures like them will discourage their use by resource managers.

The courts need not establish an entirely novel takings test. By incorporating into judicial review the full range of considerations that produce legislative decisions to regulate in the first place, they need only rework the current takings test that presently threatens environmental regulations. That expanded judicial awareness will clarify what is *not* a taking. In many situations this will result in strong judicial support for uncompensated government regulation where today private property receives more sympathetic judicial treatment. No apology is necessary for that result, however, if it is the consequence of considering previously ignored constitutional interests. Moreover, the legislature, if it desires, can still compensate for floodplain land restrictions. Balancing private losses against public costs only answers

43 (1971); Hofkin v. Whitemarsh Township, 88 Montg. Co. 68, 42 Pa. D. & C.2d 417 (Pa. C.P. 1967). Ordinance void: Morris County Land Improvement Co. v. Township of Parsipanny-Troy Hills, 40 N.J. 539, 193 A.2d 232 (1963) (wetlands ordinance defended on floodplain rationale). Ordinance upheld: Turner v. County of Del Norte, 24 Cal. App. 3d 311, 101 Cal. Rptr. 93 (1972); Turnpike Realty Co. v. Town of Dedham, — Mass. —, 284 N.E.2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973) (insufficient loss to constitute taking); Solomon v. Whitemarsh Township, 92 Montg. Co. 114 (Pa. C.P. 1969) (no property value loss). For a catalog of prior cases raising similar issues, see FLOOD HAZARD AREAS, *supra* note 50, at 467-71.

the very different question of when compensation is *constitutionally required.*

### *A. Floodplain Regulations in Court*

Purely practical considerations partially explain the failure of some floodplain regulations. In most cases neither the legislature nor the regulations' defenders had sufficiently developed supporting data.[61] Further, the floodplain regulations so far challenged in court on takings grounds have all been based upon local ordinances rather than state level regulations. In practical terms, a local ordinance—whose promulgating "legislature" may be a three-man majority on the town council exercising delegated power—doubtless enjoys a less compelling presumption of legislative validity in court than an equivalent piece of state legislation. These tactical considerations, however, appear insignificant when compared to the variety of constitutional onslaughts directed at floodplain regulations.

The Supreme Court delivered its classic, but unenlightening, standard for constitutional review of police power legislation in 1893, in the well-preserved case of *Lawton v. Steele.*[62] The Court stated:

> To justify the state in . . . interposing its authority in behalf of the public, it must appear, first, that the interests of the public . . . require such interference; and, second, that the means are reasonably necessary for the accomplishment of the purpose, and not unduly oppressive upon individuals.[63]

In modern takings decisions this statement has three general elements.[64]

61. None of the voided regulations was based on hydrologically defined flood frequency projections. The *Dooley* record indicated that the ordinance was based on rough historical records of the 1938, 1944, and 1954 floods. Record at 186. The court relied on the fact that much of the regulated property was "on good high ground." 151 Conn. at 311, 197 A.2d at 773. Counsel in all but the most recent cases apparently did not understand the physical or legal characteristics of the floodplain. *Cf.* Sturdy Homes, Inc. v. Township of Redford, 30 Mich. App. 53, 186 N.W.2d 43 (1971), where land within the 100-year floodplain (the property appears within the 100-year line in U.S. ARMY CORPS OF ENGINEERS—DETROIT DISTRICT, FLOODPLAIN INFORMATION—UPPER RIVER ROUGE, plate 5 (1971)) was apparently reviewed according to limited seasonal flood data. Turner v. County of Del Norte, 24 Cal. App. 3d 311, 101 Cal. Rptr. 93 (1972), and Turnpike Realty Co. v. Town of Dedham, — Mass. —, 284 N.E.2d 891 (1972), *cert. denied,* 409 U.S. 1108 (1973), show far more sophisticated discussions.

62. 152 U.S. 133 (1894).

63. *Id.* at 137. Justice Clark testified to the continuing validity of this statement in Goldblatt v. Town of Hempstead, 369 U.S. 590 (1962).

64. *See, e.g.,* Chicago Title & Trust Co. v. Du Page County, 11 Ill. App. 3d 386, 298 N.E.2d 259 (1973); Gabe Collins Realty, Inc. v. Margate City, 112 N.J. Super. 341, 271 A.2d 430 (1970). For recent discussions of judicial criteria used to test zoning regulations see Ford, *Guidelines for Judicial Review in Zoning Variance Cases,*

To uphold the validity of police power legislation, a *public purpose* must motivate the law;[65] the restriction selected must be *reasonably related* to the public objective;[66] and the resulting burden must *not be "unduly" or "excessively" oppressive* upon affected individuals.[67] The floodplain cases raise questions in all three areas, though ultimately the third, in the guise of the diminution test, dominates the cases.

The leading case, *Dooley v. Town Plan & Zoning Commission*,[68] is typical of the other floodplain cases in both facts and law. At the insistence of the town flood control and erosion board, the Fairfield, Connecticut Zoning Commission adopted a floodplain district as part of its amended zoning map. The ordinance forbade all structural uses other than marinas, boathouses, clubhouses, landings, and docks, and permitted fill only as a special exception within the 404 acres situated along a local creek; it also allowed parks, playgrounds, parking, and agriculture. Understandably, the market value of affected lands fell sharply. Dooley was a developer who sought to build a residential subdivision on floodplain land that he had contracted to purchase. With other affected landowners, he challenged the restriction as a taking of property for public use without just compensation. Failing at the trial court level, he appealed to the Supreme Court of Errors, which declared the ordinance unconstitutional as applied to plaintiffs' property.

*1. Public Purpose.*—The *Dooley* court actively challenged the legislative objective of the Fairfield ordinance, although ultimately it did not ground its holding on this argument.[69] While flood control

58 MASS. L.Q. 15 (1973); Note, *Criteria for Determining Constitutionality of Zoning Ordinances in Missouri*, 35 MO. L. REV. 572 (1970).

65. *See* Potomac Sand & Gravel Co. v. Governor of Maryland, 266 Md. 358, 363, 293 A.2d 241, 243 (1972), *cert. denied*, 409 U.S. 1040 (1973). The requirement is for a public *purpose*, not necessarily public *use* in a literal sense. *Cf.* Berman v. Parker, 348 U.S. 26 (1954); Heyman & Gilhool, *The Constitutionality of Imposing Increased Community Costs on New Suburban Residents through Subdivision Exactions*, 73 YALE L.J. 1119, 1122-23 (1964).

66. *See* Nashville, C. & St. L. Ry. v. Walters, 294 U.S. 405, 429 (1935); Nectow v. City of Cambridge, 277 U.S. 183, 188 (1928); Welch v. Swasey, 214 U.S. 91, 105 (1909).

67. Other wordings of the same concept include "destructive," "confiscatory," and "unreasonable." *See, e.g.*, State v. Hillman, 110 Conn. 92, 105, 147 A. 294, 299 (1930); Oak Park Nat'l Bank v. City of Chicago, 10 Ill. App. 3d 258, 294 N.E.2d 42 (1973).

68. 151 Conn. 304, 197 A.2d 770 (1964).

69. With regard to congressional objectives, the Supreme Court has said, "Its decision is entitled to deference *until it is shown to involve an impossibility.*" United States *ex rel.* TVA v. Welch, 327 U.S. 546, 552 (1946) (emphasis added); *cf.* Note, *The Public Use Limitation on Eminent Domain: An Advance Requiem*, 58 YALE L.J.

was a "laudable . . . and . . . high purpose," the court detected other impermissible purposes in the ordinance.[70] The problem lay with the legislation's schedule of permitted uses. Since agriculture and the other permissible private uses were impractical, the judges felt that the town might be trying to obtain free public facilities; the only feasible permissible uses were public in nature.[71] Had the court found an improper objective, however, it would presumably have found the ordinance unconstitutional on its face. Since the court made no such finding, its holding apparently did not turn upon the public purpose argument. Courts in other floodplain cases have similarly raised the improper public objective argument without occasioning a general declaration of unconstitutionality.[72]

The *Dooley* court further hinted that the commission passed the ordinance in order to lower future public acquisition costs. Although professing "no reason to doubt" the town's motivation, the court twice remarked that permitted uses seemed to "contemplate a diminution in land value and subsequent acquisition by some government agency."[73] The court's suspicions certainly deepened the ordi-

599 (1949). Even proof of ulterior motive has been ignored. *See* Hetherington, *State Economic Regulation and Substantive Due Process of Law*, 53 NW. U.L. REV. 13, 26-27 (1958).

70. 151 Conn. at 308-11, 197 A.2d at 772-73. The court cited Dunham, *Flood Control, supra* note 37 at 1108, in which Professor Dunham argues that requiring certain uses for public benefit without either reciprocal benefit or compensation to the owner is unconstitutional. *See also id.* at 1121 n.83.

71. The court felt that "to restrict the use of privately owned property to parks and playgrounds bars the development of the land for residential or business purposes and raises serious questions as to . . . constitutionality," for the town would be getting "public" services for nothing. 151 Conn. at 309, 197 A.2d at 772.

72. Bartlett v. Zoning Comm'n, 161 Conn. 24, 30, 282 A.2d 907, 910 (1971); Hofkin v. Whitemarsh Township, 88 Montg. Co., 68, 42 Pa. D. & C.2d 417 (Pa. C.P. 1967). The classic cases are City of Plainfield v. Borough of Middlesex, 69 N.J. Super. 136, 173 A.2d 785 (1961) (zoning for park and playground use) and Miller v. Beaver Falls, 368 Pa. 189, 82 A.2d 34 (1951) (zoning for possible future use as a park or playground); *cf.* Regina Auto Constr. Co. v. Regina, 25 W.W.R. (n.s.) 167 (Sask. 1958) (zoning for parks permissible so long as title remains in the owner). *See also* American Nat'l Bank v. Winfield, 1 Ill. App. 3d 376, 274 N.E.2d 144 (1971); Morris County Land Improvement Co. v. Township of Parsippany-Troy Hills, 40 N.J. 539, 552-53, 559, 193 A.2d 232, 240, 243 (1963).

73. 151 Conn. at 310, 197 A.2d at 773. The record on appeal shows that the town was planning to acquire some lands along Pine Creek, that the full extent of planned acquisition had not been revealed, and that plaintiffs suspected collusion between the zone board and the town in reducing the value of their land for subsequent purchase. Record at 234-36. The town has not yet acquired Dooley's land, nor has Dooley built his subdivision, because he has been held up by road dedication and excavation problems. Telephone interview with Fairfield Town Zone and Planning Comm'n, July 27, 1973.

nance's troubles,[74] but it did not develop the argument further. In some of the cases, the diminution test masquerades in public objective test disguise. The opinions often contain language condemning regulations because they attempt to take private property for public use,[75] but the courts invariably make this finding only when no profitable private use remains. The cases clearly indicate that the courts would have reached the same conclusion even if the regulations had not encouraged public or quasi-public uses.[76] The cases thus turn on the regulations' results rather than their purpose.[77] This is the essence of the diminution test.

