FLOODPLAIN REGULATIONS

AND

THE COURTS

1970-1981

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PREFACE

How have floodplain regulations fared in the courts in the last decade (1970-1980)? What legal issues have been raised? In 1970 approximately 400 communities had adopted floodplain zoning, subdivision control, or building code regulations. Twenty states had adopted statutes controlling floodplain or floodway uses through various permit procedures and subdivision review acts. Cases addressing these regulations (approximately 30 appellate decisions) were analyzed by the author in 1970. This analysis was published in Volumes 1 and 2, Regulation of Flood Hazard Areas to Reduce Flood Losses, prepared by the University of Wisconsin and the U.S. Water Resources Council and its member agencies and published by the U.S. Government Printing Office in 1970 and 1971.

The present report was designed to update the 1970 survey. It reviews judicial responses to floodplain regulations adopted by almost 17,000 communities and many states in the ensuing decade--1970 to 1980. As an update, it does not repeat much of the material contained in Volumes 1 and 2 but instead highlights judicial approaches and clarifications which occurred in the last decade.

This report begins with a review of conclusions from Volumes 1 and 2 on judicial response to floodplain regulations. The general types of regulations litigated in the 1970s are next to be examined. Judicial response to specific issues is then considered in greater depth. The report concludes with recommendations for avoiding legal problems.

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FLOODPLAIN REGULATIONS AND THE COURTS

Introduction

Between 1970 and 1980, judicial support for floodplain regulations was overwhelming. State supreme or appellate courts issued at least 55 reported decisions on floodplain regulations and 25 on wetland regulations. Federal courts addressed flood insurance issues in at least 25 decisions and Section 404 permit issues at least 20 times. The goals and techniques of floodplain regulation (outlined in Table 1) were unanimously endorsed. Problems, where they arose, concerned procedural matters and lack of data in evaluating permits. Courts held denial of a specific permit invalid in only seven cases, and those took place early in the decade. Even in these cases, the courts supported the general validity of regulations. In six of these there was either lack of evidence of flooding or a failure to show that the proposed use would have adverse individual or cumulative effects on flooding.[1]

Floodplain regulations raise constitutional issues similar to those involved in broader land use regulatory efforts. In determining the constitutional validity of regulations, courts look first at the general validity of the regulations and then at their specific validity as applied to a particular landowner. They first decide whether the unit of government or agency adopting the regulation was authorized to do so by an act of Congress or a state statute, and whether statutory procedures were followed. Having found sufficient statutory powers and compliance with statutory procedures, they then decide whether the regulations (1) serve valid police power objectives, (2) have a reasonable tendency to achieve or aid in the achievement of those objectives, (3) afford equal treatment to similarly situated landowners, and (4) permit reasonable private use of land so that a "taking" of private property does not occur.

During the last decade, most lawsuits contesting floodplain regulations did not challenge the general validity of restrictions (adequacy of basic power and compliance with statutory procedures), but rather contested the constitutionality of regulations as applied to a particular property in the context of these four basic tests. This "pinpoint" approach to the determination of constitutionality derives in part from two U.S. Supreme Court decisions issued in the 1920s. In _Village of Euclid v. Ambler Realty Co._[2] the Court upheld the basic concept of zoning--the division of a community into various districts and the application of different land use standards to each of the districts. Two years later, in _Nectow v. City of Cambridge_[3] the Court again endorsed the general concept of zoning, but held that the regulations at issue were invalid as applied to particular lands. In this case, the Court faced a difficult dilemma. To have struck down the ordinance as a whole would have left the community without zoning and would have invalidated the regulations even where they made sense. Taking a compromise position, the Court held that zoning regulations could be valid in general but invalid as applied to particular property.

This approach has been followed by courts across the nation in floodplain and other cases. When arguing their claims, landowners may concede the general validity of a floodplain, wetland, or other regulation but argue that it is irrational, arbitrary, or capricious as applied to their land or that it "takes" their property without "just compensation". A court may find that the regulation is in fact unconstitu-

TABLE 1

REGULATORY GOALS AND TECHNIQUES

Goal	Regulatory Technique
1. Prevent land uses which will increase flood heights or velocities, resulting in flood damage.	1. State and local regulations requiring permits for dams, levees, channel straightening, structures, or fill in floodway areas
	2. Zoning, subdivision and encroachment regulations preventing obstruction of floodways
	3. Zoning ordinances controlling the types and densities of uses in flood storage areas
	4. Subdivision or drainage regulations controlling drainage design
	5. Soil conservation regulations requiring land treatment (soil and water conservation practices)
2. Prevent land uses which will cause other nuisances.	1. Zoning, building codes, and other regulations controlling hazardous uses of the floodplain such as chemical treatment plants, oil and gas storage facilities, and nuclear power plants which may cause fires or other hazards during floods
	2. Zoning and other regulations restricting storage of materials, placement of mobile homes, construction of wooden residences or other uses involving material that may be carried by flood waters onto other lands thereby increasing the force of flood waters and causing debris problems
	3. Zoning and other ordinances regulating uses with water pollution potential such as sewage treatment plants, chemical plants, and solid-waste disposal sites

TABLE 1 (continued)

Goal	Regulatory Technique
3. Prevent victimization and fraud	1. State and federal interstate land sale acts requiring that an accurate descriptive statement of the land be filed with appropriate regulatory agencies and prospective buyers
	2. Zoning, building codes, state permits and subdivision review acts requiring that lands be physically suitable for intended uses
4. Reduce the costs of community services	1. State and local capital improvement plans that restrict sewers, water lines, roads or other public facilities in flood hazard areas or require floodproofing of them
	2. Zoning regulations requiring that utility connections to private structures be elevated to the flood level or protected in some other manner
	3. Subdivision regulations requiring that developers install floodproofed facilities in new subdivisions
5. Promote most suitable use of land throughout a community, region or state	1. Community-wide planning and zoning regulations based on land suitability guiding development away from sensitive areas
	2. State or local regulations protecting prime agricultural lands, mineral resources and coastal areas
	3. State statutes and local ordinances requiring environmental impact statements for development or subdivisions

tional as applied to particular property, but this will not stand as a determination of the constitutionality of the regulation as applied to other lands. A pinpoint approach favors general judicial acceptance of floodplain regulations; however, it has led to a fair amount of litigation.

General Judicial Responses

In 1969 and 1970 when Volumes 1 and 2 of Regulation of Flood Hazard Areas To Reduce Flood Losses were prepared, a considerable number of floodplain cases and more than 12,000 land use control cases had already been decided.[4] From these it was possible to identify general trends in judicial decisions and to suggest how courts would likely treat floodplain issues that had not yet been resolved. Even so, many issues needed clarification and the issue of "taking" had not yet been widely litigated, particularly for open space flood fringe regulations. How well has the legal analysis of Volumes 1 and 2 fared? What clarifications have been provided or new directions developed in the past decade?

During the 1970s courts responded to the following general legal requirements for floodplain and resource protection regulations.

(1) The agency or local government adopting regulations must be authorized to do so by an enabling statute or home rule powers. Inadequately authorized regulations fail to meet due process requirements; they are considered ultra vires and invalid by the courts. Volumes 1 and 2 concluded that statutes authorizing local zoning, subdivision controls, building and other codes were sufficient to authorize floodplain zoning, subdivision control, or other regulations in virtually all states.[5]

In the 1970s no court invalidated regulations for lack of enabling authority. In fact, several cases commented upon the sufficiency of general enabling statutes, and several upheld the power of special districts to adopt regulations.* In addition, some courts held that local units had a duty to adopt floodplain regulations or consider flooding when required to do so by a particular statute: those courts directed compliance with the statutes.

(2) Statutory procedures for adoption and amendment of regulations must be carefully followed, otherwise regulations violate due process requirements and are ultra vires. Volumes 1 and 2 concluded that prior comprehensive planning was not required for most floodplain regulations but that other procedural requirements must be followed.[6]

This general requirement was adhered to in the 1970s. One court held that an informally adopted floodplain "resolution" did not regulate because the local government had not followed procedures required for a formal ordinance. Several cases held the denial or approval of a special exception permit invalid because statutory procedures had not been followed. A Minnesota court, however, upheld adoption of an ordinance in an emergency without statutory notice and hearing because of the extraordinary conditions involved (flood waters were rising and the community needed to qualify for flood insurance).

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* These and other cases will be cited in the more detailed discussion to follow.

(3) State land use regulations must not, in general, pertain to matters of exclusively local concern, otherwise state regulations may contravene local home rule statutes or constitutional provisions adopted in at least 35 states.[7] Volumes 1 and 2 concluded that state or state-supervised floodplain regulations do not violate home rule powers because flooding is a multijurisdictional issue and of more than local concern.[8]

In the 1970s no court invalidated state regulations as violating local home rule powers. Courts in at least three cases specifically upheld regulations against claims that state regulations violated home rule provisions, concluding that flooding is a matter of greater than local concern. In addition, courts in at least six cases have upheld state coastal zone, wild and scenic river, and similar resource regulations against home rule arguments with no adverse decisions for such resource-based state regulations.

(4) Regulations must serve legitimate police power objectives. Regulations that fail to do so violate due process requirements. Volumes 1 and 2 concluded that regulations designed to prevent landowners from increasing flood damages on other lands, threatening public safety, or causing victimization were clearly designed to serve valid objectives.[9] The reduction of losses to the landowners themselves (which indirectly affect society) and the reduction of the need for flood control works at public expense were also considered valid objectives, although few cases had yet been decided on these points.[10]

Cases in the 1970s provided strong support for protection of public safety, and prevention of nuisances and victimization. Courts in some cases endorsed not only these traditional objectives but also regulations adopted to protect owners from flooding, protect flood storage, qualify a community for flood insurance, reduce flood losses, protect floodways until public purchase was possible, and reduce the cost of public services. No floodplain case invalidated regulations for failing to promote valid objectives; a number of cases specifically endorsed broad objectives.

Based on case law at that time, Volumes 1 and 2 gave guarded support to floodplain regulations adopted to serve wetland protection objectives.[11] This underestimated judicial response: cases in the 1970s gave overwhelming legal support for wetland and other environmental regulations. Floodplain regulations may now be adopted, with some confidence, to achieve not only hazard reduction but also wetland protection, dune protection, coastal zone management, and erosion control.

(5) Regulations must be reasonable; that is, the regulatory standards and procedures must have some tendency to accomplish the regulatory goals such as reduction in flood losses. If regulations are not reasonable, they violate due process requirements. Volumes 1 and 2 concluded that, in order to avoid due process problems, regulations must be based on sound flood data;[12] the degree of restriction must be reasonably related to the actual threat of flooding;[13] and the restrictions must have some real tendency to reduce flood problems.[14]

Courts in the 1970s examined the factual base for regulations more carefully than in the preceding decade. Cases suggest that maps must be reasonably accurate but need not be at very large scale, particularly where procedures are available for refining data as individual permits

are considered. Under most enabling authorities, regulatory agencies may consider the cumulative impacts of development in carrying out flood studies and determining floodway limits. Courts in five states specifically endorsed the determination of flood heights or floodway boundaries or the evaluation of development impacts that take into account cumulative impact of projected floodplain or watershed development. Regulations requiring protection to the 100-year flood level were specifically endorsed in several cases. However, courts in several other cases held the denial of a particular permit invalid in specific circumstances due to lack of sufficient evidence of flooding or erosion.

(6) Standards for agency action must not be vague or indefinite, otherwise regulations violate due process requirements. Volumes 1 and 2 concluded that broad hazard reduction standards were sufficient for issuance of special permits and variances by local zoning boards, planning boards, and state and federal agencies.[15]

In the 1970s courts sustained broad statutory and ordinance standards for issuance of special permits and variances when they were challenged. However, as noted above, some courts have found an insufficient factual basis (of erosion or flooding, for example) to deny or justify issuance of permits.

(7) Regulations must not discriminate between similarly situated landowners, otherwise regulations violate 14th Amendment due process requirements. Volumes 1 and 2 suggested that floodway regulations might need to provide equal conveyance of floodwaters along both sides of a stream to avoid due process problems and that similarly situated landowners may be required to elevate to similar elevations.[16] However, Volumes 1 and 2 concluded that new uses could validly be treated differently from existing uses.[17]

In only a few floodplain cases were discrimination questions specifically considered. None invalidated regulations on this ground, although some suggested that regulations would be held invalid if found to be discriminatory. Courts strongly endorsed equal degree of encroachment and cumulative impact standards in floodway restrictions and quite often focused on equity considerations in deciding whether regulations were a taking of private property.

(8) Regulations must not "take" private property without payment of just compensation, otherwise regulations violate 14th Amendment and 5th Amendment requirements of due process and prohibitions against taking. Volumes 1 and 2 concluded that floodway and coastal high hazard area restrictions, subdivision regulations to prevent victimization, and elevation requirements for outer flood fringe areas do not take property, even where such restrictions severely affect private landowners.[18] However, based upon cases up to that time, Volumes 1 and 2 warned that very strict regulation of outer fringe areas and "wetland restrictions" might be held a taking.[19]

With few exceptions, in the 1970s courts upheld floodplain regulations against taking challenges. Restrictions upheld included highly restrictive regulations for outer areas as well as for floodway and coastal high hazard zones.

(9) Units of government may not, under most circumstances, increase flooding or flood damages to private lands. Volumes 1 and 2 concluded that units of government ordinarily are not responsible for flood damages resulting from natural causes nor are they required to adopt regulations, provide insurance, undertake flood control works, or provide utilities.[20] However, under certain circumstances, government bodies may be responsible for increased flood damage on private lands under theories such as taking, nuisance, and trespass when the governmental unit constructs, operates or maintains flood control works, roads, or other public structures or facilities.

Despite a growing trend during the 1970s to hold governments responsible for positive actions resulting in increased flood losses, governments were not held responsible for failing to provide flood insurance, disaster assistance, flood control works, or floodplain regulations. Several federal court decisions refused to hold the Federal Insurance Administration liable for failure to broadly advertise the National Flood Insurance Program (NFIP). The courts held that the program had been adequately advertised. A relatively large number of decisions have addressed NFIP responsibility for payment of local insurance claims. Most of these involved interpretation of the flood insurance statutes.

A court held that individual members of a city council were not responsible for adopting floodplain regulations. Similarly, courts denied liability for operation of dams when damage resulted from an extremely severe flood. However, some courts have found local governments liable for operation and maintenance of inadequate drainage facilities, including those constructed by a subdivider and dedicated to the city.

