Constitutional Limitations on Emission Quotas
As an Air Pollution Control Strategy*

Daniel R. Mandelker**
Felice Taub***

INTRODUCTION

Air pollution from new industrial sources presents difficult air quality control problems. Federal air quality legislation applies emission controls to new industrial polluters, subject to the further requirement that national ambient air quality standards are not violated.¹ These controls, although often effective at the regional level, may not prevent local violations of the standards. Local violations, known as "hot spots," occur where adjacent polluters raise local air pollution above permitted levels. Emission quotas have been suggested as a supplemental strategy to achieve air quality goals more uniformly.²

Copyright © 1979 by Ecology Law Quarterly.

* This Article extends an analysis of the constitutional issues in emission quotas which appeared in Mandelker & Sherry, Emission Quota Strategies as an Air Pollution Control Technique, 5 Ecology L.Q. 401 (1976). Necessarily, some of the descriptive material and analysis has been repeated. Most of the work for this Article was done under Contract No. 31-309-38-4077 with Argonne National Laboratory, Argonne, Ill., as part of a study of Emission Density Zoning and other emission quotas by Argonne National Laboratory under Contract No. EPA-IAG-D7-01157 with the U.S. Environmental Protection Agency. The authors wish to thank Alan Cohen, Argonne National Laboratory, and John Robson, Environmental Protection Agency, for their helpful comments on this Article. The opinions and conclusions expressed, however, are the authors' and are not necessarily those of the Environmental Protection Agency or Argonne National Laboratory. The Article is a revision of the authors' contribution to M. Jaffe, D. Mandelker, W. Thomas, D. Wafer & F. Taub, Legal Issues of Emission Density Zoning (1979) (American Planning Ass'n).

The Board of Editors would like to thank Peter Sklarew for his editorial assistance with this Article.

** Stamper Professor of Law, Washington University.

*** J.D., M.S.W. 1979, Washington University.


The emission quota attains this objective by taking advantage of geographical and meteorological conditions that affect the relationship between emissions and air quality. Available emissions are assigned to designated land areas to avoid hot spots. New industrial development is permitted within an area until available emissions are exhausted.

Constitutional objections to the administration of emission quotas may arise when the quota is exhausted, thus foreclosing additional industrial development. Since emission quotas are adopted and administered under the police power, compensation need not be paid to a landowner whose industrial development is disapproved under the quota. A landowner can object that land has been "taken" without due process if no reasonable use of the land remains or the allocation of

3. N. Kron, A. Cohen & L. Mele, Emission Density Zoning Guidebook: A Technical Guide to Maintaining Air Quality Standards Through Land-Use-Based Emission Limits 1 (1978) [Argonne Nat'l Laboratory, EPA Rep. No. 450/3-78-048] [hereinafter cited as ANL]. This report, a companion technical document to the report on which this Article is based, describes the computer linear programming techniques through which the emission quota is determined and emission limits assigned to designated land areas.

New industrial sources of air pollution in a particular area must comply with the emission limits assigned to that area. An alternative emission quota strategy could assign emission limits directly to new stationary sources. Although emission quotas could be applied to all stationary sources, the ANL Guidebook limits them to new industrial sources emitting sulfur dioxide and particulates, the pollutants most easily controlled by the quota technique. *Id.* at 11.

4. The U.S. Environmental Protection Agency (EPA) continues to indicate interest in emission quotas and particularly Emission Density Zoning, see text accompanying notes 15-17 infra, as a method of implementing air quality control requirements under the Clean Air Act. One regulatory program required under the Act mandates state plans for the regulation of new stationary sources of air pollution in those areas, called nondegradation areas, in which the air is cleaner than the national standards require. 1977 Amendments, §§ 160-169, 42 U.S.C.A. §§ 7470-7479 (West Supp. 1978). The Clean Air Act specifies additional increments of air pollution allowable in these areas until the increments are exhausted. This program is similar to the emission quota program described in the text. The EPA has encouraged states to consider various methods for allocating emissions in nondegradation areas, including Emission Density Zoning. 43 Fed. Reg. 26,380, 26,381 (1978). It is not clear whether EPA intends to limit states to the Emission Density Zoning technique described in this Article or whether any type of emission quota is acceptable.

In addition, the EPA has funded Air Quality Demonstration Programs in several cities, [1979] 9 *ENVIR. REP.* (BNA) 2034, to explore innovative approaches to achieving air quality standards without jeopardizing a municipality's ability to attract and retain industry. Emission Density Zoning is one of the control techniques the EPA has suggested. 43 Fed. Reg. 38,926, 38,928 (1978).