*2. Legislative Means.*—Since judges are reluctant to second-guess legislatures, constitutional inquiry into the "reasonable relationship" of means to ends is rare. The courts generally will uphold the legislature's choice of means unless the legislation "is futile or has no reasonable relation to the relief sought."[78] Despite Justice Clark's tentative suggestion that one relevant point for judicial consideration might be "the availability of other less drastic steps" to achieve the legislative objective,[79] the only discernible cases in which the courts question the reasonable relationship of means to ends involve blatant inaccuracies in the factual bases for regulations. In *Sturdy Homes, Inc. v. Township*

74. *See* Vartelas v. Water Resources Comm'n, 146 Conn. 650, 153 A.2d 822 (1959) (floodplain restriction voided for such reasons but reversed on appeal because no evidence of private loss was on the record); McHugh v. City of Dearborn, 348 Mich. 311, 83 N.W.2d 222 (1957).

75. Such reasoning appears in Bartlett v. Zoning Comm'n, 161 Conn. 24, 30-31, 282 A.2d 907, 910 (1971); Dooley v. Town Plan & Zoning Comm'n, 151 Conn. 304, 308, 197 A.2d 770, 772 (1964); Morris County Land Improvement Co. v. Township of Parsippany-Troy Hills, 40 N.J. 539, 554-59, 193 A.2d 232, 241-43 (1963).

76. The decision that comes closest to basing its holding on the improper objectives test is Morris County Land Improvement Co. v. Township of Parsippany-Troy Hills, 40 N.J. 539, 193 A.2d 232 (1963), which dwells upon the ordinance's "prime object" in conserving park areas, *id.* at 550-54, 193 A.2d at 239-41, but then uses the *Pennsylvania Coal* doctrine to void the ordinance as "too restrictive . . . unreasonable and confiscatory." *Id.* at 557, 193 A.2d at 242.

77. Another question of objective that does not appear in the floodplain cases but deserves mention is the assertion that the state may not regulate property to protect the property owner from his own conscious acts. Dunham, *Flood Control, supra* note 37, at 1108-10, 1125, 1127-28. But legal sanctions against attempted suicide and other self-threatening acts make this argument obsolete. *See* Comment, *State's Power to Require an Individual to Protect Himself*, 26 WASH. & LEE L. REV. 112 (1969).

78. Block v. Hirsh, 256 U.S. 135, 158 (1921). Even where evidence is presented as to a statute's futility, courts should "not sit as a super-legislature to weigh the wisdom of legislation nor to decide whether the policy . . . offends the public welfare." Day-Brite Lighting, Inc. v. Missouri, 342 U.S. 421, 423 (1953); *see* United States v. Carolene Prods. Co., 304 U.S. 144, 154 (1937).

79. Goldblatt v. Town of Hempstead, 369 U.S. 590, 595 (1962).

*of Redford,*[80] a Michigan floodplain case, the court noted evidence that factual data supporting the zone on the plaintiff's parcel was incorrect. Affirming the trial court's finding that plaintiff's land was separated from the flood area, the court questioned whether the restriction was factually related to the flood control objective. In voiding the ordinance as applied, however, the court dwelt at far greater length upon plaintiff's loss of value, indicating that the holding rested on diminution grounds rather than on the reasonable relationship test.

*3. Individual Regulatory Burden.*—All the constitutional paths opened in the floodplain cases finally returned to individual property loss as the dispositive constitutional test. In determining that a regulation causes excessive individual loss, courts generally characterize diminution in one of two ways. They may look to the degree of private loss from base value. In taking this approach, they usually speak in percentage terms, although they sometimes use less precise terms like "substantial loss" or "heavy financial burden."[81] Alternatively, the courts find confiscation by looking to the amount remaining to the owner after the regulation, the residuum. While the floodplain cases reflect both approaches, the residuum standard clearly predominates.[82]

80. 30 Mich. App. 53, 186 N.W.2d 43 (1971). *See also* Oakwood at Madison, Inc. v. Township of Madison, 117 N.J. Super. 11, 20-22, 283 A.2d 353, 358-59 (1971). Flaws in hydrological mapping were not considered sufficient to void the ordinance in Turnpike Realty Co. v. Town of Dedham, — Mass. —, 284 N.E.2d 891 (1972), *cert. denied,* 409 U.S. 1108 (1973).

81. *See* Westwood Forest Estates, Inc. v. Village of South Nyack, 23 N.Y.2d 424, 244 N.E.2d 700, 297 N.Y.S.2d 129 (1969); 1 R. ANDERSON, *supra* note 52, § 2.21, at 91 n.14 (Supp. 1972). A notable problem in applying the test is defining a base figure upon which to calculate the percentage, a problem generally avoided by the residuum approach. The sum could be based on the price of land alone, valued for the highest feasible use permitted under existing regulations other than the challenged regulations, or on market value which may reflect expectations that exisiting regulations will be changed through the political process. The last of these should be the general valuation rule. *See generally* I. LEVEY, CONDEMNATION IN U.S.A. 298, 331-46 (1969). *Cf.* Kensington Hills Dev. Co. v. Milford Township, 10 Mich. App. 368, 159 N.W.2d 330 (1968).

82. The *Dooley* court approvingly cited cases that voided a 66 percent diminution. 151 Conn. at 312, 197 A.2d at 774, *citing* La Salle Nat'l Bank v. County of Cook, 12 Ill. 2d 40, 145 N.E.2d 65 (1957). In Bartlett v. Zoning Comm'n, 161 Conn. 24, 282 A.2d 907 (1971), real estate value dropped from $32,000 to $1000. That the court voided the regulations as applied in *Sturdy Homes,* despite the fact that plaintiffs had paid very little for the land, shows that the amount of loss is less important than the amount remaining. Even the cases upholding floodplain ordinances use the residuum approach to justify their decisions. *See, e.g.,* Solomon v. Whitemarsh Township, 92 Montg. Co. 114 (Pa. C.P. 1969).

The language of the floodplain cases also indicates that the residuum test predominates. The *Dooley* court said that the Fairfield ordinance must fall because it "froze the area into a practically unusable state." 151 Conn. at 311, 197 A.2d at 773. In Hofkin v. Whitemarsh Township, 88 Montg. Co. 68, 42 Pa. D. & C.2d 417 (Pa. C.P.

Under this approach the feasibility of remaining permitted uses is the prime determinant of the challenged regulation's validity; a reasonable, practical, or profitable use must remain to the owner. But the test ignores the hazards an individual's property poses to itself and to other persons and property.

### *B. The Deficiencies of Diminution and the Need to Balance*

The diminution test has its origin in *Pennsylvania Coal Co. v. Mahon*[83] in which the United States Supreme Court invalidated a state statute requiring coal mining companies to leave sufficient coal in the ground to support the surface. Indicating that the police power had some limits, Justice Holmes stated: "One fact for consideration in determining such limits is the extent of the diminution. When it reaches a certain magnitude, in most if not all of the cases there must be an exercise of eminent domain and compensation to sustain the act."[84] While Justice Holmes did not say whether any other facts should be considered, Justice Clark in a later case intimated that individual loss alone cannot be the measure of constitutionality.[85] Unfortunately, Justice Clark did not elaborate, and both the state courts and the Supreme Court have failed to present a satisfactory alternative to the diminution test.

The dominance of the diminution test is not at all surprising, for Holmes' test does possess elements that recommend it as a standard

1967) the judge noted that permitted profit making uses "are utterly impractical [and the] only practical . . . permitted uses [are] profitless." *Id.* at 70, 42 Pa. D. & C.2d 420.

83. 260 U.S. 393 (1922). For a general discussion of the takings question based on *Pennsylvania Coal*, see F. BOSSELMAN, D. CALLIES, & J. BANTA, THE TAKING ISSUE (1973). This work offers an intriguing historical background to modern takings discussions and several policy level strategies (without presenting a judicial takings test) for mitigating the force of private property arguments.

84. 260 U.S. at 414.

85. Goldblatt v. Town of Hempstead, 369 U.S. 590, 594 (1962). Justice Clark stated that "[a]lthough a comparison of values before and after [restriction] is relevant . . . it is by no means conclusive." *Id.* Yet diminution was apparently his primary criterion for disposing of the *Goldblatt* case. He refused to find the total suppression of plaintiff's gravel pit an unconstitutional taking, reasoning that "there is no evidence in the present record which even remotely suggests that prohibition of further mining will reduce the value of the lot in question." *Id.* (footnote omitted). Since plaintiff did not introduce evidence of any other kind of loss, lack of diminution was sufficient grounds for dismissal. It appears that there *had* been such allegations on the record, but Justice Clark did not suggest a remand to obtain further evidence on the question. This may demonstrate the general constitutional rule that gravel pits always lose. Hadacheck v. Sebastian, 239 U.S. 394 (1915); Consolidated Rock Prod. Co. v. Los Angeles, 57 Cal. 2d 515, 20 Cal. Rptr. 638, 370 P.2d 342, *appeal dismissed*, 371 U.S. 36 (1962). *Contra*, Terrace Park v. Errett, 12 F.2d 240 (6th Cir. 1926).

of constitutional fairness. It protects individual property interests, which have been at the center of constitutional due process at least since the Magna Carta.[86] While recognizing that some individual losses are inevitably necessary to permit government to function, it draws distinctions between minor and excessive regulatory burdens placed on property owners, reflecting a recognition that eminently fair government regulations may strike inequitably upon the particular circumstances of specific unfortunate individuals. The residuum standard provides a base level of protection for individual property rights in harsh cases, but allows government the creative opportunity to plan, guide, and control property development patterns far beyond the traditional health and safety scope of the police power. Moreover, when reviewing courts look beyond private loss to consider the public interest, the diminution test allows judges to achieve a rough proportionality between private uses and varying degrees of public necessity. In theory, the test thus has potential strengths. In practice, however, the diminution test's weaknesses eclipse its affirmative elements.