In conclusion, the cases within the last decade have been, with minor exceptions, consistent with the legal analyses and conclusions of Volumes 1 and 2. Some points have been clarified. Most important, judicial support for floodplain and other resource management programs has been even stronger than expected.

Cases From The 1970s

What sorts of floodplain regulations have been litigated in the 1970s? Have the standards of the National Flood Insurance Program (NFIP)--which have become minimum standards for more than 17,000 communities--been widely contested?

The NFIP standards that require protection of floodway areas (where floodway maps are available) so that development will not increase flood heights more than one foot, and those that require elevation of structures in coastal and riverine flood areas to the 100-year flood elevation have not been widely litigated. Apparently, landowners or their attorneys have considered the chances of successful litigation remote. Instead, many of the 55 cases brought in the last decade have addressed regulations more restrictive than those required by the NFIP. As noted earlier, all but six decisions sustained the regulations and even these endorsed the concept, disagreeing only with the denial of a particular permit. In light of this overwhelming support, future disapproval of minimum NFIP standards is unlikely.

Floodway Regulations

Many states and localities have adopted restrictions for floodway areas that equal or exceed NFIP standards, which permit a one-foot increase in the height of the 100-year flood. Floodways as well as floodplains are calculated according to existing watershed conditions. Floodway restrictions, including some more restrictive than those of the NFIP, have been contested in several cases.

In Krahl v. Nine Mile Creek Watershed District,[21] the Minnesota Supreme Court sustained a watershed district's floodway regulations that were intended to preserve flood storage and conveyance. The regulations required that encroachments in the floodplain not exceed 20% of the total floodplain area.

In Young Plumbing and Heating Co. v. Iowa Natural Resources Council,[22] the Iowa Supreme Court sustained state regulations which required removal of a structure in a 200-foot-wide floodway where an individual structure and fill would have increased flood heights about .3 foot with a 1.7-foot calculated increase, assuming equal degrees of encroachment.

In Subaru of New England, Inc. v. Board of Appeals,[23] the Massachusetts Appeals Court sustained floodplain and floodway regulations designed to protect flood storage in the town of Canton where there was evidence that, although the particular development would have increased flood heights only 1/4 inch, potential cumulative impact might have been significant.

In Foreman v. State Department of Natural Resources,[24] the Indiana Court of Appeals sustained restrictive floodway regulations. Calculated flood heights took into account future watershed conditions.

In Maple Leaf Investors, Inc. v. State Department of Ecology,[25] the Washington Supreme Court upheld denial of a state permit for proposed houses in the floodway of the Cedar River pursuant to state regulations that prohibited habitable structures in floodway areas.

In Usdin v. State Department of Environmental Protection,[26] a New Jersey Superior Court upheld state restrictions prohibiting construction within a floodway area.

Control of Both Floodway and Fringe Areas

Courts upheld floodplain regulations exceeding NFIP standards by prohibiting or virtually prohibiting development in entire floodplains in several instances.

The Massachusetts Supreme Court in Turnpike Realty Co. v. Town of Dedham[27] sustained Dedham's floodplain regulations which restricted repeatedly flooded areas to open space uses such as "woodland, grassland, wetland, agricultural, horticultural, or recreational use." However, landowners could apply for special exception permits. The landowner argued that the regulations were a taking of private property since there was testimony that the land was worth $431,000 before regulations and $35,000 after regulations. The court disagreed.

In Dur-Bar Realty Co. v. City of Utica,[28] a New York court sustained highly restrictive regulations for a Utica floodplain conservancy area. The regulations limited uses to farming and agriculture, parks, golf

courses, athletic fields, essential services, disposal facilities, landfill operations, and marinas.

In S. Kemble Fisher Realty Trust v. Board of Appeals,[29] a Massachusetts court upheld regulations that limited property to open space conservancy uses.

Similarly, in Turner v. County of Del Norte,[30] a California court upheld regulations that prevented permanent dwellings in a severely flooded area. Open space uses and seasonal camping were permitted.

Dune and Beach Regulations

Several cases addressed the validity of highly restrictive dune and beach setback regulations. In Spiegle v. Borough of Beach Haven,[31] the Superior Court of New Jersey sustained a beach setback line for an area subject to severe storm damage and held that the line did not constitute a taking as applied to most properties. A lower New York court in Lemp v. Town Board[32] held that dune regulations were invalid (although not a taking) as applied to a property in an area for which a permit had been issued and a later attempt made to revoke it.

Interim Regulations

Courts sustained interim floodplain regulations in several cases. In Cappture Realty Corp. v. Board of Adjustment,[33] the New Jersey Superior Court upheld highly restrictive regulations until flood problems could be more thoroughly assessed. In Lindquist v. Omaha Realty, Inc.,[34] the South Dakota Supreme Court sustained restrictive regulations which prevented rebuilding in a devastated area of Rapid City after the disastrous 1972 flood.

Wetland Regulations

Both federal and state courts were asked to address a variety of wetland regulations controlling fill or dredging in wetlands. Federal courts, in a long line of decisions beginning with Zabel v. Tabb,[35] upheld denial of Federal Section 10 and Section 404 permits for development in coastal wetlands. Several cases involved denials of permits for dredging and filling in Florida mangroves,[36] which play important hazard reduction roles. Several decisions also addressed Federal 404 permit requirements for inland waters. One decision required Section 404 permits for agricultural activities in bottomland hardwoods along the Mississippi.[37] Flood storage was noted as a reason for protecting these areas. Other decisions held that permits are also required for development in wetlands along inland lakes.[38]

Many state decisions also addressed wetland regulations. Most sustained restrictive regulations, particularly in the late 1970s. For example, a Maryland court in Potomac Sand and Gravel Co. v. Governor of Maryland[39] sustained the denial of a permit for dredging coastal wetlands in Charles County. The Rhode Island Supreme Court in J. M. Mills, Inc. v. Murphy[40] sustained wetland regulations for areas defined to include the 50-year floodplain. The Wisconsin Supreme Court in Just v. Marinette County,[41] the most famous of the wetland decisions, strongly supported state-supervised shoreland zoning regulations adopted by Marinette County. These regulations placed lakeshore wetlands in conservancy districts. The New Hampshire Supreme Court in Sibson v. State[42]

upheld tight coastal wetland regulations, citing the Just case. In Graham v. Estuary Properties, Inc.,[43] the Florida Supreme Court upheld county refusal of a permit that would have resulted in the filling of 1,800 acres of red mangroves on Marco Island.

Special Permits

More than a dozen decisions focused on the adequacy of standards for issuance of special permits or the adequacy of the factual basis for issuance or denial of special exceptions, variances, or other special permits. Courts universally upheld the regulatory standards as providing sufficient guidance to regulatory boards. For example, in Dur-Bar Realty Co.,[44] a New York court upheld an ordinance which directed the board of adjustment to consider the impacts of the proposed uses on flood heights.

However, in several decisions courts found that local permitting boards lacked sufficient data to justify granting or denying specific permits. For example, in Pope v. City of Atlanta[45] the Georgia Supreme Court strongly endorsed a river protection act, including the standards for evaluating permits, but held that denial of a permit for a tennis court based on an argument of cumulative impact on runoff lacked factual support. On the other hand, courts in several jurisdictions found that permits had been invalidly granted because flood problems had not been adequately considered.[46]

Subdivision Regulations and Stormwater Drainage

Several courts upheld flood and drainage standards in subdivision ordinances. In Brown v. City of Joliet,[47] the Illinois Appellate Court held that refusal to approve a plat was justified where a subdivider failed to include adequate plans for drainage and there was evidence that without such provision the subdivision not only would have increased drainage problems in surrounding areas but also would have been subject to them itself. The court noted that "the storm water problem which would be created in this case would be uniquely attributable to plaintiff's subdividing and development."[48]

In Hamlin v. Matarazzo,[49] the Superior Court of New Jersey held that in giving tentative approval to a subdivision for 43 homes on a 28-acre tract of undeveloped farmland, a planning board had improperly failed to consider effects of drainage and flooding. Drainage from the tract flowed onto plaintiff's land. A professional engineer testified that construction of the 43 homes would reduce stormwater absorption by 60% to 70%, substantially increasing erosion.

In Metropolitan St. Louis Sewer District v. Zykan,[50] the Missouri Supreme Court upheld sewer district regulations requiring construction of drainage facilities in subdivisions and ordered both construction of the facilities and payment of damages for failure to install facilities agreed to by the subdivider.

However, in Kessler v. Town of Shelter Island Planning Board,[51] a New York court held that refusal to approve a subdivision subject to flooding was invalid because the subdivider was willing to fill the area to protect against flooding as required by the planning board, and because the planning board's ulterior goal was to preserve the entire area for recreational use. However, the court conceded that the subdivider might be required either to provide recreation areas on the site or to pay the town for park purposes.

Regulations in Anticipation of Acquisition

Floodplain regulations were quite often adopted for areas that were later to be publicly acquired for flood control, parks, or other public purposes. Courts sustained such regulations where the principal objective was to prevent flood damages, not to reduce property values.[52]

Judicial Response to Specific Challenges

A variety of specific legal challenges were posed to floodplain regulations in the cases discussed above.

Adequacy of Enabling Authority

In a few cases, landowners challenged the basic power of a local government to adopt floodplain regulations. Despite adoption of regulations by 17,000 communities between 1969 and 1980, no court invalidated regulations on the grounds of inadequate basic enabling authority: courts found sufficient powers in all cases where the issue was raised. For example, in Turnpike Realty,[53] the Massachusetts Supreme Court held that adoption of a floodplain zoning ordinance was valid pursuant to a Massachusetts statute authorizing towns to adopt zoning providing "that lands deemed subject to seasonal or periodic flooding shall not be used for residence or other purposes in such a manner as to endanger the health or safety of the occupants thereof."[54] The court noted that, even before the enabling act had been amended to include specific reference to flood, "we believe that a municipality could validly have enacted a floodplain zoning bylaw under the general grant of authority . . . (to promote the health, safety, convenience, morals, or welfare), and for the reasons . . . (to secure safety from fire, panic, and other dangers)."[55] A concurring opinion of the Oklahoma Supreme Court similarly concluded that municipalities had sufficient power to adopt floodplain zoning under a broad zoning enabling act.[56]

The Colorado Supreme Court held that a county had sufficient power to adopt floodplain and mineral conservation zones under a broad enabling statute.[57] The Washington Supreme Court held that a statute authorizing a state agency to regulate flood hazard areas was sufficiently broad to justify denial of permits for residences in floodways.[58] The South Dakota Supreme Court held that Rapid City was exercising a valid use of police powers when it adopted regulations prohibiting issuance of building permits for an area devastated by the June 12, 1972 flood, until a planning study was complete.[59]

Courts in several jurisdictions held that the powers of special districts were sufficiently broad to authorize adoption of floodplain regulations. In Metropolitan St. Louis Sewer District[60] the Missouri Supreme Court upheld sewer district regulations requiring construction of drainage facilities in subdivisions. The regulations had been adopted pursuant to a broad grant of powers to deal with sewage. Similarly, in Krahl,[61] the Minnesota Supreme Court upheld the floodplain encroachment and elevation requirements of the watershed district since the district had a general grant of power to deal with problems of water use.

In County of Ramsey v. Stevens,[62] the Minnesota court went beyond a mere affirmation of local powers when it sustained a lower court decision ordering a local community (Lilydale) to adopt regulations. A special statute required that communities designated by the Minnesota Department

of Natural Resources adopt regulations to qualify for the NFIP, but Lilydale had failed to comply with this statute.

In Hamlin,[63] the New Jersey Supreme Court held that not only were local subdivision review powers sufficiently broad to require drainage facilities, but also they imposed an affirmative duty upon the local planning board to consider flooding. The court held that a planning board had improperly failed to consider effects of drainage and flooding when it gave tentative approval to a subdivision for 43 homes on a 28-acre tract of undeveloped farmland and ordered the board to do so.

The Need to Follow Statutory Procedures

In a few cases, landowners argued that state or local regulations had not been adopted or administered in a manner consistent with statutory procedures. Several cases held regulations partially or wholly invalid where adoption procedures were not followed. In Jefferson County v. Johnson,[64] the Alabama Supreme Court held that a county building code and a county resolution adopted to qualify for the NFIP were not sufficient in themselves to authorize the county engineer to deny a permit for construction in a floodway area: a more formal zoning regulation was needed. In Morland Development Co. v. City of Tulsa,[65] the Oklahoma Supreme Court held that floodplain zoning adopted as an amendment to other zoning was invalid because it was adopted without notifying landowners in writing as the zoning enabling act required for zoning amendments. In A. H. Smith Sand and Gravel Co. v. Department of Natural Resources,[66] the Maryland Court of Appeals strongly endorsed the concept of state floodplain regulations, but held that the regulations in this case had been based improperly on data that assumed future "developed" watershed conditions. The statute required consideration only of existing conditions. The court did not invalidate the regulations, but it did require a recalculation of flood elevations. Later the state statute was changed to explicitly permit the consideration of future watershed conditions.

The Minnesota court in County of Ramsey[67] permitted minor irregularities in statutory procedures. The court held that regulations adopted by the city of Lilydale to qualify for flood insurance, under an order of a lower court to adopt such regulations within 72 hours, were valid despite the failure of the city to provide public notice of the regulations as required by state zoning laws. The regulations were adopted while rising waters threatened to flood the area. The court noted that statutory notice and hearing procedures would have been so time-consuming that the flood would have occurred before the regulations were adopted negating, in part, the reason for their adoption. The court stated that failure to comply with statutory procedures could only be justified in emergency circumstances. In addition, the court found no real denial of due process since the landowner contesting the regulations was in fact aware of their impending adoption.

Validity of Interim Regulations

In several cases, landowners challenged interim regulations as not having been specifically authorized or adopted pursuant to statutory procedures. Interim regulations are specifically authorized only in some of the states. There has been some question, therefore, whether such regulations exceed the scope of local powers or fail to follow prescribed procedures. As noted above, an Alabama court held that a

resolution intended as an interim regulation was not a valid basis for denying a building permit. Courts in three other decisions supported more formal interim floodplain regulations.

In Cappture Realty Corp.[68] the Superior Court of New Jersey upheld a moratorium for construction on flood-prone lands until a flood control plan could be prepared. The moratorium had been adopted in October 1971 and extended for yearly periods until November 1974. All statutory procedures had been followed in adopting the ordinance. Under the terms of the ordinance, special permits could be obtained, providing construction did not generate any additional surface runoff. An exception had been denied in the case.