6. The fifth amendment provides that "private property [shall not] be taken for public use, without just compensation." U.S. CONST. amend. V. This requirement is made applicable to the states through the fourteenth amendment. Chicago B. & Q.R.R. v. Chicago, 166
emission limits among competing claimants violates equal protection.\(^7\)

A successful equal protection challenge would have to demonstrate a violation of the relaxed rational relationship standard usually applied to governmental regulations affecting economic interests.\(^8\) Under this standard, a court will uphold the regulation if it finds a rational basis for the method of distribution chosen.\(^9\)

U.S. 226, 235-41 (1897). The fourteenth amendment provides that no state shall "deprive any persons of life, liberty, or property without due process of law." U.S. CONST. amend. XIV.


Although courts often state that property is "taken" when it is excessively restricted by a land use regulation, this statement does not imply that compensation must be paid. The usual judicial remedy is to set aside the unconstitutional land use regulation. See Fred F. French Inv. Co. v. City of New York, 39 N.Y.2d 587, 593-94, 350 N.E.2d 381, 385, 385 N.Y.S.2d 5, 8, cert. denied and appeal dismissed, 429 U.S. 990 (1976).

7. U.S. CONST. amend. XIV, § 1.


State courts that are more protective of traditional property rights, see note 122 infra, might excuse developers from compliance when the quota causes a substantial decrease in property values. See notes 34-47 infra and accompanying text. They may also apply stricter equal protection standards to emission allocation methods to insure that the policies underlying equal protection are satisfied. See notes 119-24 infra and accompanying text. Nor are state constitutional standards of due process and equal protection automatically preempted by federal approval of State Implementation Plans. Since Congress has broad power to preempt state law generally, the courts will not infer preemption "unless that was the clear and manifest purpose of Congress." Ray v. Atlantic Richfield Co., 435 U.S. 151, 157 (1978).

The Clean Air Act does not reflect clear congressional intention to intrude on state judicial power regarding conflicts between state implementation strategies and state constitutional provisions. Instead, the Act reflects "an elaborate form of cooperative federalism in which both the Federal government and the States are assigned vital roles." Brown v. Environmental Protection Agency, 521 F.2d 827, 835 (9th Cir. 1975), vacated and remanded, 431 U.S. 99 (1977). Within this scheme, states are encouraged to devise State Implementation Plans to achieve air quality standards set by the EPA. 1977 Amendments, § 110(a)(1), 42 U.S.C.A. § 7410(a)(1) (West Supp. 1978). The EPA Administrator must approve these plans provided they are adopted after notice and hearing and satisfy several criteria related to insuring achievement of the air quality standards. Id. § 110(a)(2), 42 U.S.C.A. § 7410(a)(2).
This Article examines the strength of these constitutional objections to the implementation of emission quotas. It reviews the basis for an emission quota strategy, describes three types of emission quotas that show promise, and considers due process and equal protection objections to each of these alternatives. It concludes that a carefully designed and administered quota should be safe from constitutional attack.

I

THE EMISSION QUOTA IDEA

The emission quota in this discussion applies throughout an Air Quality Control Region designated under the Federal Clean Air Act. Existing levels of air pollution provide a baseline to which the quota affords additional pollution increments. The location of future industrial development is determined by coordinating the industrial use designations in local zoning ordinances with the assignment of emission limits to each parcel of land zoned for industrial use. The quota complements zoning determinations by maximizing industrial emissions subject to the constraint that national air quality standards be met and maintained.

Under section 110(c), the Administrator can promulgate his own plan if a state fails to adopt a satisfactory one. Id. § 110(c), 42 U.S.C.A. § 7410(c). Section 116 allows the states to enforce regulations more stringent than those set forth in the Act, but it fails even to suggest that State Implementation Plans should supersede other state laws. See id. § 116, 42 U.S.C.A. § 7416.

10. Id. § 107, 42 U.S.C.A. § 7407. Emission quotas as envisaged here could not be applied to air quality control regions that presently do not meet the national air quality standards. The quota is designed to allocate emissions among new polluters in the region so that the national standards will be met once the quota has been exhausted. The quota is also useful in maintaining air quality standards once they have been met by indicating acceptable allocations of additional increments of pollution resulting from improvements in existing levels.

11. ANL, supra note 3, at 11. Problems arise in handling existing industrial polluters whose emissions exceed the applicable quota. These polluters' activities may be accepted as nonconforming uses and allowed to remain, although a state may require an immediate reduction in their emissions through its State Implementation Plan in order to meet the national standards. See 1977 Amendments, § 110, 42 U.S.C.A. § 7410 (West Supp. 1978). Alternatively, nonconforming polluters may be gradually required to conform to emission quota limits.