The floodplain cases reveal particularly well the diminution test's greatest shortcoming—its tendency to ignore the regulatory circumstances surrounding private losses.[87] The courts in most floodplain cases quite properly examined the public interest in deciding whether the legislature had a proper regulatory purpose in the first place. But they purported to drop public interest considerations in deciding the determinative compensation issue. In this way the courts could find excessive private loss without even considering the dangers of flooding. The legislature's original balancing of interests, however, is as relevant to the takings question as it is to the question of authority to regulate. Thus, while the diminution test may work very liberal results in zoning cases where property usually has a profitable fall-back use, its adoption in different fact situations leads courts to ignore the police power's fundamental function of protecting against public harms.[88]

86. Blackstone states that "[t]here is nothing which so generally strikes the imagination, and engages the affections of mankind, as the right of property; or that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe." 2 W. BLACKSTONE, COMMENTARIES *2.

87. The courts in two recent floodplain cases totally failed to mention flood dangers. Dooley v. Town Plan & Zoning Comm'n, 151 Conn. 304, 197 A.2d 770 (1964); Bartlett v. Zoning Comm'n, 161 Conn. 24, 282 A.2d 907 (1971).

88. The courts thus ignore the purpose for which the legislature passed the regulations in the first place.

Fortunately, the courts' enchantment with the diminution theory does not always stop them from striking a balance between private loss and public interest in practice. The degree of loss test, for example, apparently asserts that constitutionality can be determined by measuring individual loss alone.[89] Loss of a certain magnitude will automatically constitute a taking; loss of a lesser percentage will not. The fact that no court or commentator has ever dared to stipulate such a magic magnitude for general application as a takings test illustrates the poverty of this approach.[90] Each exercise of the police power is unique, and unless concepts of constitutional fairness can be quantified, a percentage mark set for one situation should only coincidentally apply to another.

In the absence of a fixed demarcation point, the percentage approach per se can only serve as a rationalization for judicial decisions. The holdings can only be explained by recognizing that in fact, if not in theory, courts view more than mere individual loss. In some cases courts find impermissible takings when only minor diminutions have occurred.[91] By contrast, in an astonishing number of other cases government actions causing percentage losses of 75 percent and more have been upheld.[92] The latter cases are complemented by longstanding jurisprudential support for uncompensated 100 percent diminutions like dynamiting a house in the path of an urban fire or destroying diseased cattle.[93] The wild disparity in holdings has led one commentator to argue that diminution is not the courts' dominant standard.[94] The examples, however, hardly prove the diminution test's eclipse. They simply show that the diminution test in practice includes

89. *See* text accompanying note 81 *supra.*

90. Although some observers recently have tried to find a general standard by collating the average diminution percentages in broad random samplings of cases, they fail to prove much beyond the unsurprising fact that higher percentage losses tend to be stricken more often than smaller ones. *See* J. KUSLER, *supra* note 50, at 139, 194-96 n.3 (1971). The survey did not distinguish among the different factual situations and presentations of the cases, but did note that percentage figures have shortcomings as standards.

91. This happens notably in zoning cases where public objectives or governmental arbitrariness are attacked. *See* Scott v. Springfield, 83 Ill. App. 2d 31, 226 N.E.2d 57 (1967); Oakwood at Madison, Inc. v. Township of Madison, 117 N.J. Super. 11, 283 A.2d 353 (1971); Newsom, *Zoning for Beauty*, 5 NEW ENG. L. REV. 1 (1969).

92. *See* Consolidated Rock Prod. Co. v. Los Angeles, 57 Cal. 2d 515, 20 Cal. Rptr. 638, 370 P.2d 342, *appeal dismissed*, 371 U.S. 36 (1962); Sax, *Takings and the Police Power*, 74 YALE L.J. 36, 41-46 (1964).

93. *E.g.*, United States v. Caltex, Inc., 344 U.S. 149 (1952); Pennsylvania Coal Co. v. Mahon, 260 U.S. 339, 415-16 (1922); House v. Los Angeles County Flood Control Dist., 25 Cal. 2d 384, 391, 153 P.2d 950, 953 (1944).

94. Sax, *supra* note 92, at 44.

more than mere mechanistic reliance upon a percentage of individual loss. When a court proscribes a 66 percent loss, without saying that all losses of that degree are unconstitutional, it must mean only that in one particular situation it has determined for reasons beyond simple percentage that a particular loss of 66 percent is excessive and unreasonable. When it later upholds a regulation inflicting the same percentage loss, it must have decided that, for some external reason, a 66 percent loss is not excessive in the second fact situation.

The cases also follow an erratic course in defining the property base for the diminution measure. The percentage factor can fluctuate wildly according to the definition. If a court views only the restricted portion of a holding, it will necessarily find that a regulation causes a much larger percentage loss than if it views the entire parcel. In *State v. Johnson*[95] the Maine Supreme Court, in sustaining on diminution grounds an attack on a wetlands regulation governing a portion of plaintiff's property, completely ignored plaintiff's intense development of the unregulated portion. Conversely, the courts in traditional zoning cases routinely uphold setback regulations that prohibit virtually all structural uses on substantial portions of residential lots, basing their zoning diminution judgments on the whole parcel.[96] The degree of loss inquiry apparently attempts to judge the personal burden imposed upon property owners; yet it does so only by viewing arbitrary subdivisions of particular holdings.[97] Judges have been unclear in their definition of the property base for takings purposes since Holmes and Brandeis differed over whether the Supreme Court should weigh the Pennsylvania Coal Company's restricted coal pillars alone or its whole coalfield.[98] Since no rational or jurisprudential standards channel ju-

95. 265 A.2d 711, 713 (1970). *But cf.* Commissioner of Natural Resources v. S. Volpe & Co., 349 Mass. 104, 206 N.E.2d 666 (1965).

96. Curry v. Young, 285 Minn. 387, 173 N.W.2d 410 (1969) (indicating that setback restrictions will be reviewed on the basis of the whole parcel, not the regulated portion alone); Hoshour v. County of Contra Costa, 203 Cal. App. 2d 602, 21 Cal. Rptr. 714 (1962); *cf.* Commissioner of Natural Resources v. S. Volpe & Co., 349 Mass. at 112, 206 N.E.2d at 671-72 (the court squarely required profit valuations based on the whole "locus" and not merely the regulated portions). This approach is generally commendable.

97. Unreasonable hardship refers to consequences to the regulated parcel and not to plaintiff's personal financial situation. *See, e.g.*, Style Rite Homes, Inc. v. Zoning Bd. of Appeals, 54 Misc. 2d 866, 283 N.Y.S.2d 623 (Sup. Ct. 1967). Thus, theoretically, widows and orphans do not receive special protection from zoning boards and reviewing courts; and welfare takes care of hard cases.

98. Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 414-19 (1922). The courts have evolved no rules for defining the basis of the diminution inquiry; in fact, apparently neither courts nor counsel have identified the issue as the strategic point it is.

dicial subjectivity in defining the concept, courts should be reluctant to adhere to the degree of loss analysis.[99]

Like the degree of loss test, the conceptually defined residuum standard of diminution must flex in practice. On its own terms, the residuum approach attempts only to define a minimum reasonable use that regulators may not take away. Since the courts obviously cannot declare a single minimum use that would apply to all fact situations, they must apply the test with the flexibility necessary to assure fairness in individual cases. In some cases the residuum standard's necessary flexibility is built in; a test requiring some "reasonable" remaining use obviously allows freewheeling judicial balancing. And even where the words appear to be quite specific, the courts have found room for adjustment.

Courts often read the residuum test to require a "profitable" residual use. While this profitability standard sounds quite clearcut, the decisions employing it demonstrate that the residuum test inevitably incorporates numerous subjective variables. *Arverne Bay Construction Co. v. Thatcher*[100] is probably the best known decision turning upon the profitability of residual permitted uses. Writing for the majority of the New York Courts of Appeals, Judge Lehman declared that since residentially zoned land had no profitable use for residences at that time or for the reasonably foreseeable future, the regulation was unconstitutional as applied. In finding that permitted uses were not profitable, he viewed the nature of surrounding development, market conditions, and the zone board's plan for orderly area development. Presumably agriculture would have been allowed in the residentially zoned area, and the land could have yielded some small monetary return if planted in wheat or geraniums. If this potential return would not constitute "profit" in legal terms, then Judge Lehman's test must have incorporated further assumptions to determine what was a *reasonable* rate of return in the circumstances. Analytically, this would involve setting a base figure and the reasonable rate that should be

Only rarely will the courts combine legally separate but contiguous parcels in assessing constitutional validity. *See* Koff v. Incorporated Village of Flower Hill, 29 App. Div. 2d 655, 286 N.Y.S.2d 636 (1968); Sax, *supra* note 92, at 60.

99. The approach also produces great potential for private fraud. In several cases the courts have rejected attempts to qualify for variances by dividing property so as to produce substandard lots, either on grounds implying fraud or that the "trouble was of plaintiff's own making." Corsino v. Grover, 148 Conn. 299, 170 A.2d 267 (1961); Rodee v. Lee, 14 N.J. Super. 188, 81 A.2d 517 (1951); Richman v. Philadelphia Zoning Bd. of Adjustment, 391 Pa. 254, 137 A.2d 280 (1958).

100. 278 N.Y. 222, 15 N.E.2d 587 (1938).

realized on it. Moreover, Judge Lehman indicated further definitional flexibility, in saying that the zone would have been held constitutional if permitted uses would have become "profitable" in a "reasonable amount of time."[101] Judge Lehman's residuum test, therefore, left him ample scope to adjust the contending interests according to an implicit balance.

Granting the possible flexibility within the residuum test, its terms nevertheless bias a court's approach in favor of private property. It makes consideration of public interest extremely difficult, for example, in cases where the only profitable use for a piece of property is highly dangerous. If the market assigns its minimum profit expectation to a use that possesses great potential for public disaster, like floodplain residential development, the residuum definition strictly applied will *support* that use.[102] Some regulatory situations may present cases where *no* valuable market use can be consistent with public safety. Whether a court would void the restrictions, permitting unlimited development, or require prohibitively expensive compensation in such cases would depend on how faithful the court is to the residuum test.

Two recent floodplain cases give fleeting indications that the more realistic courts are recognizing that market loss by itself should not be dispositive of the takings question. In *Turnpike Realty Co. v. Town of Dedham*,[103] the Massachusetts courts reviewed the floodplain literature, analyzed the hydrological characteristics of the subject floodplain property, and upheld a zone that allegedly reduced the value of the 62 acre parcel from $431,000 to $53,000. In the middle of a discussion on residual uses, the Massachusetts Supreme Court gratuitously

101. *Id.* at 224, 15 N.E.2d at 590, 592.

102. The court in Turnpike Realty Co. v. Town of Dedham, — Mass. —, 284 N.E.2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973), avoided this anomalous result only by contorting the concept of profitability. In that case the court upheld a regulation relegating suburban property worth $431,000 to tree nursery use. If the plaintiff had paid a $300,000 market value for the land, for instance, a tree nursery or other agricultural use would probably not yield a sufficient return on the investment. *Cf.* McCarthy v. City of Manhattan Beach, 41 Cal. 2d 879, 264 P.2d 932 (1953), *cert. denied*, 348 U.S. 817 (1954).