In Lindquist[69] the South Dakota Supreme Court held that adoption of a resolution by the City Council of Rapid City was a valid exercise of police powers. After the devastating flood of June 12, 1972, the resolution prohibited issuance of building permits for one block on either side of Rapid Creek until a study was completed by the planning commission. The resolution and subsequent "notice of intent to acquire" issued by the city in September 1974 did not take property under eminent domain. The court observed:

> This appears to be a legitimate government interest when we consider the situation at the time the resolution was adopted, that is, widespread destruction and a need for some emergency action.[70]

Again, all procedures for adoption of a resolution had apparently been followed.

In Beckendorff v. Harris-Galveston Coastal Subsidence District,[71] the Texas Supreme Court upheld the issuance of temporary groundwater withdrawal permits for an area subject to subsidence-induced coastal flooding until a comprehensive plan could be prepared.

Courts have widely upheld interim resource management regulations in analogous contexts where statutory procedures were followed. These include interim regulations adopted pursuant to the California[72] and North Carolina[73] Coastal Zone Management Acts and interim wetland protection regulations adopted under the New York Coastal Wetlands Protection Act.[74]

Validity of State Floodplain Regulations

All decisions have upheld contested state floodplain regulations as within the scope of statutory powers. The sufficiency of state floodway statutes was sustained by courts in Iowa,[75] Washington,[76] Indiana,[77] and New Jersey.[78] The Maryland Court of Appeals in A. H. Smith Sand and Gravel Co.[79] held that the state had sufficient power to adopt state floodplain regulations pursuant to a broad pollution control statute. In State v. Crown Zellerbach Corp.,[80] a Washington court upheld the power of a state agency to attach conditions to permits for structures in streams in order to ensure compliance with pollution control standards within three years.

Several courts sustained state or state-supervised local regulations against claims that they violated local home rule powers. In Pope,[81] the Georgia Supreme Court held that the Metropolitan River Protection

Act was valid and did not violate local home rule powers or constitute state zoning. The act required permits for development in the stream corridor (all land within 2,000 feet of the stream) and the 50-year floodplain to protect the flow of flood waters and prevent erosion, siltation, and water pollution. The court held that flooding was a matter of statewide concern. Similarly, local home rule arguments were rejected in the Washington and Indiana floodway cases.

Courts unanimously upheld other types of state resource management regulations against local home rule arguments including the Oregon State Wild and Scenic River Act,[82] which requires state permits for uses within the river corridor; the Minnesota State Wild and Scenic River Act[83] and state standards adopted for local regulation; the California Coastal Zone Management Act,[84] which requires permits from regional councils; the New Jersey[85] and North Carolina[86] Coastal Zone Management Acts; and New York's regulations for its Adirondack Park.[87] The reasoning was similar in each case: the matter was of more than local concern. In addition to these cases, a New York court sustained county wetland regulations adopted pursuant to a statute that authorized the county to act if towns failed to pass appropriate ordinances.[88] A town argued that county regulations for a town without controls violated home rule powers. This argument was rejected, again based on the rationale that wetland protection was of more than local concern.

Adequacy of Regulatory Objectives

Landowners challenged the validity of floodplain management objectives in a few cases. During the decade, courts endorsed six major flood loss reduction goals.

(1) Preventing increases in flood heights and damages. Courts in California,[89] Indiana,[90] Iowa,[91] and Washington[92] strongly endorsed regulations designed to protect flood flow capacity and prevent landowners from increasing flood heights or velocities on other lands. Several of these cases specifically endorsed the consideration in the regulations of cumulative impacts and future development.

(2) Protecting flood storage. The Supreme Court of Minnesota sustained watershed district regulations designed to protect flood storage.[93] Similarly, a Massachusetts court sustained regulations to protect storage along the Neponset River, even where there was evidence that a proposed use would have raised flood heights only 1/4 inch.[94] On the other hand, an Illinois court held that certain storage restrictions that prevented all private use of lands were unreasonable, although it generally endorsed the storage concept.[95]

(3) Protecting buyers from victimization caused by subdivision and sale of flood-prone lands. Illinois,[96] Missouri,[97] and New Jersey[98] courts sustained subdivision regulations requiring storm sewers. The New Jersey court determined that a planning board's decision to approve a plat without taking into account possible problems with drainage was invalid since consideration of drainage was an affirmative duty.[99]

(4) Protecting landowners from flood losses due to their own use of the floodplain. In Turnpike Realty,[100] the Massachusetts Supreme Court endorsed as basic policy "the protection of individuals who might choose, despite the flood dangers, to develop or occupy land on a floodplain."[101] A New York court cited and quoted this language and held

that "[i]t is beyond question that these objectives which correspond closely to the stated purposes of present ordinance, may be the subject of a legitimate exercise of the police power. . ."[102]

(5) Protecting and promoting the general welfare, including reduction in public flood-related expenses. The Massachusetts court in Turnpike also strongly endorsed the reduction in public costs. It stated that a principal objective for floodplain regulations was "the protection of the entire community from individual choices of land use which require subsequent public expenditures for public works and disaster relief."[103] A New York court also endorsed this goal and language.[104]

Discrimination

Courts considered arguments that regulations discriminated between similarly situated landowners in several cases. In Beckendorff[105] a Texas court held that interim regulations controlling the withdrawal of ground water to prevent subsidence and flooding were valid and nondiscriminatory despite their application to only two counties. The appellant argued that all landowners who might contribute to the problem should be regulated. Noting the regulations could be expanded in the future to other areas, the court held that "the legislature may implement their programs step by step, adopting regulations that only partially ameliorate a perceived evil and deferring complete elimination of the evil to future regulations."[106] This ruling gives support to community and local efforts to map and regulate the most seriously threatened flood hazard areas first and provide for the gradual inclusion of other areas over time. Regulatory approaches addressing some but not all areas have also been sustained for regulations applying to coastal but not inland wetlands[107] and wetlands in a particular coastal area but not another.[108]

Reasonableness of Regulations

In many cases, courts considered the reasonableness of regulations, that is, whether the regulatory standards had some reasonable tendency to accomplish the regulatory goals.

Frequency of flooding. What frequency of flooding should be used to determine floodways or flood fringe elevations? What degree of restriction is justified for particular flood frequencies? The "frequency" question has not been widely litigated, although courts have sustained regulations for particular frequencies of flooding in several cases. The Washington Supreme Court sustained encroachment restrictions for an area identified by the Corps of Engineers and the state as the 100-year floodway.[109] Similar restrictions were sustained for 100-year floodway areas in Indiana[110] and Iowa.[111] The Maryland Supreme Court sustained state regulations for the 50-year floodplain.[112] The Rhode Island Supreme Court sustained state permit requirements for activities in wetlands, defined to include the 50-year floodplain.[113]

Courts sustained restrictive controls based on historic flood data in a number of cases, although no frequency was assigned to the flooding. In Turner,[114] a California court sustained open space zoning for an area devastated by flooding in 1962 and which had been flooded four times since 1936. In Turnpike Realty,[115] the Massachusetts Supreme Court sustained open space regulations for an area which had been flooded at least three times since 1936. A New York court upheld a floodplain zoning ordinance which required that the "elevation of the lowest floor

to be used for any dwelling purpose in any residential structure shall be equal to or higher than the elevation of the high water level as determined by the enforcement officer in accordance with previous flood records," in Wolfram v. Abbey.[116] The court found that the reference in the ordinance to "previous flood records"[117] was sufficiently specific since flood records for the subject area had been officially compiled by the Corps of Engineers and the town board had adopted these as part of the town's official floodplain plan.

From these cases it is clear that courts are willing to sustain highly restrictive regulations for frequently flooded areas. Quantified estimates of flooding are desirable but not essential.

Accuracy of mapping. In one case, a Michigan court of appeals held that floodplain regulations were invalid because they were applied to an area where "there was no evidence of flooding."[118] But this is the only case that invalidated a floodplain regulation outright for lack of data and the court did so apparently because the regulation was applied to an area without any historical or theoretical evidence of flooding.

On the other hand, the Iowa Supreme Court upheld a state floodplain permit requirement for a property where there were no maps but there was evidence of flooding.[119] The Iowa statute required that landowners seek state permits for structures or obstructions in the floodplain but did not require state floodplain mapping. A landowner in this case claimed that he should not have been left to his own devices to determine whether he was in the floodplain. The court disagreed, noting that since the landowner had constructed a levee at the site he must have suspected or known he was in the floodplain.

Map scale apparently has not been litigated, but the issue of minor inaccuracies has been raised. In Turnpike Realty,[120] the Massachusetts Supreme Court upheld the sufficiency of Dedham's floodplain zoning map which incorrectly included in the floodplain two knolls with a combined area of 3.4 acres. However, for other areas, there was substantial evidence of flooding, including photographs and exhibits of flooding from 1954 and 1967 and testimony of an expert hydrologist. Flood levels had been reached in 1936, 1938, 1955, and 1968. The court held that inclusion of the knolls was "inadvertent."[121] This minor inaccuracy did not invalidate the regulation since the owner could seek a special permit for such areas under ordinance provisions allowing a landowner to demonstrate that a particular area was not subject to flooding.

In Just,[122] a Wisconsin court upheld a procedure for remedying map inaccuracies through field inspections and the application of written criteria to the wetlands in question.

Several courts have sustained suspensions of communities from the NFIP because of failure to adopt adequate regulations, despite community arguments that because of map inaccuracies they should not be required to adopt them. In Roberts v. Secretary, Department of Housing and Urban Development,[123] a federal district court granted summary judgment for FIA, sustaining flood boundary maps and subsequent regulations based on them. The floodway and floodplain areas had been mapped according to present and historical conditions rather than conditions expected to exist after completion of a flood control project and other public works. The community argued that future conditions should be considered.

In a second case, Town of Falmouth v. Hunter,[124] a federal district court similarly ruled that Falmouth, Massachusetts could be suspended from participation in the flood insurance program. The town claimed that coastal maps included in the flood insurance study were inaccurate. Falmouth had entered the emergency program in 1971. The Corps of Engineers completed the flood insurance study in 1972 and the town entered the regular program in 1973. In 1974 the town appealed the flood insurance study, claiming that boundaries were arbitrary and unsupported by sound data and scientific principles. FIA conceded some errors, made modifications, and issued revised elevations in 1975. New elevations went into effect in April 1976. The town proposed an alternative method for determining elevations and requested six months to carry out studies applying the new approach. FIA rejected this proposal and began action to suspend the town's participation in the NFIP. The town initiated a suit to prevent suspension. The court sustained the suspension, reasoning that the community could adopt the required regulations while it was carrying out its own studies.

Standards for floodway areas. In several decisions courts sustained criteria used for defining floodway areas. In Young Plumbing and Heating Co.,[125] the Iowa Supreme Court upheld the Iowa Natural Resources Council's denial of a permit for a condominium within a 100-year floodway which was 200 feet wide. The condominium would have increased flooding by 0.3 of a foot, but the cumulative impact (assuming an equal degree of encroachment) would have been 1.7 feet. The court ordered that the building be removed, despite arguments by the landowner that he should be allowed to channel the stream to provide compensatory increases in flow capacity.

In Krahl,[126] the Minnesota Supreme Court sustained a water district's regulations based on a concept of floodway delineation which involved permitting encroachments to extend "approximately 20% of the distance between the flood zone contour and the creek channel."

In Subaru of New England,[127] a Massachusetts court sustained the town's highly restrictive floodplain regulations which were designed to protect natural valley storage of the Neponset River. The court sustained the regulations despite evidence that the proposed development would raise flood heights only 1/4 inch.

Cumulative impacts. Several courts sustained state and local consideration of the "cumulative impact" of development in evaluating development proposals or determining encroachment lines. In the Young[128] decision the Iowa Supreme Court sustained consideration of cumulative impacts. The Georgia Supreme Court in Pope,[129] endorsed consideration of cumulative impacts even though the court found insufficient evidence of cumulative impact in this instance. In Subaru of New England,[130] a Massachusetts court, in upholding restrictions, strongly endorsed a cumulative impact argument. In Beckendorff,[131] the Texas Supreme Court held that regulation of individual groundwater extractions to prevent cumulative subsidence and flooding effects was justified. It noted:

> An individual's action may be lawfully regulated when it operates in concert with others' actions to produce an effect, even though the individual action of itself would be incapable of achieving the effect.[132]

Despite judicial approval for consideration of cumulative impacts, several courts held that in specific factual situations, evidence of cumulative impacts was insufficient to justify withholding a permit. These include a Massachusetts coastal wetlands case[133] in which it was argued that filling would have detrimental impact on flooding and erosion but little evidence was provided to support this conclusion; Pope,[134] in which generalized testimony on the impact of impervious surface was held insufficient to justify denial of a permit for a tennis court; and a New Jersey case in which the court held that a 2-acre minimum lot size throughout the town to reduce runoff and increase infiltration was not justified by the evidence.[135]

Consideration of Present Versus Future Conditions. Several courts considered the sufficiency of flood maps based on existing versus projected watershed conditions.

In A. H. Smith Sand and Gravel Co.[136] a Maryland court sustained state floodplain regulations, but held that flood maps were to be based on existing rather than future watershed conditions and ordered the modification of flood boundaries. The enabling statute required that existing conditions be considered. The Maryland legislature later amended the statute to authorize mapping based on future watershed conditions.

As noted above, a federal district court in Roberts[137] sustained the suspension of a community from the NFIP for failure to adopt "regular program" regulations, despite a claim by the community that the flood maps were inadequate. This case sustained federal mapping of floodplains based on existing conditions. However, the court might also have sustained maps based upon future conditions had FIA taken this approach.

In Young Plumbing and Heating Co.,[138] discussed above, the Iowa Supreme Court strongly endorsed efforts of the Iowa Natural Resources Council to take into account anticipated future development in determining encroachment limits. With regard to the argument that damages to adjacent landowners were "anticipatory," the court held that the Council had properly looked to the future:

> One function of the Council is to facilitate flood control through planning. . . . Part of this function involves projecting the occurrence of floods. In this sense the actions of the Council are always anticipatory as to floods, the effect of channel modifications on adjacent lands, and future development on adjacent lands. Regardless of whether like construction or development were to be undertaken on the opposite bank, the proposed construction and the accompanying channel modifications will reduce the number of potential uses and the corresponding value of the adjacent land due to increased susceptibility to flooding. The effect on adjacent lands being a consideration mandated by the legislature, and planning being a delegated function of the Council, the anticipatory nature of the Council's findings does not work against their reasonableness.[139]

Similarly, in Pope[140] it was held that under the Georgia River Protection Act, the metropolitan council could take into account future conditions.