12. As explained in Mandelker & Sherry, supra note 2, at 405, the determination of maximum total emissions allowed in each subarea of an air quality control region is basic to an emission quota strategy. Since the method used to determine the emission quota may assign excess and unusable emissions to subareas, see F. Benesh, P. McLellan, M. Mills & R. Patterson, Emission Density Zoning 47 (EPA Rep. No. 450/3-77-006, 1977) [hereinafter cited as Benesh], the model sets a limit on the quota that may be assigned in these subareas.

13. As an alternative, the quota can be based on local growth projections for industrial use from local land use plans. See Benesh, supra note 12, at 20. This alternative presents difficulties because land use plans do not always map future locations for industrial use and may vary among jurisdictions in scope and detail. Emission quotas may also be used to reinforce the land use and environmental goals of the local land use plan. See id. at 31-32.
Although several quota allocation techniques may be consistent with the general emission quota strategy,^4 Emission Density Zoning (EDZ) implements this strategy most directly by assigning emission limits to land in industrially zoned areas on a per acre, per unit time basis. These limits are usually set on an hourly basis, but may be averaged over daily or monthly periods. For example, an EDZ quota may limit the amount of particulate matter a new industrial source may emit each day for each acre on which the site is located. A developer violating the quota may achieve compliance with the quota by reducing emissions, acquiring enough land to meet the emission quota limit,^6 or adopting both strategies.\^7

A second variant, the Jurisdictional Emission Quota (JEQ), aggregates the emission limits assigned to each unit of land for each local government subject to the quota. Each local government then allocates its quota to industrial uses, usually through the designations set forth in the zoning ordinance. Alternatively, the state air quality agency could administer this quota.

A third variant of the emission quota, the Floating Zone Emission Quota (FZEQ), uses a different method for calculating the land area to which the quota is applied. When a developer seeks approval of a new industrial source of pollution, the governmental agency charged with administering the quota determines the total emissions to be assigned to the land within a specified radius of the new source.\^8 This limit, less emissions from existing sources, is the emission quota applicable to the new source.\^9 The size of the radius may vary depending upon the type

---

^4. For a more detailed discussion of emission quota strategies, see Mandelker & Sherry, supra note 2, at 405-10.
^5. The Guidebook sets emission limits in metric terms (grams per second per hectare). ANL, supra note 3, at 2-4.
^6. A new industrial source emitting double the allotted amount could comply with the EDZ limit by acquiring twice as much land.
^7. The Clean Air Act also provides an emission offset alternative under which new stationary sources negotiate for the purchase of emission rights from existing polluters that have reduced their emissions. See 1977 Amendments, § 173, 42 U.S.C.A. § 7503 (West Supp. 1978). This option is available only in air quality regions not meeting the national air quality standards, to which an emission quota could not easily be applied. The statute does not prohibit the purchase of emission rights in regions that presently meet the air quality standards, however. Instead of acquiring adjacent land, a polluter might attempt to purchase "pollution easements."
^8. ANL, supra note 3, at 203.
^9. Id. at 200. Problems of implementation may arise if two or more industrial polluters are so close together that the areas from which their emission limits are calculated overlap. In this situation some method must be found for apportioning available emission rights among these polluters. See id. at 202. Problems may also arise when the area within which the FZEQ is applied overlaps more than one local governmental jurisdiction. This possibility is likely to occur when local governments are small and numerous, a typical situation in many metropolitan regions in which air quality problems are severe. Effective imple-
of pollutant, the topography and climate, and other factors. It must be uniformly applied throughout the area covered by the quota.

Because the FZEQ is applied as each new source seeks approval, it may require a similar zoning technique. One such technique, the floating zone, does not contemplate advance industrial zoning. The floating zone ordinance, administered on a case-by-case basis, provides criteria for approving industrial development. The municipality maps industrial zones as it approves the individual applications.

The following sections consider constitutional objections to the administration of these emission quota variants. JEQ and FZEQ programs raise similar due process problems, which are considered first. Attention is then directed to the EDZ model. Equal protection problems presented by these strategies are considered last.22

II

THE TAKING ISSUE UNDER JURISDICTIONAL AND FLOATING ZONE EMISSION QUOTAS

The due process problems that can arise when new industrial development exhausts the quota under JEQ or FZEQ are illustrated by the following “worst case” hypothetical:

Assume a heavily developed industrial area has at its center one undeveloped parcel. The appropriate agency refuses to approve an application of the FZEQ in this setting may require that it be administered by a regional governmental agency.

To date, only Jefferson County, Kentucky (Louisville metropolitan area) has used the FZEQ. Mandelker & Sherry, supra note 2, at 412-15. The continued use of the quota in this area presently is being reviewed to determine whether it is consistent with the Clean Air Act Amendments of 1977. Telephone interview with John Tate, Administrative Assistant, Air Pollution Control District of Jefferson County (Oct. 27, 1978). The emission offset policy may be an adequate substitute. See note 17 supra.