Justice Brandeis, attempting to raise this question in *Pennsylvania Coal*, stated: "Restriction upon use does not become inappropriate . . . merely because it deprives the owner of the only use to which the property can then be profitably put . . . . If by mining anthracite coal the owner would necessarily unloose poisonous gases, I suppose no one would doubt the power of the state to prevent the mining without buying his coalfields . . . ." 260 U.S. at 418; *cf.* Spiegle v. Borough of Beach Haven, 46 N.J. 479, 218 A.2d 129 (1966) (New Jersey Supreme Court attempted to escape the anachronisms of the diminution theory by assuming that property value reflects common sense safety concerns).

103. — Mass. —, 284 N.E.2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973).

dropped a statement that sounded very much like an explicit recognition of a balancing test. The court stated: "Although it is clear that the petitioner is substantially restricted in its use of the land, *such restrictions must be balanced against the potential harm to the community* from overdevelopment of a flood plain area."[104] This is precisely the perspective that the earlier floodplain cases lacked. The court was not only recognizing the existence of a balance, but it was also specifying that in striking the balance the courts should define the public interest in terms of "harms." The innovative implications of the statement are obvious, but the court went no further. The holding quite clearly turned on traditional residuum reasoning.[105]

Anticipations of a breakthrough in constitutional takings cases were further aroused, and frustrated, in the most recent floodplain appeal, *Turner v. County of Del Norte*.[106] The California district court upheld a county floodplain ordinance relying on evidence showing that a proposed subdivision would create flood hazards to residents and property within and outside the zoned area. "The zoning ordinance in question," the District Court of Appeals wrote in affirming, "imposes no restrictions *more stringent than the existing danger demands*."[107] Like the *Turnpike Realty* court's aside, this statement asserts a proportionality between private loss and public hazard. If the court had said no more, the language would have implied a new takings test. Although declaration of a new constitutional principle seemed imminent, the court undercut the possibility with its very next sentence. Invoking the classic residuum test, it declared that restrictions were not too stringent because "[r]espondents may use their lands in a number of ways which may be of economic benefit to them."[108] The definition of residual beneficial uses in each circumstance, of course, allowed some balancing, but the weighing process remained implicit and unexplained. Faced with regulatory situations in the floodplain cases that should compel judicial recognition of a broader takings formula, the courts have forgone the opportunity to discard or improve upon the diminution test.[109]

104. *Id.* at 900 (emphasis added).
105. In returning to the residuum standard, the court pointed out that "[t]he petitioner . . . has not been deprived of all beneficial uses of its property." *Id.* at 899.
106. 24 Cal. App. 3d 311, 101 Cal. Rptr. 93 (1972).
107. *Id.* at 315, 101 Cal. Rptr. at 96 (emphasis added).
108. *Id.*
109. Even cases upholding the most drastic losses do so in euphemistic traditional

Even Holmes apparently recognized that public considerations were necessary to the application of his handiwork. Although he spoke in terms of private loss in *Pennsylvania Coal*, his reasoning did not ignore the constitutional balancing of public versus private interests. He recognized that government "could hardly go on if to some extent values incident to property could not be diminished without paying for every such change."[110] Thus, Holmes noted a balance that turned in part upon the weight of the public interest. If, he said, the Court's review of the legislation had been limited to the two plaintiffs' houses on one hand and the coal property on the other, the statute clearly would not "disclose a public interest sufficient to warrant so extensive a destruction of the defendant's constitutionally protected rights."[111] But the intervention of the Attorney General of Pennsylvania and the neighboring coal country city of Scranton into the plaintiff's action brought a wider public interest into Holmes' treatment of the case, forcing him to go further into the question than he would have gone if only two plaintiffs' interests were endangered. To determine whether the coal company had suffered a taking, he then examined whether considerations supporting the statute disclosed a "public interest sufficient to warrant so extensive a destruction."[112] Holmes' answer ultimately was that they did not,[113] but the way he had framed the question is far more instructive than his conclusion on the facts. By indicating that the constitutional conflict could have opposite outcomes—depending upon the amount of public interest, *while the coal company's property position remained absolutely the same*, he showed that variable external factors, like the public interest concerns of the city of Scranton and the state attorney general, had to be weighed against individual loss in a constitutional balance. Unfortunately, while

terms. For example, they will find no "undue" loss in a total inability to develop. *See* Candlestick Properties, Inc. v. San Francisco Bay Conservation & Dev. Comm'n, 11 Cal. App. 3d 557, 89 Cal. Rptr. 897, 906 (1970).

110. 260 U.S. at 413.

111. *Id.* at 414. The basic difference between Holmes and Brandeis in *Pennsylvania Coal* apparently is not over the law to be applied, but rather over what facts to apply to the law. *See* text accompanying note 98 *supra.*

112. 260 U.S. at 414.

113. Holmes' answer probably turned on contract or estoppel grounds. He made much of the fact that the city and private owners should have known the danger and reserved the right to support when selling coal rights to the company. *Id.* at 415-16. Thus the judicial convention of construing contracts in favor of grantees (who typically are at more of a disadvantage) here supports the corporation that best knew the possibilities of surface hazard. *Compare* Buchanan v. Watson, 298 S.W.2d 40 (Ky. Ct. App. 1956) *with* Martin v. Kentucky Oak Mining Co., 429 S.W.2d 396 (Ky. Ct. App. 1968).

other Holmes opinions reflect the same formulation of the diminution test, he never made the balancing feature of his test more precise.[114]

Explicit recognition of the balancing process in the diminution test, however, will not magically cure diminution's infirmities. A few state courts have confronted the logic of the diminution test and attempted to square their decisions with it by recognizing the balancing process, but their decisions raise further questions about what and how to balance. Illinois zoning decisions have regularly affirmed that ordinances will be upheld where the public benefit outweighs the private detriment.[115] Other states have echoed the formula in zoning cases,[116] and some have applied it to other police power areas.[117] Their commendable approach is apparently practicable; neither the court system nor the institution of private property has perished in states that apply it. But the balancing test in such pristine form requires too many major subjective adjustments. If all public "benefits" weigh against private loss, the state will prevail in virtually every case, taking property rights without compensation wherever it needs them more than the owner. If not all beneficial effects should enter the takings equation, the courts must decide which ones to exclude; having identified relevant benefits and costs, the courts must still decide their relative weights. Since the balancing-of-interests courts have not yet adequately addressed these problems, their handling of the cases remains grossly subjective.

114. *Cf.* Block v. Hirsh, 256 U.S. 135 (1921); Tyson & Brothers v. Banton, 273 U.S. 418, 445-47 (1927). As Professor Dunham admits, "On the question 'how much is too much,' the courts have never been able to develop . . . a standard more meaningful than balancing the public need against the private cost." Dunham, Griggs v. Allegheny County *in Perspective: Thirty Years of Supreme Court Expropriation Law*, 1962 SUP. CT. REV. 63, 76 (1962) [hereinafter cited as Dunham, *Thirty Years*]. *See* Kratovil & Harrison, *Eminent Domain—Policy and Concept*, 42 CALIF. L. REV. 596 (1954).

115. One Illinois court stated that "the loss in value suffered by the plaintiffs [is not] determinative. The proper inquiry is—is this loss *necessary* because of a corresponding benefit to the general public?" Dixon v. County of Kane, 77 Ill. App. 2d 338, 340, 222 N.E.2d 354, 356 (1966) (emphasis added). *See* J. METZENBAUM, THE LAW OF ZONING 1430 (2d ed. 1955). The Illinois courts also apply the residuum test. Whittingham v. Village of Downers Grove, 101 Ill. App. 2d 166, 242 N.E.2d 460 (1968).

116. Rochester Business Inst., Inc. v. City of Rochester, 25 App. Div. 2d 97, 267 N.Y.S.2d 274 (1966).

117. Iowa Natural Resources Council v. Van Zee, 261 Iowa 1287, 158 N.W.2d 111 (1968); Benschoter v. Hakes, 232 Iowa 1354, 8 N.W.2d 481 (1943); Shirley v. New Hampshire Water Pollution Comm'n, 100 N.H. 294, 300, 124 A.2d 189, 194 (1956); *cf.* ME. CONST. art. I, § 21 (1965): "[P]rivate property shall not be taken for public uses . . . unless public exigencies require it." The provision is arguably limited to compensated takings.

## III. Alternatives to Diminution

Constitutional fairness continues to be an enigma under the diminution test. Finding an alternative test that serves as a helpful guide for courts and adequately represents both private and public interests ranks as one of the most difficult and least promising tasks of the law. The array of alternate takings reveals further perceptions of constitutional fairness, but does not provide any clearly better alternative. The physical appropriation or "invasion" test, for example, can be dismissed out of hand. The courts for some time have recognized that the presence or absence of physical governmental intrusion upon property cannot be an adequate indicator of constitutionality.[118] The noxious use test, as several observers have noted, offers little more. In asking judges to determine whether the restricted property is a noxious cause of public harm, that test only provides a post hoc rationalization for judicial gut reactions.[119]

Professor Dunham's takings test draws upon the noxious use test's rationale in more sophisticated fashion, and ultimately it suffers the same infirmities. Dunham asserted that a regulation causing property losses may be sustained if the legislature intended to prevent public *harm*, but not if it sought to obtain public *benefit*.[120] Accordingly, one problem the courts must face under this test "is to determine whether the prevention of . . . harm is in fact the objective of the legislation."[121] If so, the legislation will be sustained; it will be struck down "where . . . [its] purpose and effect . . . was to compel one or

118. *But cf.* United States v. Central Eureka Mining Co., 357 U.S. 155 (1958); Sax, *supra* note 92, at 47-48. The converse proposition is still good: government must compensate when it physically enters and holds land, unless it does so to perform an official inspection or prevent an imminent catastrophe.

119. *See, e.g.*, Mugler v. Kansas, 123 U.S. 623 (1887); Sax, *supra* note 92, at 39, 48-50. The test works by denying that uses deemed "noxious" are property. Another test unworthy of judicial attention is the "incidental injury" test, which states that "an individual cannot complain of incidental injury, if the [police] power is exercised for proper purposes of public health, safety, morals and general welfare, and if there is no arbitrary and unreasonable application in the particular case." Wilkins v. City of San Bernardino, 29 Cal. 2d 332, 338, 175 P.2d 542, 547 (1946). Loss is *always* incidental, since causing private injury is never per se the purpose of a statute.