Judicial review of reasonableness. Courts deferred to legislative or agency determinations on factual matters[141] if there was any evidence

to support them. Judicial deference to agency fact-finding is due in part to courts' reluctance to act as experts and in part to their endorsement of the separation of judicial, legislative, and executive powers.

Iowa's Young[142] decision represents the most common judicial approach for review of federal, state, and local agency decisions, including data gathering and analysis and the selection of data-gathering and analysis techniques. Here the court held that an agency decision will be reversed only where it is "unsupported by substantial evidence in the record made before the agency when the record is viewed as a whole."[143] (emphasis added). The court applied the following standard of review to determine whether there was substantial evidence:

> Evidence is substantial when a reasonable mind would accept it as adequate to reach a conclusion . . . . [T]he entire record must be considered in determining whether the challenged finding has sufficient support. Nonetheless, the possibility of drawing two inconsistent conclusions from the evidence does not prevent an administrative agency's findings from being supported by substantial evidence . . . .[144]

Finding a basis for the Iowa Natural Resources Council's conclusions in the record and stressing the impact of the proposed use on adjacent lands, the court upheld the Council. The court further noted:

> The conclusion of the Council is further supported by the deference with which a reviewing court should approach agency action due to the Council's particular expertise . . . . Still a court reviewing agency action must scrutinize the whole record to evaluate any alleged statutory grounds for invalidation.[145]

Judicial support for decision making by special agencies or boards occurred in many cases.[146] California[147] and Massachusetts[148] courts gave particular deference to local decision making.

However, as noted above, several courts held that agency decisions in specific contexts were not based on sufficient data.[149] In requiring the upgrading of flood maps after new flood data became available, the Maryland court noted that "[t]he conclusion reached by an administrative agency, with all of its expertise, can be no more sound than the factual basis upon which it rests."[150]

Special Exceptions and Variances

Courts widely sustained special permit approaches, which were often applied to floodways or river corridors.[151] In Pope,[152] the Georgia Supreme Court upheld the Metropolitan River Protection Act's requirement that permits be sought for development within 2,000 feet of streams. This act more specifically provided that uses within 150 feet of the river and the 50-year floodplain were restricted to those "not harmful to the water and land resources of the stream corridor . . . [which do not] significantly impede the natural flow of flood waters, and [which] will not result in significant land erosion, stream bank erosion, siltation or water pollution."[153] Grading and vegetation clearance permits were required; cut and fill operations that would alter the natural flow of waters were prohibited; and only 20% of the floodplain could be covered with impervious surfaces.

Several courts deemed that the potential for issuance of a special permit was significant in deciding whether regulations were a taking of private property. These decisions included a landmark Wisconsin wetland protection decision,[154] a Washington Supreme Court decision sustaining encroachment regulations[155] and a Massachusetts Supreme Court decision supporting the validity of local restrictions for a floodplain area.[156]

Courts sustained the adequacy of standards for special permits in all cases addressing the issue. In Dur-Bar Realty Co.[157] a New York court held valid an ordinance that permitted no floodplain uses by right and required a local board to evaluate proposed uses to determine their impact on flood heights and safety from flooding.

In Wolfram,[158] a New York court upheld a floodplain zoning ordinance that authorized the zoning administrator to determine flood hazard areas with data from the Corps. Special permits were to be obtained from the zoning board of appeals, which was also authorized to require "[a]ny other controls or restrictions which are deemed necessary to minimize or eliminate damage to buildings and structures from flood waters."[159]

Data base for permit approval or denial. Several courts held that permits were invalidly denied in particular circumstances because of an insufficient factual basis for such denial. In MacGibbon v. Board of Appeals,[160] the Massachusetts Supreme Court held that a permit for fill in a coastal wetland had been invalidly denied on flooding and erosion grounds, both because there was lack of evidence of such problems and because adequate measures could be taken to deal with flooding and erosion.

In Pope,[161] denial of a permit for a tennis court based on an argument of cumulative effect on flooding was not supported by sufficient evidence. The landowner introduced evidence from the director of Atlanta's Bureau of Buildings that construction of the tennis court would not significantly affect the river. The only rebuttal was testimony of an environmental planner with the Atlanta Regional Commission who had never inspected the proposed construction site.

Several courts upheld the denial of variances for floodplain areas. In Kraiser v. Zoning Hearing Board,[162] a Pennsylvania court sustained denial of a variance for a residential duplex in a floodplain conservation area. The court noted that, based on engineering testimony, "it can be properly concluded that building on the floodplain would increase flood height and conceivably increase the hazard to the inhabitants of other buildings both on and away from the zoned areas."[163]

The court also noted, "Kraiser's puzzlement is understandable. If he complies with the permitted conditional uses under the Floodplain Ordinance he finds himself for all practical purposes stuck with a useless property. But in the interests of all the residents, he must suffer along with other property owners who are likewise affected by the ordinance."[164]

Similarly, in National Merritt, Inc. v. Weist[165] the New York Court of Appeals held that a zoning board of adjustment properly denied a property owner's request for an area variance for a 19 3/4-acre parcel to be used as a shopping center. The decision was due in part to a finding that the shopping center would create flooding and drainage problems for the area. The court noted:

> Considerable evidence, also unrebutted, was introduced to demonstrate that the leveling of the property and its conversion into an area almost completely covered by structures and asphalt pavement would result in severe flooding and drainage problems . . . . Both the United States Department of Agriculture and the Westchester County Soil and Conservation Service advised the parties that petitioner's plans did not adequately provide for the control of storm water and erosion.[166]

In contrast, one court held that a variance for a liquid propane gas tank was acceptable in a wetland area subject to flooding where there was no evidence of adverse impacts.[167]

In Green's Bottom Sportsmen, Inc. v. St. Charles County Board of Adjustment,[168] a Missouri court held that a zoning board of adjustment could revoke a permit that was incorrectly issued by a zoning commission. The permit was for a gun club on a 49-acre tract of floodplain near the Missouri River where county floodplain regulations did not permit such uses. Nearby landowners appealed the permit to the board several months after the commission issued it. Prior to this they had been unaware of the club.

The Taking Issue

In 36 of the 55 floodplain regulation cases in the last decade, a "taking" was one of the issues addressed. The courts in 34 of these cases held that there had been no taking. A taking was found in each of two cases where the regulations were subject to other deficiencies such as inadequate data.[169] Both were lower court decisions; in each, the court endorsed the general concept of regulations yet disapproved of them as applied to the specific property in question. This resounding support for floodplain, wetland, coastal zone, and other regulations against claims of taking may explain why courts now focus more closely on the reasonableness issue and other aspects of regulations and why "taking" is now rarely the major issue.

U.S. Supreme Court Cases. During the 1970s the U.S. Supreme Court considered the taking issue in zoning cases for the first time since the 1920s. One case involved regulations for a flood area although the court did not make a decision on the merits. Because U.S. Supreme Court decisions are important to all lower courts, its treatment of the taking issue will be examined.

In the first of these cases, Penn Central Transportation Co. v. City of New York,[170] the Court upheld New York City's Landmarks Preservation Law to protect landmarks and neighborhoods. This law, combined with applicable zoning ordinances, permitted that individual structures be designated as "landmarks" and the blocks containing the structures as "sites". Owners of designated structures were required to keep exterior features in good repair. Exterior alterations require approval by a commission. Accompanying zoning bylaws permitted owners of designated buildings to transfer development rights to other lots on the block.

In analyzing the law, the Court noted that "this Court, quite simply, has been unable to develop any set formula for determining when justice and fairness require that economic injuries caused by public action be compensated by government, rather than remain disproportionately concentrated on a few persons."[171] The Court analyzed the public

need for the law and the severity of the impact on Penn Central, the landowner. It found that Penn Central had not been unfairly burdened by the regulations, which affected all landmarked property. The Court concluded that Penn Central had a reasonable return on its investment in light of the use now being made of the structure and similar uses in the area owned by Penn Central. Although the Court did not consider the constitutionality of the development rights scheme per se, it noted that the rights "were valuable" and served to mitigate the impact of the regulations.

In a second case, Agins v. City of Tiburon,[172] the Court generally sustained "residential planned development and open space" zoning regulations for a section of Tiburon, California. The regulations had been adopted pursuant to a state law that required California communities to prepare a plan governing both land use and development of open space. The contested regulations were designed to discourage the "premature and unnecessary conversion of open-space land to urban uses." One of the ordinance's objectives was to prevent premature conversion of open space, "thereby protecting against the resultant adverse impacts such as . . . disturbance of the ecology and the environment, hazards related to geology, fire and flood. . . ."[173] The Court did not extensively discuss the taking issue since the landowner had not applied for a permit under the ordinance, but had rather attacked the general validity of the regulations. The Court strongly endorsed the regulatory objectives--to discourage premature conversion of open space. It held that the landowner had not shown that he was deprived of economic use of his land. Noting that benefits as well as burdens from the regulations would accrue to the landowner and that this was relevant to a consideration of taking, the Court noted:

> Appellants therefore will share with other owners the benefits and burdens of the city's exercise of police power. In assessing the fairness of the zoning ordinance, those benefits must be considered along with any diminution in market value that the appellants might suffer.[174]

The Court here, as in Penn Central, did not concentrate on the diminution in value caused by the regulations but on whether some value remained for the entire parcel of land.

In a third decision, San Diego Gas and Electric Co. v. City of San Diego,[175] the Supreme Court dismissed an appeal by a utility company which claimed that "downzoning" of a 214-acre tract (some of it floodplain) by the city of San Diego was a taking by inverse condemnation. The Court dismissed the appeal because a final judgment had not been made in the case since further proceedings were contemplated at the trial court level. Nevertheless, Justice Brennan filed a vigorous dissent joined by Justices Stewart, Marshall, and Powell.

The decision is of interest despite dismissal of the appeal because the strong dissent indicates a potential willingness on the part of the Court to review state and local land use regulation cases as violative of 5th Amendment as well as 14th Amendment guarantees. However, it is to be noted that regulations were apparently being used to lower land values prior to acquisition--a traditionally invalid use of police powers.

The appellant in the case had acquired 214 acres of marshy flood-plain land in 1966 when it was zoned for industrial and agricultural uses. In 1973, San Diego downzoned a portion of the land from industrial to agricultural and increased the minimum lot sizes. The city also incorporated the land into an open space plan and designated it for potential acquisition. The appellant filed suit, claiming damages of $6,150,000 in inverse condemnation, and seeking mandamus and declaratory relief as well. The trial court granted judgment for the appellant. The California Court of Appeals affirmed, holding, in part, that the purpose of the downzoning was to lower property values. The California Supreme Court granted the city's petition for hearing but transferred the case to the Court of Appeals for rehearing in light of the intervening Agins decision. There, the California Supreme Court had held that an owner deprived of substantially all beneficial use of the land by zoning regulation is not entitled to an award of damages in inverse condemnation, but only to invalidation of the regulation in an action for mandamus or declaratory relief. The California Supreme Court denied further review and the matter was appealed to the U.S. Supreme Court.

Justice Blackmun, speaking for the majority of the Supreme Court, dismissed the appeal because the lower court's decision was not final, but he warned that "we are frank to say that the federal constitutional aspects of that [the taking] issue are not to be cast aside lightly. . ."[176] Justice Brennan, in his dissent, argued that the decision by the California Court of Appeals holding that a state regulation could not be a taking under federal law was a final judgment on this matter, subject to Supreme Court review. He argued further that the Court of Appeals had applied a misinterpretation of federal law and that "once a court finds a police power regulation has effected a 'taking', the government entity must pay just compensation for the period commencing on the date the regulation first effected the 'taking', and ending on the date the government entity chooses to rescind or otherwise amend the regulation."[177]

Tests for a taking. Federal and state court decisions during the decade emphasized similar factors in deciding whether a taking had occurred. Several tests were often simultaneously applied. The taking issue was not usually addressed in isolation but in combination with questions about the validity of the regulatory objectives, the reasonableness, basic fairness (due process) and nondiscriminatory nature of the regulations.[178] Regulations that were deficient in other aspects were in several instances held to be a taking.[179] The usual final test was, Did the regulations prevent all economic or reasonable use of the land? The entire parcel was generally examined, not just the area subject to flooding.[180] Regulations which confined property to open space uses were sustained in a number of important decisions.[181]

Preventing nuisances--Without exception, courts held that prevention of nuisances on private lands was not a taking. Regulations controlling uses that would be "nuisance like" in causing damage to adjacent lands or threatening public safety do not take any property right because landowners have no right to make nuisances of themselves. During the 1970s many cases upheld floodway and other regulations designed to prevent offsite nuisance-like effects even when those regulations prohibited all or essentially all economic use of lands.[182]

Physical interference with private lands--In contrast with the decisions on nuisance prevention, courts have almost always held that

public activities which physically interfere with private lands constitute a taking. For example, public construction of a dune on private land which had been damaged by a severe storm in March 1962, was held to be a taking.[183] But several courts held that because regulations do not physically interfere with private lands, they do not constitute takings.[184]

"Public use" of private land--Courts have usually held that natural conveyance of flood flows, flood storage, erosion control, and other passive flood hazard reduction functions are not public uses of private land that require compensation.[185] As one court in a floodplain case noted, "[T]he State has not placed appellant's land in the path of floods, nature has."[186] Floodplain regulations do not enhance any government enterprise.[187]

Balancing private and public interests--Courts generally have balanced society's need for regulations against the impact of regulations on private landowners: severe impact on individual property owners can be justified when the public need is great. In recent years courts have come to rely increasingly on the legislative process to balance the needs and impacts and have minimized judicial oversight.[188]

Equity in the distribution of benefits and burdens--Courts noted that government actions which "unfairly" burden a few for the good of the many may be held a taking, although during the decade no floodplain regulations were held invalid on equitable grounds alone. Two Supreme Court decisions cited above and many lower court decisions on takings have stressed the need for equity in regulations.[189] However, a Massachusetts decision[190] upheld regulations for a wetland flood storage area to prevent increased downstream flood losses despite arguments that regulations benefited downstream property owners without reciprocal benefits to upstream owners. The court held that "as long as the restrictions are reasonably related to the implementation of a policy. . . expected to produce a widespread public benefit and applicable to all similarly situated property," they need not produce a reciprocal benefit.[191]

Regulations adopted to serve regional, statewide, or national needs and which apply uniformly to flood-prone properties are less likely to be held a taking. In finding that no taking had occurred, several courts emphasized the role of regulations as part of a broader plan or program.[192]

Diminution in value--Courts held that regulations may diminish property values, but that at some point such diminution will constitute a taking. This test has been cited in many cases during the last decade, but rarely has it been more than one of several factors considered.[193] Instead, courts have paid more attention to whether the regulations deny all reasonable use of the land.