A floating zone is adopted in two stages. First, text providing for the district is included in the zoning ordinance, but no zones are mapped. Second, the floating zone is mapped following a developer’s application. In Williams, American Land Planning Law § 28.02 (1974). The use of the floating zone for industrial zoning was approved in the leading case of Huff v. Board of Zoning Appeals, 214 Md. 48, 133 A.2d 83 (1957). See also Beall v. Montgomery County Council, 240 Md. 77, 212 A.2d 751 (1965); Rodgers v. Village of Tarrytown, 302 N.Y. 115, 96 N.E.2d 731 (1951). See also generally Mandelker, Delegation of Power and Function in Zoning Administration, 1963 Wash. U. L.Q. 60, 89-97.

A fourth emission quota variant, the District Emission Quota, is described in Mandelker & Sherry, supra note 2, at 407-08. This quota is assigned to districts with fixed boundaries within municipalities. These districts would have the same boundaries as zoning districts for industrial uses.

Equal protection objections to the manner of distributing available emissions under an emission quota do not arise under EDZ because the emissions available to each tract of land covered by the quota do not vary over time. In other words, development by one landowner does not foreclose development by another; permissible emissions are proportional to land purchased. Due process objections may arise under this variant if the amount of land the developer must assemble would not otherwise have been required for its intended use. See text accompanying notes 98-115 infra.
tion for industrial development on this parcel because the quota has been exhausted. Assume further that there is no reasonable alternative use for this land.

Although a universally agreeable taking doctrine to test the constitutionality of this restriction is difficult to define, the issues raised by the hypothetical example can help clarify possible due process objections.

A. Factors Affecting Judicial Review

Emission quotas may enjoy the easy constitutional acceptance of health-related controls, or they may be examined more closely for their impact on land development. Health-related regulations usually do not affect land use directly, and their health-related objectives gain a ready constitutional acceptance without noticeable inquiry into costs of compliance. Because air quality controls, including controls on emissions, also serve a health objective, they should enjoy the same judicial deference. Courts take a different perspective, however, when considering regulatory programs directly affecting land use. Even though objectives served by these programs generally receive judicial acceptance, a court may hold the restrictions unconstitutional if their impact is too severe. Emission quotas are a regulatory hybrid whose character is difficult to specify under taking doctrine. They are structured to achieve the health-related objectives of the national ambient air quality standards and incidentally restrict new development.

An important federal court of appeals case, South Terminal, Inc. v. EPA, suggests one resolution of this characterization problem. The court upheld a Boston transportation control plan which included a ban on additional on-site parking facilities. The plan eliminated approximately 1100 additional parking spaces at Logan International Airport, arguably confiscating parking revenues without specifying an alternative use for the land. The court refused to find a taking. It placed a heavy emphasis on the role of the plan in meeting air quality

23. As the United States Supreme Court has pointed out recently, the contours of this doctrine necessarily have been left open. Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 123-24 (1978). For a review of taking objections to land use regulation, see Comment, Regulation of Land Use: From Magna Carta to a Just Formulation, 23 U.C.L.A. L. Rev. 904 (1976) [hereinafter cited as From Magna Carta].


25. See text accompanying notes 34-40 infra.

26. 504 F.2d 646 (1st Cir. 1974).

standards, recognizing that Congress intended to force compliance with these standards "even if the costs were great." 28 It added that "[m]inimum public health requirements are often, perhaps usually, set without consideration of other economic impact." 29 The court reiterated the rule that a taking does not occur if some reasonable use is allowed on the property: "The takings clause is ordinarily not offended by regulation of uses, even though the regulation may severely or even drastically affect the value of the land or real property." 30

South Terminal carries important implications for the constitutionality of emission quotas. Like the transportation control plan considered in that case, an emission quota also may impose severe land use restrictions. The following discussion analyzes objections to emission quotas under the traditional taking doctrine applied to land use regulation. As South Terminal suggests, however, an emission quota may enjoy a more favorable judicial reception because of its health-related link to air quality. 31

Taking objections to emission quotas may also be supported by the distinction between land use restrictions imposed under these quotas and land use restrictions in zoning ordinances. Zoning enjoys what Justice Holmes called an "average reciprocity of advantage." 32 Land restricted under a zoning ordinance suffers the burden of the restriction, but also enjoys the advantage that all land within the district is equally restricted. The average reciprocity of advantage conferred by zoning mitigates the restrictive effect of the regulation because burdens are offset by compensating benefits. In contrast, no comparable offsetting land use benefits attach to land use restrictions imposed by JEQ and FZEQ. No reciprocity of advantage is gained when a landowner is