120. Several floodplain cases have made this distinction. *See, e.g.*, Bartlett v. Zoning Comm'n, 161 Conn. 24, 282 A.2d 907 (1971); Morris County Land Improvement Co. v. Township of Parsippany-Troy Hills, 40 N.J. 539, 555-56, 193 A.2d 232, 241-42 (1963); National Land & Inv. Co. v. Easttown Twp. Bd. of Adjustment, 419 Pa. 504, 215 A.2d 597 (1965).

121. Dunham, *Flood Control, supra* note 37, at 1124. *See also* Dunham, *Thirty Years, supra* note 114, at 75-76; Dunham, *A Legal and Economic Basis for City Planning*, 58 COLUM. L. REV. 650, 666-70 (1958). This principle derives from E. FREUND, THE POLICE POWER § 511 (1904).

more particular owners to furnish without compensation a benefit wanted by the public."[122] According to this proposed test, courts have only to determine the real legislative purpose to know whether the regulation is an impermissible taking.[123] This attractive constitutional test draws upon traditional concepts of tort law and basic principles of fairness.[124] Unfortunately, its broad either-or criteria do not work, even on Professor Dunham's own terms. As he noted, the courts have upheld a number of property restrictions explicitly designed to procure public benefits.[125] Moreover, every "harm" does not necessarily justify property restrictions. Even if the legislature were convinced that littering, an obvious public harm, increased with any form of developed land use, its prohibition of development for that reason alone would clearly violate concepts of constitutional proportionality. The dispositive decisional value of a benefit or harm varies widely according to factual contexts.

Even more fundamentally, however, Dunham's test suffers from its focus upon legislative *purpose*. That framework may be completely misleading, since the real issue is the due process *effect* upon individuals and their property. Arguments about legislative objectives do not penetrate to that level of analysis. Further, Dunham's test fails to define the operative words "harm" and "benefit." While these vague words should raise few problems in extreme cases, in more difficult situations, one person's "benefit extracted" can be another's "harm avoided." In the flood plain situation, for example, a court could label a restriction against private encroachment upon floodplain storage areas as the prevention of harm to downstream citizens or the acquisition of a public benefit in decreased flooding. Likewise, a court could view the prohibition of fill in coastal wetlands as either the free public

122. Dunham, *supra* note 121, at 669. Dunham hints at a distinction between a public objectives test and a private loss test by looking to both purpose and effect. *See also* Heyman & Gilhool, *supra* note 65, at 1122-28.

123. Dunham, *Flood Control, supra* note 37, at 1124. *See also* Dunham, *Property, City Planning, and Liberty*, in LAW AND LAND 28, 38-43 (C. Haar ed. 1964).

124. *See, e.g.*, J.S. MILL, *On Liberty*, in ON LIBERTY AND CONSIDERATIONS ON REPRESENTATIVE GOVERNMENT (R. McCallum ed. 1946) ("[T]he only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others." *Id.* at 8.); *cf.* Michelman, *Property, Utility and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law*, 80 HARV. L. REV. 1165, 1196-1201 (1967).

125. Dunham, *City Planning, supra* note 121, at 666-67. *See, e.g.*, Jenad, Inc. v. Village of Scarsdale, 18 N.Y.2d 78, 218 N.E.2d 673, 271 N.Y.S.2d 955 (1966). *But see* Ronda Realty Corp. v. Lawton, 411 Ill. 313, 111 N.E.2d 310 (1953) (the court, had it chosen to do so, might have upheld the regulation on the reciprocity-of-benefit principle).

acquisition of nature preserves or the protection of the fish and shellfish industries.[126] The characterization of each restriction ultimately depends on what the court considers proper cost allocations in the circumstances, which ultimately devolves to what it expects property owners to absorb and what it expects the public to pay for. As a constitutional test, the definitions of "harm" and "benefit" are thus conclusionary self-fulfilling prophecies that in normal situations prove unhelpful.

By basing constitutionality on a blanket characterization of the legislative objective, Dunham's test, like the noxious use test from which it springs, invites the courts to use it as a retrospective rationalization rather than as a guide for decisions.[127] Our basic perception, however, remains important. The public generally does not object to governmental property restriction when it can attribute fault to the private use. Our conceptions of fairness, however, are offended by government seizure of private rights to obtain results that the property owner had no responsibility to provide.

Professor Sax's first attempt to define a takings test echoed Dunham's distinction and it also focused upon the nature of the government action. If a private individual's regulatory loss enhances the government's "resource position in its enterprise capacity, then compensation is constitutionally required," but when private loss is due to the "government acting in its arbitral capacity," no compensation is necessary.[128] Although Sax looked to the results rather than the purpose of government regulation in applying this test, he was drawing the same distinction as Dunham's public objective test. The government acting in its enterprise capacity obtains public benefits; the government acting in its arbitral capacity prevents property owners from imposing harms upon others.

Like Dunham's analysis, Sax's test assumes that the government has a duty to bear some public welfare expenses that undeservedly benefit it as an enterprise if they are provided by private citizens under the pressure of regulations.[129] Since everyone agrees that governments have a duty to pay for highway rights-of-way, zoning land for

126. *See generally* Hitchcock, *Can We Save Our Salt Marshes?*, 141 NAT'L GEOGRAPHIC 729 (1972). *Cf.* Candlestick Properties, Inc. v. San Francisco Bay Conservation and Dev. Comm'n, 11 Cal. App. 3d 577, 89 Cal. Rptr. 897 (1970); State v. Johnson, 265 A.2d 711 (Me. 1970).

127. *See* Michelman, *supra* note 124, at 1196-97 n.66.

128. Sax, *supra* note 92, at 63.

129. *Id.* at 71. Because it focuses on the effect, not merely the purpose, of the regulations, however, Sax's test differs significantly from Dunham's.

highways only would require compensation. Conversely, nuisance-type regulations merely arbitrate between opposing private parties and require no compensation. The difficult cases, however, lie between the extremes, and while Sax identifies a fairness distinction that makes human sense, his enterprise-arbitration analysis again offers only a self-fulfilling definition as a test. If a judge thinks that government has a duty to assume a cost, he requires compensation for the regulatory benefits it has received. Otherwise, he deems the government merely an arbitrator who is acting on behalf of segments of the public and does not compel compensation.[130]

Professor Michelman's masterful analysis of just compensation represents a new approach to the constitutional takings question that is no less stimulating for its failure to provide a satisfactory judicial test. Michelman argued a utilitarian theory: that all government measures should seek to maximize "efficiency gains"—the amount by which a measure's benefits exceed its costs.[131] He then proceeded to define two other costs of a regulation that legislatures and courts normally ignore. Initially, he defined "demoralization costs" as the societal cost that arises from investors' realization that their property may be taken without compensation. "Settlement costs" refers to the expense in time and effort it would take to evaluate and pay demoralization costs. If either demoralization or settlement costs are lower then the efficiency gain of a regulatory measure, then a utilitarian legislature would adopt it. If settlement costs are lower than both demoralization costs and efficiency gains, the same legislature would pay compensation. In the floodplain situation, for example, settlement costs would be vast because of difficulties in locating demoralized persons and ascertaining the dollar value of their demoralization. But since floodplain development is marginal and since most people might expect development restrictions on land near rivers, demoralization costs would be small. Under Michelman's test, floodplain restrictions should thus be implemented whenever their efficiency gain is larger than the demoralization cost. In practice this test would probably eliminate compensation in most floodplain cases.

130. Sax today "view[s] the problem as considerably more complex." Sax, *supra* note 38, at 150 n.5. He has abandoned the distinction postulated in this first takings test in favor of quite another approach. *See* text accompanying notes 133-36 *infra*.

131. Michelman, *supra* note 124, at 1214-18. Michelman used a straightforward definition of costs and benefits. He stated that "benefits are measured by the total number of dollars which prospective gainers would be willing to pay to secure adoption, and losses are measured by the total number of dollars which prospective losers would insist on as the price of agreeing to adoption." *Id.* at 1214.

Michelman's theory is not, except by extension, a judicial takings test; it serves only as a guide to legislative and administrative policy on regulatory compensation. Yet, it is directly relevant to judicial takings tests. Michelman asserted that utility is fairness because society's expectations about the security of property rights will be realized under a utilitarian compensation rule that takes demoralization costs into account. He pointed out that judges already follow this kind of utilitarian rationale by preventing shocking regulatory results that would offend the property-owning public. Michelman's own formula is too abstract to serve as a working test, and he has conceded that some legislative "artificial settlement" rule may be more practical. His utility concept of fairness, furthermore, can often strike inequitably on the individual level; it thrusts burdens upon the poor minority chump whose situation is so different from others that his disgruntlement does not create appreciable demoralization costs for society at large.[132] Even if Michelman's weighing of frustrated expectations can sometimes shortchange the balance, his analysis of judicial takings problems points out the crucial function of social expectations in forming most fairness judgments.

Professor Sax's latest takings test adopts a more appealing standard of constitutional fairness than draconian utility, but produces a policy-dominated test that fails to discriminate between different degrees of private interest. His most recent takings article focuses upon the "inextricability" of competing uses within resource networks. Virtually all uses impinge upon other property owners' utilization of the common environment. A person's claim to clean air for breathing, for example, competes with a power plant's desire to use it for stack gas disposal.[133] Virtually all actual and potential uses "spill over" beyond their own property lines[134] making intermingled claims upon common resource networks. Accordingly, Sax asserted that a property owner cannot make a constitutional complaint about any legislative allocation that chooses some spillover uses over others, unless the choice is made for arbitrary or constitutionally proscribed reas-

132. Michelman does suggest adjustments to improve the lot of minorities, either through judicial subjectivity or legislative "artificial settlement" provisions. *Id.* at 1248-49, 1255-56.

133. Sax, *supra* note 38, at 154.

134. The definition of spillovers can be very broad, including noise and smoke crossing property lines, impositions on common resources, use of property to injure others or to cause burdens on government services, and claims for a zone of quiet around airports. *Id.* at 161-67.

ons. Sax's constitutional theory clearly draws upon nuisance law. In nuisance cases courts traditionally have chosen between spillover uses, and losers have no constitutional complaints even if their loss is disproportionate to the winners' gain.[135] The courts, however, are able to review the individual circumstances of competing uses and follow a rough proportionality that can adjust the allocation of uses to expectations in each case. In Sax's analysis, on the other hand, the legislature is the only forum that reviews private interests. Yet the legislature need not totally ignore the individual. In making resource decisions it should carefully balance all public and private costs to maximize overall benefits. The legislature can thus consider individual losses as well as Michelman's demoralization costs. Still, the legislative process does not assure consideration of specific cases; major individual misallocations may go unobserved in the entire regulatory process.[136]

Sax's test further avoids the distinction made in his first takings analysis between regulating to prevent harm to others and regulating to obtain certain gains for governmental enterprise. His newer test does not consider the nature of property development's effects upon the public. Instead, as soon as a use spills over onto others, no matter how minor the effect, it loses its right to individual constitutional consideration. While this result has antecedents in the common law, it does not harmonize with present society's fairness expectations as expressed in the takings decisions. If property owners really expected that virtually any effect upon others may justify the abatement of their property uses, property ownership would be a high stakes gamble indeed. The expectations basic to the fifth and fourteenth amendments' guarantees are probably more discriminating. People anticipate that courts will implement some kind of proportionality between private loss and impacts upon the affected public, and for the foreseeable future that expectation will continue to be an important element in American notions of fairness.