Denial of all reasonable or economic use of land--The most common "final" test for taking during the decade was whether regulations denied all "reasonable" or "economic" use of land. A detailed economic analysis was rarely undertaken. In a number of cases, courts have found that agriculture, forestry, and other open space uses were "reasonable" in certain contexts.[194] Courts also held that the regulation's impact on an individual's entire property, not just the floodplain portion, must be considered in deciding whether reasonable uses remain.[195] Although

courts emphasized, as a matter of principle, that regulations must not prohibit all reasonable use, in several cases they held that proposed uses that would increase flood heights or would be subject to severe flood damages were not reasonable, despite few remaining economic uses for the land.[196]

No right to destroy the natural suitability of the land--Several courts held that landowners had no right to destroy the natural suitability or capability of lands. Hence, prohibition of uses threatening such suitability was not considered a taking. In one wetland case,[197] the court sustained the constitutionality of state-supervised shoreland regulations. The decision was based in part on the public trust in waters and also on the theory that a landowner has no right to destroy the natural suitability of the land when such uses will injure the public: no right was "taken" by the regulations. In effect, paramount public interests were recognized in private wetlands.

Wetland and other resource protection regulations. Restrictive wetland regulations have been widely litigated over the last decade, primarily on the taking issue. Most courts have sustained restrictive regulations, particularly in the last five years.[198] Before 1970, most decisions were adverse to highly restrictive wetland regulations, giving rise to the caveats in Volumes 1 and 2[199] that careful distinctions be drawn between floodplain regulations related to hazard reduction and wetland controls designed to protect wildlife and environmental resources. Continued distinction between hazard reduction and environmental regulations may be desirable in some instances to provide independent but interrelated bases for permit evaluation and support for regulations. However, regulations combined to reduce flood losses and protect wetlands may be mutually supportive in a legal context.

Decisions favorable to wetland protection include federal court cases sustaining Corps denials of Section 10 and Section 404 permits for dredging and filling in wetlands because the material could adversely affect wildlife, water quality, and other environmental values. For example, in Deltona Corp. v. United States,[200] the U.S. Court of Claims held that the denial of a permit by the Corps of Engineers to dredge and fill a mangrove wetland in Florida did not take private property. The court noted that denial of the permit would affect the usefulness of only a portion of the property.

State court decisions have been increasingly favorable as well. In Just,[201] the most famous of these, the Wisconsin Supreme Court flatly rejected earlier precedents from other jurisdictions that invalidated wetland controls and it upheld state-supervised county shoreland zoning restrictions as nonconfiscatory. Tight restrictions were not a taking, the court argued, because the landowner had no absolute right to improve the land:

> Is the ownership of a parcel of land so absolute that man can change its nature to suit any of his purposes? The great forests of our state were stripped on the theory man's ownership was unlimited. But in forestry, the land at least was used naturally, only the natural fruit of the land (the trees) were taken. The despoilage was in failure to look to the future and provide for the restoration of the land. An owner of land has no absolute and unlimited right to change the

essential character of his land so as to use it for a purpose for which it was unsuited in its natural state and which injures the rights of others.[202]

In Potomac Sand and Gravel Co.,[203] the Maryland Court of Appeals upheld a statute prohibiting dredging of coastal wetlands in Charles County. In Sands Point Harbor, Inc. v. Sullivan,[204] the New Jersey Supreme Court held that the New Jersey Coastal Wetland Act and an administrative order adopted pursuant to it served valid objectives, did not discriminate between similarly situated landowners, and did not take private property.

Courts have broadly endorsed a wide range of other resource protection and management regulations that apply, to a greater or lesser extent, to floodplains. Courts in Minnesota[205] and Oregon[206] have sustained special state or state-supervised regulations for recreational wild and scenic rivers or river corridors. Courts in California,[207] New Jersey,[208] and North Carolina[209] have sustained coastal zone management programs. Courts in many states have sustained agricultural zoning.[210] The courts of Wisconsin[211] and Washington State[212] have sustained shoreland regulations for lake and stream shores.

Relationship of regulations to acquisition. In several decisions, courts have considered the validity of floodplain regulations where public purchase of land was contemplated in the future. In County of Ramsey,[213] the Minnesota Supreme Court sustained floodplain regulations for severely flooded land intended for future park acquisition. The court held that minimization of flood damages and purchase of flood insurance were valid independent objectives, but warned that regulations designed solely to reduce property values would be a taking. Courts from other jurisdictions have endorsed a similar rule.[214] Zoning or other regulations (except official mapping of streets) solely to reduce future condemnation costs are a taking, but not regulations based on valid independent objectives that reduce land values only incidentally.

In Turner,[215] a California court sustained highly restrictive regulations in an area for which the Corps of Engineers had recommended acquisition of flowage easements. The court rejected arguments that payment should be provided for the restrictions and noted that it was the option of the government body to regulate rather than to acquire the lands.

In Foreman[216] a floodplain landowner questioned the validity of state encroachment regulations based in part on an argument that flood easements should have been acquired instead because the state encroachment statute authorized both regulations and easements. The court rejected the landowner's contention and held that the state had the option either to regulate or to acquire the lands.

In both the Turner and Foreman cases, the landowners argued either that the regulations were invalid as a taking or that payments should be awarded for reduction in land values if the regulations were found valid (i.e., inverse condemnation). These arguments were rejected there and also in Zisk v. City of Roseville,[217] in which a California court held that a landowner could not claim compensation for floodplain restrictions while at the same time contesting the restrictions. Rather, he should have initiated a suit in eminent domain. A Pennsylvania case

took a similar position.[218] Although no court awarded damages for floodplain restrictions, a Minnesota court warned that damages might be awarded in a case where the impact of regulations was too great.[219]

A New York court held that floodplain regulations with the ulterior motive of maintaining private land as a park were a taking where the owner offered to comply with applicable floodplain regulations.[220] The floodplain regulations were not, in themselves, an issue.

Cases invalidating regulations as a taking. Only two cases in the decade held that floodplain regulations were a taking. Both occurred in the early 1970s and were lower state court decisions. In both instances, the regulations were subject to other defects.

In Sturdy Homes, Inc. v. Township of Redford,[221] a Michigan court held that regulations were confiscatory when they were applied to an area with "no evidence of flooding." In American National Bank and Trust Co. of Chicago v. Village of Winfield,[222] an Illinois court generally supported the concept of regulation to protect aquifer recharge, flood storage, and open space, but it stated that restriction of a 32-acre parcel (70% within the floodplain) to single-family residences was unreasonable. Fill for such residences would have cost $4,192 to $12,577 an acre. The land was only worth $6,000 an acre for single-family use.

A lower court case from New York also held that denial of a permit under a dune protection ordinance (not a floodplain ordinance per se) was invalid, although the regulations were not, per se, a taking.[223] The irregular procedures followed by the town may have had much to do with the holding, however. The town board had first issued a permit for a dwelling on a dune and then denied it pursuant to a dune protection ordinance. Construction had already commenced after revocation of the permit.

Governmental Liability for Flood Damages

Courts traditionally have not held federal, state, or local governments liable for flood damage except where land has been permanently flooded because of dam construction or other government projects. However, this position has changed as Congress and state legislatures have made units of government responsible for some types of flood damages. For example, in adopting the NFIP, Congress has made the federal government responsible for payment of flood insurance claims. Based on common law theories of liability, courts have also been willing to hold governments liable for certain types of flood damages that result from construction of drainage facilities.

Liability for flood control and drainage measures. Courts have held that governments have no affirmative duty to construct flood control works and are not responsible for flood damages if dams, levees, or other protection works fail to provide flood protection.[224] This is generally true even if the works were operated negligently.[225] However, courts have found liability in certain circumstances. For example, a court held a government body liable for construction of a dam that caused flooding which was "natural and probable," even though not intended, because the dam increased groundwater levels.[226]

In some jurisdictions, courts have held governments liable for construction of storm sewers that increased flooding on downstream land. For example, in Masley v. City of Lorain,[227] the Ohio Supreme Court held that the development of a portion of a creek as a stormwater system that increased flooding was a taking of property. Courts have also held municipalities liable for flood damages resulting from improperly designed storm sewer systems constructed by landowners and dedicated to the city.[228]

Liability for adoption of regulations. No court has held a government responsible for increased flood damages caused by adoption of regulations or failure to adopt regulations. Whether such a holding will occur at some time in the future in light of courts' liberalized positions on government responsibility remains to be seen. The court in Turner[229] hinted that a government unit might be liable for increased flood damages if regulations sustantially increased damages beyond those naturally occurring. In addition, the Minnesota Supreme Court in County of Ramsey[230] held that a community must adopt floodplain regulations pursuant to a state statute specifically requiring such adoption. Moreover, the court specifically ordered a noncomplying community to adopt regulations within 72 hours, although it stopped short of holding that financial liability would accrue from failure to do so. Even if a government unit was responsible, individual government officials would not be. In Gaebel v. Thornbury,[231] a Pennsylvania court held that individual council members were not personally responsible for the decrease in value caused by regulations.

Flood insurance payments. At least 25 cases have addressed some aspect of the National Flood Insurance Program. Although none has focused specifically on NFIP standards for floodplain regulations, the cases will be discussed briefly because the program is pertinent to state and local regulations.

In the best known of these cases, Texas Landowners Rights Association v. Harris,[232] a group of landowners and municipalities attacked the basic validity of the statutory framework of the NFIP pursuant to which FEMA establishes land use control standards as a condition to purchase of federally subsidized flood insurance. The District Court for the District of Columbia upheld the program and its regulations and issued a declaratory judgment, reasoning that subsidized flood insurance was a benefit and not a property right. A community could not claim a taking of property if insurance (benefits) or disaster relief (benefits) were denied for failure to comply with standards. The court also rejected arguments that the program violated the 10th Amendment by legislating matters exclusively within the prerogative of the states.

Although this was a lower federal court decision and, as such, does not act as a bar to later cases contesting particular aspects of the NFIP, it gives considerable support to the program's basic validity.

In another important decision, Commonwealth of Pennsylvania v. National Association of Flood Insurers,[233] a federal district court in Pennsylvania rejected a billion dollar claim against FIA by the Commonwealth of Pennsylvania after Hurricane Agnes. Pennsylvania argued that FIA had not publicized the National Flood Insurance Program, as required by statute. The court held that FIA had distributed brochures and carried out other public information activities.

Two federal court decisions sustained FIA suspension of communities from the NFIP because they failed to adopt "regular" program regulations. In both cases the community contested the accuracy of the flood maps prepared by FIA. In one, Roberts v. Secretary, Department of Housing and Urban Development,[234] the district court held that maps taking into account existing conditions were sufficient. In the second, City of Falmouth,[235] the district court noted that the normal map appeal procedure had been followed and that if a community wanted further review, it could adopt the necessary ordinances required for the regular program while additional analysis was taking place.

Other decisions have addressed the payment of flood insurance claims. One court denied a claim for damage to construction materials placed on the ground without cover and damaged by flooding from Lake Erie.[236] Another court held that under the terms of the statute and insurance policies, a rug damaged when a patio was flooded was not "flood damage" compensable under the flood insurance act.[237] Similarly, another court held that damage to a house from gradual beach erosion not associated with severe storms was not compensable.[238] In contrast, one court held that damage to a slab foundation and patio for a beachfront cottage undermined by a hurricane was compensable because it was due primarily to a single severe event.[239]

Another court decided that damage to houses built on filled wetlands in Louisiana,[240] which was caused by flood-related soil compaction, was not compensable even though flooding in the area did increase groundwater levels.

Courts in several cases denied claims where insurance was purchased while a flood was in progress or on the day of the flood.[241] One court held that a private insurance company had to pay an insurance claim for damage to a property in a community not in the NFIP.[242] An insurance agent erroneously accepted a check for a flood insurance policy, submitted an application form, and cashed the check before learning that flood insurance was not available.

One court upheld total loss payments for a partially damaged structure because repair would have been impractical. In this case, Gibson v. Secretary of U.S. Dept. of Housing and Urban Development,[243] a district court held that landowners were entitled to recover costs for constructing a residence at a new location, despite the physical possibility of repairing the structure at the existing location at a much lower price. Flooding had created a permanent channel around the west side of a house, separating it from the stream bank and increasing the flood risk to the point that repair was impractical.

Courts in other flood insurance cases have dealt with procedural issues such as running of the statute of limitations for filing insurance claims;[244] payment of interest and attorney's fees;[245] whether federal courts have exclusive jurisdiction over the flood insurance program (they do not, but federal law must be applied);[246] and whether the federal government could assume issuance of policies from the National Flood Insurers Association (it could).[247]

Avoiding Legal Problems

During the 1980s state and local governments will be able to regulate floodplain areas with greater confidence because of the last decade's

favorable court decisions on the taking issue, the sufficiency of floodplain enabling statutes, regulatory objectives, and maps. They can also adopt broader resource management programs with flood-hazard reduction components due to the widespread support for wetland, coastal zone, and other environmental regulations during the decade. Despite greater confidence, communities and states should carefully prepare and implement regulations to avoid legal problems. Where there are questions concerning the validity of adoption procedures (e.g., for resolutions) regulations should be readopted.

States and local governments should design programs to avoid inverse condemnation ("taking") problems. One way of doing this is to focus regulatory goals and standards upon the "nuisance" impacts of floodplain activities such as cumulative increases in flooding, pollution, or other damages to adjacent, upstream, or downstream lands. Courts have been sympathetic to regulations designed to prevent any increased damage to other lands, including not only traditional floodways but also zero-rise floodway restrictions, dune protection regulations, flood storage and stormwater detention regulations, strict control of chemical and gasoline storage and other hazardous and nuisance uses in the floodplain. The difficulties posed by the taking issue can also be diminished by applying regulations consistently to similarly situated properties and by distinguishing between the application of regulations (controlling private use) and eminent domain powers (some measure of public use).

For less seriously flooded areas, regulations can permit low-density, flood-protected structural development or open spaces with economic return such as golf courses, agriculture, forestry, and recreation. The impacts of regulation can be reduced through cluster subdivision provisions, density bonus provisions, and real estate tax incentives. Special permit procedures can provide room for negotiation between landowners and the community or the state.