28. 504 F.2d at 675.
29. Id.
30. Id. at 678.
31. Due process and equal protection problems also arise under provisions of the Federal Clean Air Act governing industrial polluters. For example, new industrial sources of pollution may be approved under the Act until additional emissions would exceed national air quality standards. 1977 Amendments, § 110(a)(2)(I), 42 U.S.C.A. § 7410(a)(2)(I) (West Supp. 1978). In addition, the Act provides for limited increments of air pollution in so-called nondegradation areas in which the air quality surpasses the national standards. Id. §§ 160-169, 42 U.S.C.A. §§ 7470-7479. In either situation, approval of a new source of pollution may be denied. Like the JEQ and FZEQ strategies, both of these statutory air quality controls require the temporal allocation of emission rights and raise similar equal protection problems. Taking problems similar to those arising under an emission quota also arise if either the new source controls or the nondegradation requirement leaves the polluter with no reasonable use of its land. However, neither the new source limitations nor the nondegradation requirement is explicitly tied to land. These restrictions are intended to improve air quality in order to achieve the health objective of the Clean Air Act. For this reason, they may not be subject to the taking objections applicable to direct regulations of land use.

denied a use enjoyed by others in the immediate area.\textsuperscript{33}

\textbf{B. The Confiscation and Value Diminution Tests}

A court could invalidate a land use restriction as an unconstitutional taking if the impact of the regulatory program on the property owner were excessively harsh.\textsuperscript{34} For some courts, a simple diminution in the value of the restricted land is sufficient to trigger a due process taking if no compensating community advantage is present.\textsuperscript{35} Other courts require a more severe loss. They will invalidate a regulation if it "confiscates" property by not allowing a reasonable use of the land.\textsuperscript{36}

The diminution in value test may now carry less weight given its apparent rejection by the United States Supreme Court in \textit{Penn Central Transportation Co. v. New York City}.\textsuperscript{37} That case considered the application of a landmarks preservation law that prohibited the construction of a high-rise office tower that would have impaired the aesthetic features of an isolated historic landmark, Grand Central Terminal.\textsuperscript{38} The Court upheld the restriction, indicating that a regulation must be heavily burdensome before it can be invalidated.\textsuperscript{39} \textit{Penn Central} may be read as requiring full confiscation of the land's value before a taking can be found.\textsuperscript{40} If so, an emission quota is not subject to constitutional attack simply because it diminishes the value of property.

Because zoning regulations enjoy an "average reciprocity of advantage," they are less vulnerable to challenge than emission quotas. A landowner may not make a confiscation argument so long as a reason-


\textsuperscript{35} \textit{See} From Magna Carta, supra note 23, at 911-16.


\textsuperscript{37} 438 U.S. 104 (1978).

\textsuperscript{38} Landmarks preservation, like the emission quota in the hypothetical, imposes land use restrictions that fall uniquely on an isolated landowner and may prohibit development compatible with the surrounding area.

\textsuperscript{39} 438 U.S. at 125. \textit{See also} id. at 138-53 (Rehnquist, J., dissenting).

\textsuperscript{40} The Court noted that the owners of the terminal conceded that a reasonable return was possible even though the highrise office tower was not constructed. \textit{Id.} at 129. The Court may have meant that the refusal to allow construction of the office tower would have been a taking had no reasonable return on the existing terminal been possible. This interpretation is consistent with the Court's indication that land use regulations must be confiscatory before they can be declared unconstitutional. \textit{Id.} at 123-28. A holding that no reasonable return (or reasonable use) is available is equivalent to a holding that the land use restriction is confiscatory. See the discussion of the \textit{Stevens} case at text accompanying note 42 \textit{infra}. 


able alternative use is possible on the restricted property. In *Stevens v. Town of Huntingdon*, the municipality downzoned to residential use a tract surrounded on three sides by extensive commercial development and on one side by a residentially zoned area. A utility had planned to use the land in the residential area to store equipment. Although the municipality defended the downzoning as necessary to maintain the residential character of an adjacent neighborhood and to avoid traffic congestion, the majority held it unconstitutional: “[T]hese aims, admirable as they may be, have the effect of depriving a property owner of making any reasonable use of his property.”

The dissent saw the matter differently:

Although the court is acting upon words having heavy implications of invalidity, such as ‘confiscatory,’ . . . the issue in actuality amounts to a routine controversy turning on a difference of opinion between local zoning officials and property owners on zoning classifications. The merits are arguable either way, but it takes more than that to invalidate a zoning restriction.

*Stevens* indicates that courts view the compatibility of the proposed use with existing adjacent uses as an important factor in zoning cases.