Insofar as Sax does not distinguish constitutionally between dif-

135. *Cf.* Whalen v. Union Bag & Paper Co., 208 N.Y. 1, 101 N.E. 805 (1913) (paper mill shut down due to injuries sustained by a downstream farmer in the amount of $100). Appeals of such tort decisions are argued on tort law grounds, not constitutional takings grounds.

136. The policy-makers' balance governs, not the court's view of individual situations, except to identify the existence (not the degree) of spillovers or the arbitrariness of the choice of plaintiff as the object of regulation. Sax, *supra* note 38, at 176. The political process rather than the judicial process will be the major restraint on government over-regulation in an "excess of zeal." Sax believes that in most legislative decisionmaking, property owners can defend themselves adequately. *Id.* at 171.

ferent degrees of private loss or private effect, he repeats the flaws of the old reciprocity test under which restricted persons who gained any benefits from a restriction had no constitutional complaint. The courts were never much impressed with the fairness potential of that test.[137] Nevertheless, the core of his theory—that no resource user is an island separate from those around him—must be a central perception in any modern test of government regulation. By exercising uncontrolled use of their land, property owners impose burdens on others, and any constitutional test that ignores these spillovers closes its eyes to the reality of the regulatory situation.

## IV. Diminution Revisited

### *A. Balancing*

From the strengths and weaknesses of the competing takings tests emerge a number of perceptions that should be part of any reformulation of takings principles. As a policy matter, legislatures allocating resource uses should attempt to maximize total social good by fully considering total public and private costs and benefits prior to deciding upon property use regulations. Yet if, as a constitutional matter, the courts are to review the effect of police power regulations upon particular individuals,[138] they cannot ignore the various competing claims in each regulatory case. Comprehensiveness of review is necessary to reflect the real multilateral nature of regulation and to assure that neither private property losses nor public policy pressures will monopolize judicial review. Diminution thus continues to be important, but in light of an explicitly recognized need to balance public considerations, it can no longer remain the preeminent inquiry.

In reviewing both sides of regulatory conflicts, courts must be more discriminating than they have been in the past. Any balancing test must more subtly quantify public and private interests. An appropriate constitutional balancing cannot simply compare the total ef-

137. The reciprocity principle—that regulation is justified so long as the regulatee shares to some degree in the benefits of restriction—appeared even in *Pennsylvania Coal.* 260 U.S. at 415, 442. Yet that principle's disregard of proportionality and failure to distinguish between classes of benefits and harms apparently limited its appeal on its own merits, and few modern courts use the test. *Cf.* Heyman & Gilhool, *supra* note 65, at 1128-29.

138. Fifty years of the dominance of diminution argue that court review of regulatory effects on individuals cannot and should not be eliminated. Indeed, the utilitarian analysis of proportionality in society's expectations about regulation supports future adherence to the principle. *See* Michelman, *supra* note 124, at 1183-1201, 1224-45.

fects on either side. The recurrence of harm-benefit tests over the years and the failure of existing balancing tests to win more adherents[139] both testify to the need for a constitutional distinction between the blameworthy effects for which an individual may be held accountable and the public enterprise benefits that property owners do not have to provide free for the rest of society.[140] The distinction is often difficult to draw and is easy to misuse. But it is unavoidable in any takings test that attempts to be consistent with the constitutional fairness principles enunciated by courts and commentators over the years. Finally, the fairness expectations embodied in most takings tests illustrate that a discriminating balancing process requires some proportionality between the degrees of public need and private loss. While minor threats to the public cannot justify devastating private losses, large personal losses may be supportable when great public interests are imperiled.[141]

The essential proposition that distills from the confusion of the takings tests is that courts must explicitly recognize both the costs that private uses impose upon the public and the individual losses that government action causes. This approach forces courts to consider complex physical and ecological resource relationships and to distinguish between the different effects of property use.[142] Using this process, the courts are in a far better position to undertake the balancing task that remains at the heart of judicial review. Reconstituted in this way, the balancing approach does two things: it offers one firm minimum constitutional conclusion and produces a two-stage takings inquiry that provides a more rational and workable rule.

The first stage of this "diminution-balancing" approach consists of implementing the assertion that regulations are always constitutionally valid when the costs that an unrestricted property use imposes upon the public would be greater than private diminution losses. No private loss, in other words, can be constitutionally excessive if it is less than the costs it would impose on others. When private losses *exceed* im-

139. 1 R. ANDERSON, *supra* note 52, at § 2.19 (1968).

140. The distinction recurs in other guises. For example, affirmative resource planning schemes designed to foster clean air have been called "more suspect" than negative plans emphasizing protection against harm. Pollack, *Legal Boundaries of Air Pollution Control—State and Local Legislative Purpose and Techniques,* 33 LAW & CONTEMP. PROB. 331, 339-42 (1968).

141. Excessiveness should be judged only on net private losses over and above potential public costs.

142. The courts in *County of Del Norte* and *Turnpike Realty* narrowly missed this vital point. *See* text accompanying notes 103-09 *supra.*

posed costs, the analysis continues to a second stage, at which other constitutional principles operate further to define constitutional excessiveness.

### *B. The First Stage*

The first stage of the diminution-balancing inquiry requires judges to determine whether private property losses caused by government regulations exceed the public costs resulting from unrestricted uses. Private property rights have traditionally been limited according to their effect upon other private property rights and public rights.[143] Legislatures, in restricting, allocating, and prohibiting specific uses, act on behalf of affected members of the public in the same manner as courts deciding between competing private property uses. The primary difference is that legislatures make general rather than specific use allocations, and thus they can choose among uses that never could comfront each other in court. Both kinds of intervention force property owners to internalize actual or potential damages caused by the use to which they put their land. Surely a private property owner has no greater constitutional property right against those who are protected by government regulations than he has against private litigants in common law actions. Just the opposite should be the case. Given the heavy presumption in favor of legislative enactments, regulations should be able to restrict cost-imposing uses far beyond the point of contemporary private tort actions.[144]

Since public rights traditionally have limited private rights, the recent expansion of public rights does not create a new jurisprudential basis for regulating property rights; it merely expands the situations for application of principles that adjust conflicting interests. Given this backdrop, the principle that private property rights may not prevail over public rights when the injury to the latter would be greater than the private harm sustained from regulation is certainly no radical proposition. To say otherwise is to assert that a property owner has a constitutional right to injure other interests confronting his in order to obtain or conserve a smaller gain for himself.

143. Public and private nuisance are the most obvious examples. *See* P. SCHROTH & Z. PLATER, ENVIRONMENTAL LAW: AN INTRODUCTION TO THE AMERICAN LEGAL SYSTEM 4.01 (Univ. of Mich., School of Natural Resources, 4th internal ed. 1973).

144. Nothing here argues that regulatory law should swallow up tort law, although that may be a danger in careless interpretations of Professor Sax's most recent article. Sax, *supra* note 38.

*1. Defining and Quantifying Costs.*—Quantification of private loss is a familiar judicial function in zoning cases, and it typically will be the easiest part of the constitutional review process. The courts can obtain the relevant base figure for regulatory losses by comparing readily available market valuations for a piece of property with and without regulation. Some contemporary judicial approaches to private property valuation, however, deserve cautionary notes. The courts should base loss figures on differentials in the market price of *land*, not on total development cost or anticipated profit. Since developers can relocate, banning the use at one location presumably would not completely eliminate the value of the plans. If they cannot develop elsewhere, the market will reflect that fact in premiums incorporated in the land valuation.[145] Further, in valuing restrictions upon development rights, courts must consider only those rights that property owners hold as against the state. The recent Maryland case of *Potomac Sand & Gravel v. Mandel*[146] demonstrates how this consideration may circumscribe the private loss figure. Plaintiff attacked the state's wetlands act, which prohibited him from dredging his property. Since the Maryland public trust doctrine reserved to the state a protective right over coastal wetlands, the court upheld the wetlands act on the ground that a person could not claim private loss for development restrictions subject to that trust. Thus, since the plaintiff had no right to dredge his property, the prohibition deprived him of no rights. The courts can and logically should view measures of private loss as the difference between the regulated and unregulated market value of the property rights that owners actually hold.[147] In some special cir-

145. Similarly, according to theories of market pricing, the higher cost of alternate sites will be reflected in base land prices. Some hard cases will involve parcels where an owner had made plans and preparations for development that is forbidden, and had not taken sufficient actions to establish a nonconforming use. *See generally* Waite, *Ransoming the Maine Environment*, 23 MAINE L. REV. 103, 116-18 & nn.64-66 (1971) (arguing that there need be no compensation paid for frustrated plans or speculative values).

146. 266 Md. 358, 293 A.2d 241 (1972).

147. The public trust principle should be extended to rivers. *See* Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970). Potomac Sand & Gravel Co. v. Governor of Maryland, 266 Md. 358, 293 A.2d 241 (1972), *cert. denied*, 409 U.S. 1040 (1973), involved a disingenuous use of the diminution test. Plaintiff's lands were 70 percent public trust wetlands and 30 percent non-trust lands. The court held that since plaintiff had nothing to lose to the state in 70 percent of its holdings, its loss was only 30 percent, which loss was "not of such a magnitude as to justify a finding that [the act] was . . . invalid." *Id.* at 375, 293 A.2d at 250. The court should have simply held that the amount of loss was justified by public harms inflicted by dredging valuable fish and wildlife holding grounds.

cumstances, however, loss figures may deserve expansion beyond that amount.[148] For example, when a court figures market value on a prior zone classification that was legislated in order to drive down acquisition costs or takings comparisons, a court might look to the value of the land before the prior classification.