Comprehensive community planning and regulations and even-handed administration of regulations will also help to meet taking challenges because courts carefully examine the overall rationality and fairness of regulations in deciding whether a taking has occurred.

Governments should provide a sound factual base (maps and other data) for regulations and for the issuance and denial of permits since courts now examine the data base with increasing care. Floodplain maps should be upgraded as watershed conditions change, new flood data becomes available, or development pressures occur. Nevertheless, relatively small-scale and inaccurate maps may suffice where administrative procedures are available to upgrade data on a case-by-case basis as development permits are submitted.

It is also important that the raw data used to prepare maps be preserved for future support of regulations in court. Communities and states should retrieve such information from flood insurance study contractors before the data are lost. Contractors are required to keep it no longer than five years. It is also important that states and communities use experts in hydrology, water resources engineering, and other water-related subjects in fact finding to form the basis for issuance or denial of permits.

Governments should, to the extent possible, provide similar degrees of regulation for similarly situated flood-prone properties since courts

are increasingly concerned with the fairness and equity of regulations. In general, regulatory agencies should define floodway lines to provide conveyance on both sides of a stream. However, mathematical precision is not necessary for setting boundaries. Uniform flood protection elevations should be applied to similarly flooded properties. Only when there are sound reasons should distinctions be made between similarly situated properties.

Regulations should be consistent with broader community and regional planning goals and guidelines. Courts more easily justify the rationale and equity of regulations that are based on soundly conceived short-term and long-term comprehensive data-gathering, planning, and regulatory programs. Comprehensive data gathering may include community-wide or regional resource inventories. Comprehensive planning may include that done for floodplain management, disaster mitigation, drainage, and land use management.

Governments should review floodplain permits and subdivision plans with care to avoid potential claims of liability which may arise if development increases flood heights. To avoid such liability, agencies may require that landowners whose activities increase flood heights on other lands purchase easements from other affected landowners. Governments should also define floodway boundaries to avoid substantial flood height increases. They should describe flood maps as approximate and warn that larger flood events may occur. Governments should also construct and operate drainage works, dikes, dams, and other flood control measures with increasing care in light of the emerging doctrines of municipal liability. In short, governments should avoid any action which may increase private flood damages.

FOOTNOTES

1. See List of Cases at end of this report.

2. 272 U.S. 365 (1926).

3. 277 U.S. 183 (1928).

4. See Water Resources Council, et al., Regulation of Flood Hazard Areas, Vol. 1, Appendix A, p. 467, and Vol. 2, Appendix F. Washington, D.C.: U.S. Government Printing Office. 1970, 1971.

5. See Regulation of Flood Hazard Areas, Vol. 1, note 4 *supra* at 24. See also J. A. Kusler Associates, Statutory Land Use Control Enabling Authority in the Fifty States. Washington, D.C.: U.S. Department of Housing and Urban Development, Federal Insurance Administration. 1975.

6. See Regulation of Flood Hazard Areas, Vol. 1, note 4 *supra* at 59.

7. See Statutory Land Use Control Enabling Authority, note 5 *supra* at 18.

8. See Regulation of Flood Hazard Areas, Vol. 1, note 4 *supra* at 42.

9. *Id.* at 297.

10. *Id.* at 301, 314.

11. *Id.* at 392.

12. *Id.* at 326, 330, 338.

13. *Id.* at 326, 335.

14. *Id.* at 326.

15. *Id.* at 356, 364.

16. *Id.* at 340.

17. *Id.* at 340, 354.

18. *Id.* at 389.

19. *Id.* at 305, 392.

20. *Id.* at 302.

21. 283 N.W.2d 538 (Minn. 1979).

22. 276 N.W.2d 377 (Iowa 1979).

23. 395 N.E.2d 880 (Mass. App. Ct. 1979).

24. 387 N.E.2d 455 (Ind. App. 1979).

25. 88 Wash.2d 726, 565 P.2d 1162 (1977).

26. 173 N.J. Super. 311, 414 A.2d 280 (1980).

27. 362 Mass. 221, 284 N.E.2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973).

28. 57 A.D.2d 51, 394 N.Y.S.2d 913 (1977).

29. Mass. App. Ct. Adv. Sh. (1980) 637.

30. 24 C.A.3d 311, 101 Cal. Rptr. 93 (1972).

31. 116 N.J. Super. 148, 281 A.2d 377 (1971).

32. 90 Misc.2d 360, 394 N.Y.S.2d 517 (1977).

33. 126 N.J. Super. 200, 313 A.2d 624 (1973).

34. 247 N.W.2d 684 (S.D. 1976).

35. 430 F.2d 199 (5th Cir. 1970).

36. E.g., P.F.Z. Properties, Inc. v. Train, 393 F.Supp. 1370 (D.D.C. 1975).

37. Avoyelles Sportsmen's League v. Alexander, 473 F.Supp. 525 (W.D. La. 1979).

38. United States v. Byrd, 609 F.2d 1204 (7th Cir. 1979); Minnehaha Creek Watershed District v. Hoffman, 597 F.2d 617 (8th Cir. 1979).

39. 266 Md. 358, 293 A.2d 241 (1972), *cert. denied*, 409 U.S. 1040 (1972).

40. 116 R.I. 54, 352 A.2d 661 (1976).

41. 56 Wis.2d 7, 201 N.W.2d 761 (1972).

42. 115 N.H.124, 336 A.2d 239 (1975).

43. 399 So.2d 1374 (Fla. 1981).

44. 57 A.D.2d 51, 394 N.Y.S.2d 913 (1977).

45. 243 Ga. 577, 255 S.E.2d 63 (1979), *cert. denied*, 440 U.S. 936 (1979).

46. E.g., Cinelli v. Whitfield Transportation, Inc., 83 N.M. 205, 490 P.2d 463 (1971); Hamlin v Matarazzo, 120 N.J. Super. 164, 293 A.2d 450 (1972).

47. 108 Ill.App.2d 230, 247 N.E.2d 47 (1969).

48. *Id.*, 247 N.E.2d at 51.

49. 120 N.J. Super. 164, 293 A.2d 450 (1972).

50. 495 S.W.2d 643 (Mo. 1973).

51. 40 A.D.2d 1005, 338 N.Y.S.2d 778 (1972).

52. See cases cited in notes 213-220 *infra*.

53. 362 Mass. 221, 284 N.E.2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973).

54. *Id.*, 284 N.E.2d at 876.

55. *Id.*, 284 N.E.2d at 876.

56. Moreland Development Co., Inc. v. City of Tulsa, 596 P.2d 1255 (Okla. 1979).

57. Famularo v. Board of County Commissioners of Adams County, 505 P.2d 958 (Colo. 1973).

58. Maple Leaf Investors Inc. v. State Department of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977).

59. Lindquist v. Omaha Realty, Inc., 247 N.W.2d 684 (S.D. 1976).

60. 495 S.W.2d 643 (Mo. 1973).

61. 283 N.W.2d 538 (Minn. 1979).

62. 283 N.W.2d 918 (Minn. 1979).

63. 120 N.J. Super. 164, 293 A.2d 450 (1972).

64. Jefferson County v. Johnson, 333 So.2d 143 (Ala. 1976).

65. 596 P.2d 1255 (Okla. 1979).

66. 270 Md. 652, 313 A.2d 820 (1974).

67. 283 N.W.2d 918 (Minn. 1979).

68. 126 N.J. Super. 200, 313 A.2d 624 (1973).

69. 247 N.W.2d 684 (S.D. 1976).

70. *Id.*, 247 N.W.2d at 686.

71. 563 S.W.2d 239 (Tex. 1978).

72. Frisco Land and Mining Co. v. State, 74 Cal. App.3d 736, 141 Cal. Rptr. 820 (1977).

73. Adams v. North Carolina Dept. of Natural and Economic Resources, 295 N.C. 683, 249 S.E.2d 402 (1978).

74. New York City Housing Authority v. Commissioner of Environmental Conservation Department, 82 Misc.2d 89, 372 N.Y.S.2d 146 (1975).

75. Young Plumbing and Heating Co. v. Iowa Natural Resources Council, 276 N.W.2d 377 (Iowa 1979).

76. Maple Leaf Investors v. State Department of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977).

77. Foreman v. State Department of Natural Resources, 387 N.E.2d 455 (Ind. App. 1979).

78. Usdin v. State Department of Environmental Protection, 173 N.J. Super. 311, 414 A.2d 280 (1980).

79. 270 Md. 652, 313 A.2d 820 (1974).

80. 92 Wash.2d 894, 602 P.2d 1172 (1979).

81. 240 Ga. 177, 240 S.E.2d 241 (1977).

82. Scott v. State ex. rel. State Highway Comm., 23 Ore. App. 99, 541 P.2d 516 (1975).

83. County of Pine v. State Department of Natural Resources, 280 N.W.2d 625 (Minn. 1979).

84. Frisco Land and Mining Co. v. State, 74 Cal. App.3d 736, 141 Cal. Rptr. 820 (1977); Brown v. Frement, 75 Cal. App.3d 141, 142 Cal. Rptr. 46 (1977).

85. Toms River Affiliates v. Department of Environmental Protection, 140 N.J. Super. 135, 355 A.2d 679 (1976).

86. Adams v. North Carolina Department of Natural and Economic Resources, 295 N.C. 683, 249 S.E.2d 402 (1978).

87. Horizon Adirondack Corp. v. State, 88 Misc.2d 619, 388 N.Y.S.2d 235 (1976).

88. Town of Monroe v. Carey, 96 Misc.2d 238, 412 N.Y.S.2d 939 (1977).

89. Turner v. County of Del Norte, 24 C.A.3d 311, 101 Cal. Rptr. 93 (1972).

90. Foreman v. State Department of Natural Resources, 387 N.E.2d 455 (Ind. App. 1979).

91. Young Plumbing and Heating Co. v. Iowa Natural Resources Council, 276 N.W.2d 377 (Iowa 1979).

92. Maple Leaf Investors v. State Department of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977).

93. Krahl v. Nine Mile Creek Watershed District, 283 N.W.2d 538 (Minn. 1979).

94. Subaru of New England, Inc. v. Board of Appeals of Canton, 395 N.E.2d 880 (Mass. App. Ct., 1979).

95. American National Bank and Trust Company of Chicago v. Village of Winfield, 1 Ill. App.3d 376, 274 N.E.2d 144 (1971).

96. Brown v. City of Joliet, 108 Ill. App.2d 230, 247 N.E.2d 47 (1969).

97. Metropolitan St. Louis Sewer District v. Zykan, 495 S.W.2d 643 (Mo. 1973).

98. Hamlin v. Matazzaro, 120 N.J. Super. 164, 293 A.2d 450 (1972).

99. *Id.*

100. 362 Mass. 221, 284 N.E.2d 891 (1972), *cert. denied,* 409 U.S. 1108 (1973).

101. *Id.,* 284 N.E.2d at 896.

102. Dur-Bar Realty Co. v. City of Utica, 57 A.D.2d 51, 394 N.Y.S.2d 913, 918 (1977).

103. Turnpike Realty Co. v. Town of Dedham, 362 Mass. 221, 284 N.E.2d 891, 896 (1972), *cert. denied,* 409 U.S. 1108 (1973).

104. Dur-Bar Realty Co. v. City of Utica, 57 A.D.2d 51, 394 N.Y.S.2d 913, 918 (1977).

105. Beckendorff v. Harris-Galveston Coastal Subsidence District, 558 S.W.2d 75 (Tex. 1977).

106. *Id.,* 558 S.W.2d at 81.

107. Sands Point Harbor, Inc. v. Sullivan, 136 N.J.Super. 436, 346 A.2d 612 (1975); Potomac Sand and Gravel Co. v. Governor of Maryland, 266 Md. 358, 293 A.2d 241 (1972), *cert. denied,* 409 U.S. 1090; J. M. Mills, Inc. v. Murphy, 116 R.I. 54, 352 A.2d 661 (1976).

108. In Re Sports Complex in Hackensack Meadowlands, 62 N.J. 248, 300 A.2d 337 (1973).

109. Maple Leaf Investors v. State Department of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977).

110. Foreman v. State Department of Natural Resources, 387 N.E.2d 455 (Ind. App. 1979).

111. Young Plumbing and Heating Co. v. Iowa Natural Resources Council, 276 N.W.2d 377 (Iowa 1979).

112. A.H. Smith Sand and Gravel Co. v. Department of Natural Resources, 270 Md. 652, 313 A.2d 820 (1974).

113. State v. A. Capuano Bros., Inc., 384 A.2d 610 (R.I. 1978).

114. 24 C.A.3d 311, 101 Cal. Rptr. 93 (1972).

115. 362 Mass. 221, 284 N.E.2d 891 (1972), *cert. denied,* 409 U.S. 1108 (1973).

116. 55 A.D.2d 700, 388 N.Y.S.2d 952, 953 (1976).

117. *Id.*, 388 N.Y.S.2d at 954.

118. Sturdy Homes, Inc. v. Tp. of Redford, 30 Mich. App. 53, 186 N.W.2d 43 (1971).

119. Iowa Natural Resources Council v. Van Zee, 261 Iowa 1287, 158 N.W.2d 111 (1968).

120. 362 Mass. 221, 284 N.E.2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973).

121. *Id.*, 284 N.E.2d at 901.

122. Just v. Marinette County, 56 Wis.2d 7, 201 N.W.2d 761 (1972).

123. 473 F.Supp. 52 (N.D. Miss. 1979).

124. 427 F.Supp. 26 (D. Mass. 1976).

125. 276 N.W.2d 377 (Iowa 1979).

126. 283 N.W.2d 538 (Minn. 1979).

127. 395 N.E.2d 880 (Mass. App. Ct. 1979).

128. Young Plumbing and Heating Co. v. Iowa Natural Resources Council, 276 N.W.2d 377 (Iowa 1979).

129. 243 Ga. 577, 255 S.E.2d 63 (1979), *cert. denied*, 440 U.S. 936 (1979).

130. Subaru of New England, Inc. v. Board of Appeals, 395 N.E.2d 880 (Mass. App. Ct. 1979).

131. 563 S.W.2d 239 (Tex. 1978).

132. *Id.*, 558 S.W.2d 75, at 76 (Tex. Civ. App. 1977).