In the hypothetical emission quota example, the refusal to allow industrial development in a fully developed industrial area may leave the landowner with no use compatible with surrounding uses. Under these circumstances, a court could uphold the emission quota if the landowner can use the tract for nonpolluting industrial development.

---

41. See Van Alstyne, *supra* note 36, at 29-37. Where zoning restrictions do not leave alternative uses, however, a due process taking may be found: “If existing uses of surrounding property or nearby land are so highly incompatible with permitted uses of the subject property that development for the latter purpose is unlikely to occur, the restriction may be deemed arbitrary and confiscatory.” *Id.* at 33.

42. 20 N.Y.2d 352, 229 N.E.2d 591, 283 N.Y.S.2d 16 (1967).

43. *Id.* at 356, 229 N.E.2d at 593, 283 N.Y.S.2d at 19. The *Stevens* case was applied in Grimpel Associates v. Cohalan, 41 N.Y.2d 431, 361 N.E.2d 1022, 393 N.Y.S.2d 373 (1977), to invalidate a downzoning from business to residential use of an isolated island of land surrounded by business operations and major thoroughfares. Noting that the downzoning caused a 92% reduction in the value of the property, the court stated that “[w]hile not in itself dispositive of the constitutional issue, proof of a drastic reduction in value tends to establish that the property is not reasonably suited for the uses prescribed by the zoning ordinance.” *Id.* at 433, 361 N.E.2d at 1024, 393 N.Y.S.2d at 375. Cf. McGowan v. Cohalan, 41 N.Y.2d 434, 361 N.E.2d 1025, 393 N.Y.S.2d 376 (1977) (upholding a downzoning from industrial to residential use as consistent with surrounding zoning and development patterns and the objectives of the community’s master plan and zoning ordinance).

44. 20 N.Y.2d at 358, 229 N.E.2d at 595, 283 N.Y.S.2d at 20.

45. See text accompanying note 23 *supra*.

46. Nonpolluting uses could include warehouses, freight terminals, and storage yards. Alternative uses whose emissions do not exceed the quota may also be possible. Less intensive alternative uses may impose some loss of value on the property owner, but the courts usually have not viewed such marginal losses as fatal. See Steel Hill Dev., Inc. v. Town of Sanbornton, 469 F.2d 956 (1st Cir. 1972); Sands Point Harbor, Inc. v. Sullivan, 136 N.J. Super. 436, 346 A.2d 612 (App. Div. 1975). The Supreme Court of Michigan noted that “the
A developer could also gain project approval if it reduces potential emissions by improving its pollution controls or by trading emissions with others. If the expense of improved technology or the cost of buying emissions rights is too costly, however, the quota may face a taking challenge.

C. Characterization of Governmental Purpose

The Court in *Penn Central* required that a land use restriction be "reasonably necessary to the effectuation of a substantial public purpose." Some courts have placed heavy weight upon the harms prevented and the benefits distributed by the regulatory restriction. Under this doctrine, a court will uphold a land use regulation whose purpose is to avoid harm to adjacent property. It will declare the land use regulation unconstitutional if it compels a property owner to confer a benefit on the community when the owner's present use produces no external harm. The taking objection to this second type of land use regulation reflects fairness values that require the burden of regulation to be shared by the public receiving its benefits and not concentrated according to the accident of ownership. Most cases in which the harm-benefit doctrine is invoked to invalidate a land use regulation are cases in which the regulation is severely restrictive, as in the hypothetical emission quota example. These cases imply that even severely restrictive land use regulations may be constitutional if enacted to avoid a harm.

---

47. See note 17 supra.
48. 438 U.S. at 127. The presence of a less destructive means for achieving the goals to be served may also bear on the taking issue. See Marcus, supra note 33, at 741-45. See also note 160 infra.
50. A good example is a zoning restriction compelling an owner to maintain his property as a parking area. Vernon Park Realty v. City of Mount Vernon, 307 N.Y. 493, 121 N.E.2d 517 (1954) (zoning ordinance unconstitutional).
53. See From Magna Carta, supra note 23, at 919-22. *Penn Central* demonstrates that prohibited uses need not be noxious to uphold a restriction. 438 U.S. at 133 n.30. Indeed,
The land use restriction imposed in the emission quota hypothetical appears to be unconstitutional under the traditional avoidance of harm rationale. Additional industrial use in a developed industrial area does not create further harm. That restriction may be held constitutional under an extended avoidance of harm theory, however. This theory is best understood when applied to uphold land use regulations restricting development in wetlands areas.