The question of public costs imposed by unrestricted uses, which courts in traditional takings cases conveniently have ignored, also confronts a court in the first stage of the diminution-balancing analysis. The classification distinction between imposed "costs," and other innocent effects should not replay the obsolete "noxious use" tests and the awkward distinction between harms and benefits. Unless cost classes are defined with some degree of specificity, the diminution-balancing approach remains a subjective ramble by judges who are free to uphold or void regulations depending upon their identification of costs. The noxious use test was justifiably rejected for its crude characterizations of regulated uses, and its latter-day manifestations suffer the same defect. The diminution-balancing approach attempts to avoid these problems by restricting the function of harm identification. Ascertaining the existence of public costs is only one important component of the process instead of the dispositive takings criterion. The courts must further analyze the nature and degree of harm with great specificity in order to handle the further question of balancing. Judicial distinctions between privately externalized costs and other unattributable side effects inevitably remain subjective, and they run the risk of becoming tautologies like Dunham's harms and benefits. Yet guidelines are available to improve upon past attempts at the distinction.[149]

Another example of a court trying manfully to adjust the diminution basis to fit the natural context is Spiegle v. Borough of Beach Haven, 46 N.J. 479, 218 A.2d 129 (1966). The court assumed that property value was not lost where the "regulation [which prohibited development at the coastal dune line] proscribed only such conduct as good husbandry would dictate that plaintiffs should themselves impose on the use of their own lands." *Id.* at 492, 218 A.2d at 137. This ignores actual market value in order to achieve the rational end of recognizing storm hazards. Other base valuation questions include whether speculative value and the value of private extraordinary services should be discounted. *See* I. LEVEY, *supra* note 81, at 336-38, 344-46.

148. *See* City of Miami v. Silver, 257 So. 2d 563 (Fla. Dist. Ct. App. 1972); McHugh v. City of Dearborn, 348 Mich. 311, 83 N.W.2d 222 (1957); Winepol v. Town of Hempstead, 59 Misc. 2d 768, 300 N.Y.S.2d 197 (Sup. Ct. 1969).

149. The Supreme Court in its first exposure to zoning offered one guideline: "In solving doubts [about the validity of regulation] the maxim 'sic utere tuo ut alienum non laedas,' which lies at the foundation of so much of the common law of nuisances, ordinarily will furnish a fairly helpful clew." Village of Euclid v. Ambler Realty Co., 272 U.S. 365, 387 (1926) (for non-classicists, "use your own property so as not to

Courts in nuisance actions regularly decide which spillover property effects can figure into judicial allocations between competing property rights, and they do so by reflecting society's changing conceptions of property owners' rights and duties. Most courts have reversed their initial determination in smoke nuisance cases that air pollution was a reasonable adjunct of industrial progress. Aesthetic concerns may now be undergoing the same change. The judicial process of identifying some effects as common law harms can be similarly useful in identifying costs for takings question purposes.[150] In addition, the nuisance analogy illustrates that the characterization of some private effects may depend upon the nature of the public interest invaded. Some offensive property uses are not actionable in private nuisance because no private property rights are directly affected; yet they can be litigated in public nuisance if courts choose to recognize a public right beyond property rights.[151] Public trust theories can work in the same way by identifying various interests as trust interests of the state and opening otherwise nonactionable impositions upon those interests to judicial abatement.[152]

Judicial use of the nuisance analogy by no means restricts cost identifications to those property effects traditionally recognized as common law nuisances.[153] Property uses have broad effects beyond their own boundaries and far along the resource stream. While common law inquiry into causation stops fairly close to home, legislative and administrative resource allocation decisions are typically much wider, weighing costs throughout a resource network's stream of causation. Judicial review of these decisions should reflect the same inquiry.[154]

injure that of others"). Although precise quantification of total damages is probably beyond present technological capability, evidence of prior flood costs in comparable watersheds can afford a potent counterweight to private market losses.

150. For examples of judicial response to societal changes in resolving the takings question see State v. Hillman, 110 Conn. 92, 147 A. 294 (1930); Wulfsohn v. Burden, 241 N.Y. 288, 299, 150 N.E. 120, 122 (1925).

151. *Cf.* Attorney General *ex rel.* Township of Wyoming v. City of Grand Rapids, 175 Mich. 503, 141 N.W. 890 (1913).

152. *E.g.*, Just v. Marinette County, 56 Wis. 2d 7, 201 N.W.2d 761 (1972) (court recognized a public right in the natural environment, asserting that private ownership of property does not include the right to destroy property for future generations). *Cf.* Marks v. Whitney, 6 Cal. 3d 251, 491 P.2d 374, 98 Cal. Rptr. 790 (1971); Arnold v. Mundy, 6 N.J.L. 1, 71-78 (Sup. Ct. 1821).

153. *Cf.* J. KUSLER, *supra* note 50, at 152; FLOOD HAZARD AREAS, *supra* note 50, at 389 (1971). Traditional nuisance definitions do not go far enough in scope or remedy to be an adequate touchstone of real public costs.

154. Sax feels that "[i]f we wish to cope intelligently with the use of resources, we must focus attention on the nature and degree to which the consequences of any

Courts would give redress for many cost impositions upon a common resource network if the whole receiving network belonged to a single landowner. That a floodplain development burdens numerous downstream users is no reason to discount its full effect. Courts should regard regulations as legislative declarations that interests equivalent to those of adjacent landowners inhere to the public.[155] To ignore the extended effects of each use is to ignore the factual reality upon which regulatory policy is based. In practice, of course, the courts have looked beyond direct causation in reviewing regulations.[156] Contemporary developments in public nuisance doctrines and the public trust *jus publicum* further extend the inquiry as they broaden the scope of rights that state action can defend.

The arguments against recognition of the distant effects of property uses in common law litigation do not prevent the extended consideration of costs in the regulatory setting.[157] Since legislatures take actions to protect the public at large throughout a chain of causation, costs should be judicially cognizable anywhere within the legislatively protected sphere. No measurement of specific threats to specific individuals should be necessary.

Once courts identify the public costs of unrestricted uses, they face the challenging task of quantifying them. Since many losses are prospective hazards of varying intensities, which threaten differing personal and property damage, courts face an even more difficult task. In the floodplain cases, public cost quantification requires estimates of

use are disseminated across property, state, and even national boundaries." Sax, *supra* note 38, at 155. A strip mine, for instance, has land and water quality effects upon fishing, residential, and recreational users downslope, downstream, and several hundred miles away that normally could never be litigated under common law theories. A wetlands fill increases the cumulative depletion of natural shoreline protection and spawning areas, affecting shoreline residents, commercial and sport fishermen, nature lovers, and urban citizens who must pay more for their seafood dinners, not to mention the absolute loss of natural values.

155. The United States Supreme Court has stated that "the fact that particular environmental interests are shared by the many rather than the few does not make them less deserving of legal protection through the judicial process." Sierra Club v. Morton, 405 U.S. 727, 734 (1972).

156. Some of the most famous Supreme Court takings decisions, for example, have inquired into the indirect consequences of restricted uses, despite the fact that such effects were not sufficiently proximate to ground common law abatement actions. *See, e.g.*, Village of Euclid v. Ambler Realty Co., 272 U.S. 365, 394 (1926).

157. For example, even if the fear of causing a multiplicity of suits was a good reason to deny otherwise actionable claims, this should be irrelevant in the case of regulations. The conjecture and difficulty of proving that specific injuries to specific victims were caused by other specific land users are similarly subsumed in the broad coverage of a regulation.

local threats to the lives, health, and property of land owners, and it further necessitates measurements of potential losses throughout the entire watershed that must be attributed pro rata to each owner. These are precisely the difficulties that stalemate current common law remedies and other techniques for internalizing flood costs. Quantification of public costs in terms of dollars is simply impossible in many regulatory cases, and the complexity of the analysis and the requirement of individual assessments negate the utility of that approach.

Courts should not ignore network-wide costs simply because precision is impossible. They should establish dollar quantities for public costs, but if this proves impossible they must conceptualize and approximate those costs in terms that allow judgments based on proportionality and excessiveness.[158] This necessarily entails judicial notice of the nature and degree of possible losses to all potentially affected interests throughout the resource network as well as the cumulative nature of the imposed harm.[159]

*2. Balancing: The Burden Shifts.*—As in other areas involving difficult factual issues, judges can turn from substance to procedure for the answer to their dilemma. Since they customarily presume that legislative enactments are valid, the burden of pleading and proof of public costs and private losses must fall on the party attacking the regulations. Under the traditional diminution test, the plaintiffs need only prove individual loss in some form or other. Once a plaintiff pleaded and proved a large percentage loss or a minimal residual use the burden shifted to the government to disprove the loss figures, to avoid the issue on other grounds, or to raise countervailing constitutional arguments. The diminution-balancing test would immediately require plaintiffs to prove not only their own losses, but also that these are not outweighed by the public costs potentially attributable to the prohibited uses, because both elements would be necessary to make out a prima facie case of regulatory unreasonableness.[160] That result is in-

158. *See* Turner v. County of Del Norte, 24 Cal. App. 3d 311, 101 Cal. Rptr. 93 (1972); Turnpike Realty Co. v. Town of Dedham, — Mass. —, 284 N.E.2d 891, 899-900 (1972), *cert. denied*, 409 U.S. 1108 (1973). The nature of costs to life, property, ecological balances, environmental values, and aesthetics will vary the terms of the judicial inquiry according to somewhat subjective differentials in evaluation.

159. The fact that each separate imposition adds only insignificantly to the total cost should not be reason to avoid attributing some of the cumulative effect to each. One backyard bonfire may injure no one in and of itself, yet many nuisance injunctions and local ordinances prohibit any smoke source because of the cumulative air polluting effect that many would produce. *See* E. ROBERTS, LAND USE PLANNING 1-29 (1971).

160. A prima facie case requires proof of the basic elements of regulatory invalid-

escapable if the strong presumption of validity for police power regulations protecting the public is not abandoned.[161]

### C. *The Second Stage Inquiry*

The minimum proposition incorporated in the first stage of diminution-balancing review will dispose of regulatory takings questions involving grave hazards and large public losses. The first stage inquiry is only a minimum review, and the converse proposition that any regulation imposing more costs than it prevents is ipso facto invalid does not hold. The takings cases over the years demonstrate that excessiveness of individual loss is not measured solely in terms of countervailing public harms. In the Supreme Court's first exposure to zoning, it enunciated the principle that safe and inoffensive uses may have to yield so that dangerous and offensive uses can be eliminated. The Court felt that "[t]he inclusion of a reasonable margin to insure effective enforcement will not put upon a law, otherwise valid, the stamp of invalidity."[162] Thus even considerations of governmental efficiency may justify net private losses. Other situations in which net losses may be constitutionally valid include restrictions on the food and drug industries,[163] under criminal laws,[164] and when property owners

ity. Especially in light of the presumption of validity, plaintiffs in floodplain cases would have to prove at least that the elements of minimum basic validity are not satisfied. Government counsel, of course, will have the tactical role of showing that plaintiff's proof of net loss is not based upon sufficiently broad or detailed public cost inquiries. *Cf.* J. WIGMORE, A STUDENT'S TEXTBOOK OF THE LAW OF EVIDENCE 439 (1935).