133. MacGibbon v. Board of Appeals of Duxbury, 340 N.E.2d 487 (Mass. 1976).

134. Pope v. City of Atlanta, 243 Ga. 577, 255 S.E.2d 63 (1979), *cert. denied*, 440 U.S. 936 (1979).

135. Oakwood at Madison, Inc. v. Township of Madison, 117 N.J. Super. 11, 283 A.2d 353 (1971).

136. 270 Md. 652, 313 A.2d 820 (1974).

137. Roberts v. Secretary, Department of Housing and Urban Development, 473 F.Supp. 52 (N.D. Miss. 1979).

138. Young Plumbing and Heating Co. v. Iowa Natural Resources Council, 276 N.W.2d 377 (Iowa 1979).

139. *Id.*, 276 N.W.2d at 389.

140. 242 Ga. 331, 249 S.E.2d 16 (1978).

141. See, e.g., Brown v. City of Joliet, 108 Ill. App.2d 230, 247 N.E.2d 47 (1969); Turnpike Realty Co. v. Town of Dedham, 362 Mass. 221, 284 N.E.2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973); A. H. Smith Sand and Gravel Co. v. Dept. of Water Resources, 270 Md. 652, 313 A.2d 820 (Md. App. 1974); Foreman v. State Department of Natural Resources, 387 N.E.2d 455 (Ind. App. 1979).

142. Young Plumbing and Heating Co. v. Iowa Natural Resources Council, 276 N.W.2d 377 (Iowa 1979).

143. *Id.*, 276 N.W.2d at 383.

144. *Id.*, 276 N.W.2d at 388.

145. *Id.*, 276 N.W.2d at 384.

146. See cases cited in notes 151-166 *infra*.

147. E.g., Turner v. County of Del Norte, 24 C.A.3d 311, 101 Cal. Rptr. 93 (1972); Zisk v. City of Roseville, 127 Cal. Rptr. 896, 56 Cal. App.3d 41 (1976).

148. E.g., Turnpike Realty Co., Inc. v. Town of Dedham, 362 Mass. 221, 284 N.E.2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973); Subaru of New England, Inc. v. Board of Appeals of Canton, 395 N.E.2d 880 (Mass. App. Ct. 1979).

149. E.g., MacGibbon v. Board of Appeals, 340 N.E.2d 487 (Mass. 1976).

150. A. H. Smith Sand and Gravel Co. v. Dept. of Water Resources, 270 Md. 652, 313 A.2d 820, 828 (1974).

151. See, e.g., cases cited in notes 21-28 *supra*.

152. Pope v. City of Atlanta, 242 Ga. 331, 249 S.E.2d 16 (1978).

153. *Id.*, 249 S.E.2d at 18.

154. Just v. Marinette County, 56 Wis.2d 7, 201 N.W.2d 761 (1972).

155. Maple Leaf Investors v. State Department of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977).

156. Turnpike Realty Co. v. Town of Dedham, 362 Mass. 221, 284 N.E.2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973).

157. 57 A.D.2d 51, 394 N.Y.S.2d 913 (1977).

158. Wolfram v. Abbey, 55 A.D.2d 700, 388 N.Y.S.2d 952 (1976).

159. *Id.*, 388 N.Y.S.2d at 953.

160. 340 N.E.2d 487, (Mass. 1976).

161. Pope v. City of Atlanta, 243 Ga. 577, 255 S.E.2d 63 (1979), *cert. denied*, 440 U.S. 936, (1979). The court also held that cumulative impact was one of several considerations in evaluating a permit.

162. 406 A.2d 577 (Pa. Commw. 1979).

163. *Id.*, 406 A.2d at 578.

164. *Id.*, 406 A.2d at 578.

165. 41 N.Y.2d 438, 361 N.E.2d 1028, 393 N.Y.S.2d 379 (1977).

166. *Id.*, 361 N.E.2d at 1033.

167. Scheff v. Tp. of Maple Shade, 149 N.J. Super. 448, 374 A.2d 43, (A.D. 1977).

168. 553 S.W.2d 721 (Mo. 1977).

169. See discussion accompanying notes 221, 222.

170. 98 S.Ct. 2646 (1978).

171. *Id.*, 98 S.Ct. at 2659.

172. 100 S.Ct. 2138 (1980), aff'g 24 Cal.3d 266, 598 P.2d 25 (1979).

173. *Id.*, see 100 S.Ct. at 2142 where this language is cited.

174. *Id.*

175. 101 S.Ct. 1287 (1981).

176. 101 S.Ct. at 1294.

177. 101 S.Ct. at 1307.

178. See discussion in Kusler, "Open Space Zoning: Valid Regulation or Invalid Taking", 57 Minn. L. Rev. 1 (1972).

179. *Id.*; see also note 221 *infra*.

180. E.g., Krahl v. Nine Mile Creek Watershed District, 283 N.W.2d 538 (Minn. 1979); Moskow v. Commissioner of the Dept. of Environmental Management, 427 N.E.2d 750 (Mass. 1981).

181. E.g., Maple Leaf Investors v. State Department of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977); Foreman v. State Department of Natural Resources, 387 N.E.2d 455 (Ind. App. 1979); Kraiser v. Zoning Hearing Bd. of Horsham Tp., 406 A.2d 577 (Pa. Commw. 1979); Krahl v. Nine Mile Creek Watershed District, 283 N.W.2d 538 (Minn. 1979); Turner v. County of Del Norte, 24 C.A.3d 311, 101 Cal. Rptr. 93 (1972).

182. E.g., Turner v. County of Del Norte, 24 C.A.3d 311, 101 Cal. Rptr. 93 (1972); Young Plumbing and Heating Co. v. Iowa Natural Resources Council, 276 N.W.2d 377 (Iowa 1979); Foreman v. State Department of Natural Resources, 387 N.E.2d 455 (Ind. App. 1979).

183. Lorio v. City of Sea Isle, 88 N.J. Super. 506, 212 A.2d 802 (1965). Construction of a sand dune on private property is a taking.

184. E.g., Krahl v. Nine Mile Creek Watershed District, 283 N.W.2d 538 (Minn. 1979); Maple Leaf Investors v. State Department of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977).

185. E.g., Maple Leaf Investors v. State Department of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977); Pope v. City of Atlanta, 240 Ga. 177, 240 S.E.2d 241 (1977).

186. Maple Leaf Investors v. State Department of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977).

187. *Id.*; see also Foreman v. State Department of Natural Resources, 387 N.E.2d 455 (Ind. App. 1979).

188. E.g., Krahl v. Nine Mile Creek Watershed District, 283 N.W.2d 538, (Minn. 1979); Turner v. County of Del Norte, 24 C.A.3d 311, 101 Cal. Rptr. 93 (1972); Subaru of New England, Inc. v. Board of Appeals of Canton, 395 N.E.2d 880 (Mass. App. Ct. 1979).

189. See notes 132, 134, *supra;* Krahl v. Nine Mile Creek Watershed District, 283 N.W.2d 538 (Minn. 1979).

190. Moskow v. Commissioner of the Department of Environmental Management, 427 N.E.2d 750 (Mass. 1981).

191. *Id.*, 427 N.E.2d at 754.

192. E.g., Maple Leaf Investors v. State Department of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977); Young Plumbing and Heating Co. v. Iowa Natural Resources Council, 276 N.W.2d 377 (Iowa 1979).

193. E.g., Spiegle v. Borough of Beach Haven, 116 N.J. Super. 148, 281 A.2d 377 (1971); County of Ramsey v. Stevens, 283 N.W.2d 918 (Minn. 1979).

194. E.g., Turnpike Realty Co. v. Town of Dedham, 362 Mass. 221, 284 N.E.2d 891 (1972), *cert denied,* 409 U.S. 1108 (1973); Turner v. County of Del Norte, 24 C.A.3d 311, 101 Cal. Rptr. 93 (1972). See also cases cited in notes 21-31 *supra.*

195. See cases cited in note 180 *supra.*

196. E.g., Spiegle v. Borough of Beach Haven, 116 N.J. Super. 148, 281 A.2d 377 (1971); Turner v. County of Del Norte, 24 C.A.3d 311, 101 Cal. Rptr. 93 (1972); Foreman v. State Department of Natural Resources 387 N.E.2d 455 (Ind. App. 1979).

197. Just v. Marinette County, 56 Wis.2d 7, 201 N.W.2d 761 (1972).

198. See cases cited in notes 156, 157, *supra.*

199. See Water Resources Council et al., Regulation of Flood Hazard Areas to Reduce Flood Losses, Vol. 2, p. 146, Washington, D.C.: U.S. Government Printing Office. (1972).

200. 657 F.2d 1184 (Ct. Cl. 1981).

201. 56 Wis.2d 7, 201 N.W.2d 761 (1972).

202. *Id.*, 201 N.W.2d at 768.

203. 266 Md. 358, 293 A.2d 241 (1972), *cert. denied*, 409 U.S. 1040 (1972).

204. 136 N.J. Super. 436, 346 A.2d 612 (Super. Ct. App. Div. 1975).

205. County of Pine v. State, Department of Natural Resources, 280 N.W.2d 625 (Minn. 1979).

206. Scott v. State ex. rel. State Highway Comm., 23 Ore. App. 99, 541 P.2d 516 (1975).

207. State v. Superior Court of Orange County, 12 Cal.3d 237, 524 P.2d 1281, 115 Cal. Rptr. 497 (1974).

208. Toms River Affiliates v. Dept. of Environmental Protection, 140 N.J. Super., 355 A.2d 679 (1976).

209. Adams v. North Carolina Dept. of Natural and Economic Resources, 295 N.C. 683, 249 S.E.2d 402 (1978).

210. E.g., Gisler v. County of Madera, 38 Cal. App.3d 303, 112 Cal. Rptr. 919 (1974).

211. Just v. Marinette County, 56 Wis.2d 7, 201 N.W.2d 761 (1972).

212. E.g., State Dept. of Ecology v. Pacesetter Const. Co., 89 Wash.2d 203, 571 P.2d 196 (1977).

213. 283 N.W.2d 918 (Minn. 1979).

214. E.g., Long v. City of Highland Park, 329 Mich. 146, 45 N.W.2d 10 (1950); Kissinger v. City of Los Angeles, 161 Cal. App.2d 454, 327 P.2d 10 (1958).

215. 24 Cal. App.3d 311, 101 Cal. Rptr. 93 (1972)

216. 387 N.E.2d 455 (Ind. App. 1979).

217. 127 Cal. Rptr. 896, 56 Cal. App.3d 41 (1976).

218. Gaebel v. Thornbury Township, Delaware County, 8 Pa. Commw. Ct. 379, 303 A.2d 57 (1973).

219. Krahl v. Nine Mile Creek Watershed District, 283 N.W.2d 538 (Minn. 1979).

220. Kessler v. Town of Shelter Island Planning Board, 40 A.D.2d 1005, 338 N.Y.S.2d 778 (1972).

221. 30 Mich. App. 53, 186 N.W.2d 43 (1971).

222. 1 Ill. App.3d 376, 274 N.E.2d 144 (1971).

223. Lemp v. Town Board of Town of Islip, 90 Misc.2d 360, 394 N.Y.S.2d 517 (1977).

224. United States v. Sponenbarger, 308 U.S. 256, (1939). B Amusement Company v. United States, 180 F.Supp. 386, (Ct.Cl. 1960).

225. See generally Oahe Conservancy Sub-District v. Alexander, 493 F.Supp. 1294 (D. South Dakota 1980).

226. Barnes v. United States, 538 F.2d 865 (Ct.Cl. 1976).

227. 48 Ohio St.2d 334, 358 N.E.2d 598 (1976). See also: Myotte v. Village of Mayfield, 54 Ohio App.2d 97, 375 N.E.2d 816 (1977). Court held that a municipality which issued a building permit for an industrial complex and partially improved a drainage system, but not an appellant's land, was liable for increased run-off.

228. E.g., Myotte v. Village of Mayfield, 54 Ohio App.2d 97, 375 N.E.2d 816 (1977); Sheffet v. County of Los Angeles, 3 Cal. App.3d 720, 84 Cal. Rptr. 11 (1970).

229. 24 Cal. App.3d 311, 101 Cal. Rptr. 93 (1972).

230. 283 N.W.2d 918 (Minn. 1979).

231. 8 Pa. Commw. Ct. 379, 303 A.2d 57 (1973).

232. 453 F.Supp. 1025 (D.D.C. 1978), aff'd 598 F.2d 311 (D.C. Cir. 1979), *cert. denied*, 100 S.Ct. 267 (1979).

233. 520 F.2d 11 (1975) on remand, 420 F.Supp. 221 (M.D. Pa. 1976).

234. 473 F.Supp. 52 (N.D. Miss. 1979).

235. 427 F.Supp. 26 (D. Mass. 1976).

236. Jeremy & Sons, Inc. v. Commercial Union Assurance Companies, 398 F.Supp. 374 (N.D. Ohio 1975).

237. Segal v. Great American Insurance Co., 390 F.Supp. 1074 (E.D.N.Y. 1974).

238. Mason v. National Flood Insurers Association, 361 F.Supp. 939 (D. Hawaii 1973).

239. Jackson v. National Flood Insurers Association, 398 F.Supp. 1383 (S.D. Texas 1974).

240. West v. Harris, 573 F.2d 873 (5th Cir. 1978), *cert. denied*, 440 U.S. 946 (1979); Zabel v. Tabb, 430 F.2d 199 (5th Cir. 1970), *cert. denied*, 401 U.S. 910 (1971).

241. Presley v. National Flood Insurers Association, 399 F.Supp. 1242 (E.D. Mo. 1975); Summers v. Harris, 573 F.2d 869 (5th Cir. 1978).

242. Horeftis v. National Flood Insurers Association, 437 F.Supp. 794 (E.D. Mich. 1977).

243. 479 F.Supp. 3 (M.D. Penn. 1978).

244. Nunnery v. Insurance Companies, Members of National Flood Insurers Association, 414 F.Supp. 973 (N.D. Miss. 1976); Horeftis v. National Flood Insurers Association, 437 F.Supp. 794 (E.D. Mich. 1977).

245. Davis v. Aetna Casualty and Surety Co., 329 So.2d 868, (Ct. App. La. 1976); Bains v. Hartford Fire Insurance Co., 440 F.Supp. 15 (N.D. Ga. 1977).

246. Davis v. Aetna Casualty and Surety Company, 329 So.2d 868, (Ct. App. La. 1976); Bains v. Hartford Fire Insurance Co., 440 F.Supp. 15 (N.D. Ga. 1977); Mason v. National Flood Insurers Association, 431 F.Supp. 1021 (N.D. Okla. 1977); Burrell v. Turner Corp., 431 F.Supp. 1018 (N.D. Okla. 1977); Drewett v. Aetna Casualty and Surety Co., 539 F.2d 496 (5th Cir. 1976).