Uses damaging environmental resource areas in their natural state, such as wetlands, can be constitutionally prohibited since they diminish the public's right to the enjoyment of a public good. Since the market generally does not encourage the landowner either to preserve a public good or to avoid imposing an external cost on neighbors, the state...
must intervene to prevent a damaging conversion. Courts distinguish restrictions preventing the loss of a public good from those conferring a benefit on the general public at the expense of a single landowner. They will uphold the former restriction although it approximates a confiscation of the owner's land.

A related collective public rights doctrine may also provide support for the land use restriction in the emission quota hypothetical. This theory, like the extended avoidance of harm doctrine just described, focuses on extant public rights. It reflects an awareness of the market's inability to internalize the costs created by the conversion of a common public resource.

Individual and public demands upon a common resource frequently generate spillover effects. Landowners, for example, may place demands on common wetlands by converting to more intensive uses. The resulting spillover effects would harm the public's interest in preserving the wetlands. These spillover effects fall on an unrepre-
sented and widely diffused public. In this situation, the legislature may resolve these conflicting private demands and public interests by evaluating their comparative costs and benefits. To protect the public interest the legislature may constitutionally restrain the private conversion of wetlands even though this prohibition imposes a severe economic loss.

The application of both the avoidance of harm and the collective public rights doctrines to support severe limitations on land development is most apparent in cases upholding the constitutionality of restrictive wetlands regulations. Like emission quotas, wetlands regulations can be characterized as compelling a public benefit—the preservation of the wetlands. Courts have nevertheless upheld wetlands regulations under the doctrines outlined above. In Just v. Marinette County, for example, the Wisconsin Supreme Court upheld a local wetlands ordinance prohibiting landowners from filling the wetlands for developmental purposes. Although the court's decision is marked by inconsistencies, its recognition of the commons doctrine is clear:

[I]f the damage is such as to be suffered by many similarly situated and is in the nature of a restriction on the use to which land may be put and ought to be borne by the individual as a member of society for the good of public safety, health or general welfare, it is said to be a reasonable

63. Nuisance law responds to the conflict when spillover effects are substantial and fall on discrete property owners. Costs need not be left where they fall simply because they are too widely scattered for any one litigant to come forward. Id. at 155.

64. See id. at 159. Regulations that protect the rights of diffused property owners do not “take” something the public never had before. Instead, these regulations implicitly recognize a public interest in a common and try to resolve these conflicting claims. Id. at 172.

Traditionally, the concept of a public right as superior to private property rights had limited application. Usually, such rights appeared in navigational servitude, public nuisance, and the public trust doctrines. For a critique of the Sax position, see B. ACKERMAN, PRIVATE PROPERTY AND THE CONSTITUTION 54-56 (1977) (arguing that Sax places too much weight on avoidance compensation as a means to encourage enactment of environmentally protective legislation).

65. See Gold, supra note 56, at 352: “If the aggregate value of the [public] good to all these consumers equals or exceeds the cost of its production, then we have created value by producing that good.”

66. Sax, supra note 51, at 162. Any uses that do not produce spillover effects are constitutionally entitled to protection. A use may not be restricted without compensation “simply because a neighboring demand would provide a greater net benefit to the society.” Id. For example, a legislature could prohibit mining to protect adjacent property from damage caused by mine drainage. It could not, however, require the mine owner to use its land as a parking lot for the benefit of adjacent residents. Id. at 162-63.

67. See note 55 supra.

68. 56 Wis. 2d 7, 201 N.W.2d 761 (1972).

69. For example, at one point the court implies that no restriction on the development of land in its natural state can amount to a taking. Id. at 23, 201 N.W.2d at 771. If this is true, the restriction on land use considered in the case need not have been justified by reliance on the commons rationale.
The court also found that the restriction on development did not compel the landowner to confer a public benefit. It held that the purpose of the restriction was "to prevent a harm from the change in the natural character of the citizens' property." This holding recasts the traditional avoidance of harm doctrine.

Although courts could apply the commons doctrine to uphold an emission quota, a major distinction between wetlands regulation and emission quotas may make the wetlands rationale inapplicable. All landowners in a wetlands are equally restricted. Courts wishing to uphold a wetlands regulation could invoke the "average reciprocity of advantage" principle as additional support. Under emission quotas, as in the hypothetical example, landowners may not be equally restricted.

The Supreme Court rejected a similar objection in the *Penn Central* decision, in which the regulatory burdens imposed under a landmarks preservation law fell on a number of parcels of land scattered throughout New York City. It is unclear whether the existence of an average reciprocity of advantage was immaterial to the Court's

---

70. *Id.* at 15-16, 201 N.W.2d at 767 (quoting Stefan Auto Body v. State Highway Comm'n, 21 Wis. 2d 363, 369-70, 124 N.W.2d 319, 323 (1963)).