161. The Supreme Court's actions in recent zoning cases show that the presumption of validity for land use legislation is, at least at the summit of our federal court system, nearly irrebuttable. Certiorari was denied in *Turnpike Realty* (409 U.S. 1108 (1973)) and appeal was dismissed in *Consolidated Rock Products* (371 U.S. 36 (1962)). In both cases the plaintiffs' takings claims seemed to deserve at least a look. At the state level the presumption of validity is getting stronger even in zoning cases, as demonstrated by departure from strict interpretation of zoning ordinances in favor of more liberal construction. *E.g.*, Exton Quarries Inc. v. Zoning Board of Adjustment, 425 Pa. 443, 449-50, 228 A.2d 169, 173-74 (1967).

162. Village of Euclid v. Ambler Realty Co., 272 U.S. 365, 388-89 (1926). In that situation, the court apparently felt that there remained a satisfactory residuum.

163. The food industry apparently has a special quasi-public nature. No takings claims arose out of the sudden F.D.A. ban on cyclamates, for instance, although the industry claimed that there was absolutely no proof that cyclamates caused injury to *humans*. *Cf.* Fallows, *Picking up the TAB*, THE WASHINGTON MONTHLY, Nov. 1972, at 20, 22. Such special vulnerability for quasi-public industries is mentioned in Tyson & Brother v. Banton, 273 U.S. 418 (1927).

164. *See* Mugler v. Kansas, 123 U.S. 623 (1887). No takings complaints are heard from marijuana stockpilers whose hoards are seized, even though it may not be as hazardous to health as alcohol.

have notice of impending government control.[165]

By far the greatest body of precedent for uncompensated net losses lies in the zoning cases. The diminution theory they evolved allows the possibility that courts will uphold regulations regardless of whether public costs are greater than individual burdens. Application of like principles to the second stage inquiry therefore should be relatively uncontroversial. If a landowner sustains losses in excess of public costs and retains a sufficient residuum, he may still fail in his attack on governmental regulations. For example, if a plaintiff has holdings contiguous to the parcel upon which there is an excess of private loss over public cost, a court in the second stage inquiry may discount the measure of his loss by the profitability of the adjacent property and sustain the regulation so long as there is an overall profitable residuum.[166] The principles applicable in the second stage inquiry continue to incorporate subjective elements, but the first stage inquiry should eliminate the major element of current unbridled subjectivity by taking explicit account of public interest factors. Supporters of the old diminution formula might assert that the traditional diminution principles incorporated a balance of public costs in their workings, and thus their application to net losses puts the property owner in double jeopardy. This is hardly realistic. If a court upholds a regulation in the second stage inquiry because of a residual profitable use, the plaintiff theoretically would have had the same residual use under the old less explicit tests. If his net loss is not excessive when measured with his adjacent unregulated holdings, then the court has only forced him to face the real externalized costs that judicial semantics had previously allowed him to ignore.[167]

### *D. Conclusion*

The reworked diminution-balancing test does not pretend to eliminate subjectivity from constitutional review of environmental regula-

165. *See* United States v. 531 Acres of Land, 366 F.2d 915 (4th Cir. 1966), *cert. denied*, 385 U.S. 1025 (1967). *Cf.* Sax, *supra* note 38, at 180-81. In tort law the discovery of new methods of detection that reveal long-standing unsuspected imposition upon others leads to liability with no taking complaints. *See* Renken v. Harvey Aluminum, Inc., 226 F. Supp. 169 (D. Ore. 1963).

166. If the comprehensive balancing of the whole locus is relevant to the validity of regulations preserving wetlands, it should be all the more applicable to floodplains where direct hazards to humans are involved. *See* Commissioner of Natural Resources v. S. Volpe & Co., 349 Mass. 104, 111-12, 206 N.E.2d 666, 671-72 (1965).

167. The property owner could conceivably have been forced to bear such costs under tort law, compensation for government services, or compulsory insurance schemes.

tions. Subjective judgments will continue to appear in the balancing process at both stages of constitutional inquiry implicit in the test. But judgmental flexibility must inevitably remain in any test that is not based upon absolutes, and constitutional reasonableness and fairness cannot be defined in absolutes. The diminution-balancing approach, however, can usefully inform and guide judicial discretion. In order to rule explicitly on whether private harms outweigh public costs in the first stage, the courts must base their constitutional examination upon a network-wide analysis of costs and benefits. Since undue subjectivity at this stage will be embarrassingly apparent, courts should be hesitant to decide first and to provide rationalizations later. Having balanced public and private interests in the first stage, the courts can feel less hesitant in reviewing private loss according to the orthodox residuum diminution method of the second stage. The net result should be a realistic test that recognizes public losses but incorporates traditional notions of fairness to private individuals.

## V. Epilogue—Floodplains and Diminution-Balancing

The constitutional clarifications suggested here offer strong support for floodplain regulations and analogous police power restrictions; in most situations floodplain measures will fit the fundamental requirements for regulatory validity. Successful regulations, of course, require solid technical foundations. Base data must have support in competent hydrological studies, accurately represented on floodplain maps. The legislature must choose a form of legislation that fits both floodplain management requirements and the administrative capabilities of the governing unit. Especially at the state level this task may require extensive adjustment and coordination of procedures between different agencies in the regulatory process. Schedules of uses automatically permitted or prohibited can minimize administrative work, but they must be flexible enough to fit the varying characteristics of regulated locations. In general, a list of automatically permitted uses should include as many low intensity uses as possible, and automatically prohibited uses should be those possessing the highest potential for on-site or off-site flood damages.

The permit procedures for all other uses not specifically permitted or proscribed, however, are far more basic to the effectiveness

The diminution principles cannot apply solely to losses below the public cost level, since those principles do not attempt to incorporate public costs.

of floodplain regulations. If the permit process successfully identifies and weighs all cost externalizing factors in development proposals, it can tailor the grant of permits to fit the full requirements of a national floodplain management policy. For example, a local board could review site plans, local floodflow characteristics, displacement and obstruction effects, and damage potentials on- and off-site, according to a detailed list of permit criteria. With this guide it could adjust the design and use intensity of proposed development to maximize net benefits to public interests while minimizing costs.[168] In some situations, of course, it might find that a regulation permitted no feasible market use; in others a board might encourage innovative attempts to adapt human uses to the river environment. In all cases the permit process would prevent discounting the latent costs of floodplain development.

An adequately designed permit procedure will sharply reduce the number of variance proceedings that currently undercut many zone ordinances. Traditionally, legislatures designed variances to prevent courts from voiding otherwise reasonable regulations in situations imposing constitutionally excessive hardships on individuals. While in theory the criteria for granting variances were often strict, in practice they became exercises for instant amendment of zone ordinances where political, economic and other pressures came to bear on the regulating authority.[169] If a floodplain regulatory board has carefully evaluated the potential costs arising from proposed development before denying an application, it will have undertaken the same constitutional balancing process that would be incorporated in any subsequent constitutional challenge to regulatory validity, including requests for variances. Only in extraordinary cases should variance proceedings produce a different result from permit application proceedings. Recognizing the constitutional character of the variance request, counsel and judges administering regulations should be in a better position to prevent dilution of the floodplain management policy.

Nonconforming use provisions are standard in most existing floodplain regulations, undoubtedly due to the direct influence of zoning

168. The *Vartelas* appellate court apparently tried to encourage attempts at innovative modifications like stilting. Vartelas v. Water Resources Comm'n, 146 Conn. 650, 657-58, 153 A.2d 822, 825 (1959). On the subject of sound evidence and careful drafting, see F. BOSSELMAN, D. CALLIES, & J. BANTA, *supra* note 83, at 284-301.

169. *Cf.* Dooley v. Town Plan & Zoning Comm'n, 151 Conn. 304, 313-14, 197 A.2d 770, 774 (1964) (court argues against profligate grants of variances).

law and perhaps to a political judgment that future development is a more important target for initial attempts at regulation than existing development. Zoning law amortization principles, however, should certainly apply to the floodplain situation in light of the real dangers posed by existing structures in floodplains. Moreover, if hydrological evidence proves that some existing encroachments directly threaten property, the legislature could declare those uses public nuisances subject to abatement under terms of enacted regulations. Finally, when property owners challenge regulations as invalid takings, the most recent floodplain cases lend hope that the courts will apply the diminution-balancing standard, which will support the validity of most floodplain regulations. *Turnpike Realty* and *County of Del Norte* demonstrate that in this time of heightened awareness of flood disasters, judges are ready and able to consider the potential harms attributable to floodplain development; it remains for counsel to demonstrate the constitutional role of that evidence. By identifying the range of potential harms as costs imposed upon the public, judges can weigh allegations of private loss in more rational perspective.

The public dangers attributable to floodplain development are as easy to conceptualize as they are hard to specify in dollar terms. Dollar quantifications of the public interest, however, are extremely rare in the case law, even if a court makes a public-private balancing, indicating that courts evaluate public interest in more subjective terms. A well-prepared defense of a floodplain regulation against a plaintiff's allegations of disproportionate private loss thus must present hydrologic and economic rebuttal evidence of potential private and public costs on and off the development site. If counsel can establish the likelihood of those potential effects, he has laid the basis for a constitutional balance.

A variety of elements in the floodplain situation indicate that the balance will typically favor the validity of floodplain regulations. One is the nature of the opposing interests. While private regulatory loss is almost exclusively financial, floodplain regulations protect human lives, health, and property. Public harms are likely to predominate in amount as well, especially since the portions of the plaintiff's own investment that may suffer flood damage are a legitimate part of the public concern. Given the strong presumption of regulatory validity and the concomitant burden upon parties attacking regulations, courts will ordinarily have no difficulty upholding regulations of demonstrable flood hazards. When the challenge is not settled by an initial com-

parison of costs, courts will have to proceed to the second stage of takings review and analyze whether net losses are unconstitutionally excessive. If a profitable land use remains to the owner, courts should have no trouble upholding regulations. Likewise, judicial weighing of net loss in the light of all the plaintiff's contiguous holdings will often be an available support for floodplain restrictions.

Once the courts look beyond individual loss, the confluence of public welfare, environmental values, and concern for future generations strongly favor the survival of floodplain regulations, and the constitutional test there applied offers improvement in judicial review of environmental regulations generally.