247. National Flood Insurers Association v. Harris, 444 F.Supp. 969 (D.D.C. 1977).

A. H. Smith Sand and Gravel Co. v. Dept. of Water Resources, 270 Md. 652, 313 A.2d 820 (1974). Court upheld order of Maryland Department of Natural Resources prohibiting filling on land within 50-year floodplain but redefined floodplain boundaries in light of new flood information.

American Dredging Co. v. State Dept. of Environmental Protection, 169 N.J. Super. 18, 404 A.2d (1979). Court held an entire 2,500-acre tract which included a floodplain/wetland area was to be viewed in its entirety in determining whether a wetland restriction on 80 acres was reasonable.

American National Bank and Trust Co. v. Village of Winfield, 1 Ill. App.3d 376, 274 N.E.2d 144 (1971). Court sanctioned general concept of floodplain regulations but held that regulations limiting a flood area to single family use to preserve flood storage and for recharge area were invalid because of the costs of individual flood protection and conflicting testimony concerning the need for such single family use.

Bauer v. City of Wheat Ridge, 513 P.2d 203 (Colo. 1973). Court held city could not deny special exception permit for apartment buildings in floodplain where proposed building met all floodplain ordinances and general zoning criteria.

Beckendorff v. Harris-Galveston Coastal Subsidence District, 558 S.W.2d 75 Tex. 1977). Court held State Coastal Subsidence Act requiring permits for water withdrawal constitutional and that purpose of statute is not only to control subsidence but also to control flooding and inundation.

Cappture Realty Corp. v. Board of Adjustment, 126 N.J. Super. 200, 313 A.2d 624 (1973). Court upheld interim zoning ordinance declaring a moratorium on construction in flood-prone area unless special exception permits were obtained.

Cinelli v. Whitfield Transportation, Inc., 83 N.M. 205, 490 P.2d 463 (1971). Court held that board of county commissioners may have committed error in refusing to consider flood or drainage problems which could result from issuance of a special use permit.

Citizens for Sensible Zoning, Inc. v. Dept. of Natural Resources, 90 Wis.2d 804, 280 N.W.2d (1974). Court held that adoption of a floodplain zoning ordinance by the Wisconsin Department of Natural Resources was subject to the Wisconsin Administrative Review Act.

County of Ramsey v. Stevens, 283 N.W.2d 918 (Minn. 1979). Court indirectly but strongly endorsed Minnesota state floodplain management statute requiring communities on a list prepared by the Commissioner of Natural Resources to adopt floodplain regulations in order to qualify for the National Flood Insurance Program. The court sustained the decision of a lower court ordering the city council of Lilydale, Minnesota to adopt regulations within 24 hours.

Creton v. Board of County Commissioners, 204 Kan. 782, 466 P.2d 263 (1970). Court sustained denial of permit for mobile home park in an industrial area subject to odor nuisances and flooding.

Dur-Bar Realty Co. v. City of Utica, 57 A.D.2d 51, 394 N.Y.S.2d 913. Court held that floodplain zoning ordinance permitting no use of right while requiring special permits for specified uses and enumerating criteria for issuance of permits did not constitute an improper delegation of legislative authority to zoning boards of appeal or a taking of property.

Falcone v. Zoning Board of Appeals, 389 N.E.2d 1032 (Mass. 1979). Court held that zoning board of appeals did not exceed its authority in denying subdivision application for failure to comply with floodplain ordinance. Ordinance had been adopted after initial plat approval but before building permit was submitted.

Famularo v. Board of County Commissioners, 505 P.2d 958 (Colo. 1973). Court held that counties may establish flood control districts by resolution under state statute.

Foreman v. State Dept. of Natural Resources, 387 N.E.2d 455 (Ind. App. 1979). Court sustained an injunction prohibiting defendants from making deposits on a floodway and compelling removal of deposits previously made in violation of a statute requiring a permit from a state agency for such deposits. The court refused to consider this a taking of property although the state agency had the statutory power to acquire flood easements.

Gaebel v. Thornbury Township, Delaware County, 8 Pa. Commw. Ct. 379, 303 A.2d 57 (1973). Court held that proper approach for contesting validity of floodplain zoning was to challenge its constitutionality as an exercise of police power rather than through inverse condemnation; but court did not pass upon the basic constitutionality.

Green's Bottom Sportsmen, Inc. v. St. Charles County Board of Adjustment, 553 S.W.2d 721 (Mo. 1977). Court held that zoning board of adjustment could revoke a permit incorrectly issued by zoning commission for a gun club on a 49-acre tract of floodplain near the Missouri River where county floodplain regulations did not permit such uses.

Hamlin v. Matarazzo, 120 N.J. Super. 164, 293 A.2d 450 (1972). Court held that state statutes require a planning board to evaluate and make findings as to the impact of a proposed subdivision upon drainage and erosion before giving tentative plat approval.

Holt-Lock, Inc. v. Zoning and Planning Commission, 161 Conn. 182, 286 A.2d 299 (1971). Court held that landowner could not claim a "taking" of property due to refusal of a permit for sand and gravel operations in a floodplain until he had exhausted administrative remedies.

Jefferson County v. Johnson, 333 So.2d 143 (Ala. 1976). Court held that county building code and a resolution adopted by the county to qualify for the National Flood Insurance Program did not authorize the county engineer to deny a permit for construction in a floodway area.

Just v. Marinette County, 56 Wis.2d 7, 201 N.W.2d 761 (1972). Court upheld state-supervised shoreland zoning for a wetland area despite very restrictive nature of controls on the theory that a landowner has no inherent right to destroy the natural suitability of the land. Note, this is not a floodplain zoning case per se but involves somewhat analogous circumstances.

Kessler v. Town of Shelter Island Planning Board, 40 A.D.2d 1005, 338 N.Y.S.2d 778 (1972). Court held that a planning board's refusal to approve subdivision subject to flooding was invalid in light of the willingness of the subdivider to fill the area to protect against flooding as required by the planning board and the intention of the planning board to preserve the entire subdivision area for recreational purposes.

Kraiser v. Zoning Hearing Board, 406 A.2d 577 (Pa. Commw. Ct. 1979). Court upheld decision of zoning hearing board of township denying a variance for a duplex residential dwelling in a 100-year floodplain conservation zone based upon substantial evidence of drainage and flooding problems and the possibility of increasing hazard to buildings both on and away from the zoned area.

Krahl v. Nine Mile Creek Watershed District, 283 N.W.2d 538 (Minn. 1979). The Minnesota Supreme Court held that watershed district's floodplain encroachment regulations affecting 2/3 of an 11-acre tract were not an unconstitutional taking of property.

Lemp v. Town Board, 90 Misc.2d 360, 394 N.Y.S.2d 517 (1977). Court held denial of a permit for a dwelling on a dune might be a "taking of property".

Lindquist v. Omaha Realty, Inc., 247 N.W.2d 684 (S.D. 1976). Court held that resolution of the city council of Rapid City prohibiting the issuance of building permits for one block on either side of Rapid Creek after the devastating flood of June 12, 1972, until a study was completed by the planning commission, was a valid exercise of police powers and not a taking.

MacGibbon v. Board of Appeals, 340 N.E.2d 487 (Mass. 1976). Court held that a permit to excavate and fill portions of a coastal marshland had been invalidly denied based upon erosion and flood arguments due to lack of evidence of such problems.

Maple Leaf Investors, Inc. v. State Dept. of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977). Court upheld a denial of a state permit for proposed houses in the floodway of the Cedar River. The court held that both the statute and regulations adopted pursuant to them were valid.

Metropolitan St. Louis Sewer District v. Zykan, 495 S.W.2d 643 (Mo. 1973). Court upheld regulations of the Metropolitan Sewer District requiring construction of drainage facilities in subdivisions and ordered both specific performance and payment of damages.

Moreland Development Co. v. City of Tulsa, 596 P.2d 1255 (Okla. 1979). Court held that city floodplain zoning was invalid because the city failed to follow statutory procedures.

Moskow v. Commissioner of the Dept. of Environmental Management, 427 N.E.2d 750 (Mass. 1981). Court upheld a state restrictive order for a wetland area important in preventing floods in the Charles River Watershed against claims of taking.

National Merritt, Inc. v. Weist, 41 N.Y.2d 438, 393 N.Y.S.2d 379, 361 N.E.2d 1028 (1977). Court held that flooding and drainage problems that would result from shopping center were proper considerations in evaluating variance application.

Parkway Mall Associates v. Water Policy and Supply Council, 157 N.J. Super. 169, 384 A.2d 857 (1978). Court held that the Water Policy and Supply Council had authority to impose three-year time limitation to comply with requirements of conditional stream encroachment permit.

Pima County v. Cardi, 123 Ariz. 424, 600 P.2d 37 (1979). Court held that no permit was required under Floodplain Management Act for combination of sand and gravel operation on floodplain where such use existed on or before enactment of the Act, except on a showing that waters were being diverted, retarded or obstructed and that such conduct created hazards.

Pope v. City of Atlanta, 240 Ga. 177, 240 S.E.2d 241 (1977). Court held the Georgia River Protection Act, designed in part to address flooding and erosion problems, served valid objectives and did not violate home rule powers.

Pope v. City of Atlanta, 242 Ga. 331, 249 S.E.2d 16 (1978). Court again endorsed the River Protection Act but this time more specifically addressed the application of standards to a special permit.

Pope v. City of Atlanta, 243 Ga. 577, 255 S.E.2d 63 (1979), *cert. denied*, 440 U.S. 936 (1979). The Georgia Supreme Court again endorsed the River Protection Act, holding the state justified in considering the cumulative effects of development when it makes land use plans. However, it held that denial of a permit for a tennis court based upon an argument of cumulative effect on flooding was invalid because of insufficient evidence and because too much weight had been given to cumulative effect.

Rains v. Washington Dept. of Fisheries, 89 Wash.2d 740, 575 P.2d 1057 (1978). Court held that landowner had no claim of inverse condemnation against the state for denial of a permit to rechannel the bed of a creek resulting in further flooding.

S. Kemble Fisher Realty Trust v. Board of Appeals, Mass. App. Ct. Adv. Sh. (1980) 637. Court upheld a board of appeals denial of permit to fill land in a Flood Plain Conservancy District due to increased runoff and possible stagnation.

Scheff v. Maple Shade Tp., 149 N.J. Super. 448, 374 A.2d 43 (1977). Court held that a variance was justified for liquified petroleum gas tanks on pilings in a wetland subject to periodic flooding.

Solomon v. Whitemarsh Tp., 92 Montgomery Co. L.R. 112 (Pa. 1970). Court held that floodplain zoning ordinance was validly designed to promote public health, safety, and welfare.

Spiegle v. Borough of Beach Haven, 116 N.J. 148, 281 A.2d 377 (1971). Court found that differing beach setbacks were needed for coastal property and held that certain setbacks were valid and others not.

Sturdy Homes, Inc. v. Tp. of Redford, 30 Mich. App. 53, 186 N.W.2d 43 (1971). Court held that floodplain zoning ordinance which prohibited dwellings was unreasonable and a taking as applied to plaintiff's land in part because there was no evidence that the specific site was subject to flooding.

State v. Crown Zellerbach Corp., 92 Wash.2d 894, 602 P.2d 1172 (1979). Court upheld state permit requirements for hydraulic projects and state conditions attached to permits for such projects.

State v. Capuano Bros., Inc., 384 A.2d 610 (R.I. 1978). Court held that two landowners prosecuted under the inland wetlands act (under which wetlands were defined to include the 50-year floodplain) received adequate notice that they were in fact located in wetlands and that the regulations did not take property.

Subaru of New England, Inc. v. Board of Appeals, 395 N.E.2d 880 (Mass. App. Ct. 1979). Court upheld denial of permit for construction in flood district based upon possible loss of flood storage and subsequent increase in flood damages.

Town of Salem v. Kenosha, 57 Wis.2d 432, 204 N.W.2d 467 (1973). Court held that a county may adopt a shoreland and floodland ordinance to protect navigable waters and to protect public health, safety and general welfare.

Turner v. County of Del Norte, 24 Cal. App.3d 311, 101 Cal. Rptr. 93 (1972). Court held county floodplain zoning ordinance limiting area subject to severe flooding to parks, recreation and agricultural uses was valid exercise of police power rather than a taking despite the fact that area had been zoned in part to comply with Corps of Engineers requirements for construction of flood control works.

Turner v. Town of Walpole, 409 N.E.2d 807 (Mass. App. Ct. 1980). Court held that restrictive floodplain zoning did not confiscate private property.

Turnpike Realty Co. v. Town of Dedham, 362 Mass. 221, 284 N.E.2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973). Court upheld zoning regulations essentially limiting the floodplain to open space uses despite testimony that the land was worth $431,000 before regulations and $53,000 after regulations and evidence that several hills above the regulatory flood elevation had been included in the floodplain district.

Usdin v. State Dept. of Environmental Protection, 173 N.J. Super. 311, 414 A.2d 280 (1980). Court upheld state floodway regulations prohibiting structures for human occupancy, storage of materials, and depositing solid wastes.

Wolfram v. Abbey, 55 A.D.2d 700, 388 N.Y.S.2d 952 (1976). Court upheld a floodplain zoning ordinance which required that for areas determined by the Ordinance Administrator as subject to flood conditions the "elevation of the lowest floor to be used for any dwelling purpose in any residential structure shall be equal to or higher than the elevation of the high water level as determined by the enforcement officer in accordance with previous flood records."

Wright v. Town of Shirley, 359 N.E.2d 64 (Mass. 1977). Court held that storage of tires adjacent to stream did not violate statute governing removal, fill, dredging or altering land bordering waters.

Young Plumbing and Heating Co. v. Iowa Natural Resources Council, 276 N.W.2d 377 (Iowa 1979). Court sustained denial of a state permit for a condominium in a floodway where such a structure would have raised the level of flood waters on property on the other side of the creek. The concept of "equal degree of encroachment" was strongly endorsed as well as efforts to anticipate future watershed conditions.

Zisk v. City of Roseville, 56 Cal. App.3d 41, 127 Cal. Rptr. 896 (1976). Court held that no taking occurred when Roseville adopted a "park and streambed element" to its general plan recommending acquisition of selected floodplain areas and subsequently adopted a floodway and flood fringe ordinance controlling this area.

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