71. 56 Wis. 2d 7, 16, 201 N.W.2d 761, 767-68. Similarly, *Sibson v. State*, 115 N.H. 124, 336 A.2d 239 (1975), upheld a prohibition on a proposed fill in a coastal salt marsh. The court cited the referee's findings that the salt marsh was a valuable ecological asset to the seacoast, and that the proposed fill would do "irreparable damage to an already dangerously diminished and irreplaceable natural asset." *Id.* at 126, 336 A.2d at 240. In addition, the court noted the referee's findings that a neighboring large flow of water would "magnify the deleterious effect which the fill would have upon the entire one hundred acres of the marsh." *Id.* The landowner claimed that the denial of the permit to fill the marsh rendered the land economically useless and constituted a taking. Giving minimal recognition to the effect of the restriction, the court held that the police power could be used to prohibit activities harmful to the public. *Id.* at 130, 336 A.2d at 243. In its treatment of the conflict between these competing demands, the court balanced the "importance of the public benefit which is sought to be promoted against the seriousness of the restriction of a private right sought to be imposed." *Id.* at 129, 336 A.2d at 242 (quoting *Richardson v. Beattie*, 98 N.H. 71, 75-76, 95 A.2d 122, 125 (1953)). The court further noted that: "The importance of wetlands to the public health and welfare would clearly sustain the denial of the permit . . . even were their rights the substantial property rights inherent in a current use of an activity on their land." 115 N.H. at 129, 336 A.2d at 242-43.

72. Under the traditional avoidance of harm test, a land use may be prohibited if it would impose a negative cost on surrounding properties. A New Jersey Court has relied on the theory of the *Penn Central*, *Just*, and *Sibson* cases to uphold an order under a state wetlands statute prohibiting the filling of wetlands. *American Dredging Co. v. State Dep't of Environmental Protection*, 161 N.J. Super. 504, 391 A.2d 1265 (Ch. 1978).

73. Sax cites air as an example of a common resource. Sax, *supra* note 51, at 162.

74. See text accompanying notes 32-33 *supra*.


76. *Penn Central* argued that because the landmarks preservation law does not impose similar restrictions on all structures it is "inherently incapable of producing the fair and equitable distribution of benefits and burdens of governmental action which is characteristic of zoning laws." *Id.* at 133.
finding that the regulation did not constitute a taking, or whether the Court found this reciprocity in the community-wide benefits of landmark preservation in which the landowner shared.\footnote{77} In any event, the \textit{Penn Central} Court appeared willing to support burdensome land use regulations if they conferred widespread public benefits.\footnote{78} Comparable community-wide benefits from clean air might justify equally burdensome restrictions imposed on landowners under an emission quota. This conclusion is undercut, however, by the concession in \textit{Penn Central} that the parcel as regulated was capable of earning a reasonable return.\footnote{79} This concession suggests that the Court may accept land use restrictions producing community-wide benefits only if reasonable alternative uses remain.\footnote{80} Regulations approaching a confiscation may have to be grounded in a health-related objective,\footnote{81} the avoidance of harm doctrine, or a principled resolution of conflicting rights to a common resource.\footnote{82}

\footnote{77} The Court first noted that all land use regulation burdens some landowners more than others, and that the imposition of "unique" burdens is not enough to support a holding of unconstitutionality. \textit{Id.} at 133-34. It then added that the objection by the landowner that it is "solely burdened and unbenefted is factually inaccurate" because "the preservation of landmarks benefits all New York citizens and all structures, both economically and by improving the quality of life in the city as a whole." \textit{Id.} at 134-35. The Court's repeated reference to three cases not reliant on the average reciprocity doctrine provides additional indication that the landmarks preservation law was valid without such a finding. \textit{See id.} at 133-35.

The emission quota hypothetical, see text accompanying note 23 \textit{supra}, is nevertheless distinguishable in that the landmarks to be preserved were picked according to specific criteria under a comprehensive plan. 438 U.S. at 109-11. The burdened property was easily distinguished from surrounding unburdened parcels.

\footnote{78} See note 56 \textit{supra}. Despite its refusal to rely on the avoidance of harm rationale, the Court clearly recognized as permissible the governmental purpose of preserving a public good—literally, the preservation of an historic landmark. 438 U.S. at 129.

\footnote{79} 438 U.S. at 136. The parcel could have continued to operate profitably as a railroad terminal, as it had for 65 years. \textit{Id.} Moreover, the landmarks preservation restriction allowed for transfer of the valuable air rights it infringed to neighboring properties. The Court significantly found that these transferable development rights mitigated the law's impact for purposes of determining whether it amounted to a taking. \textit{Id.} at 137. \textit{See generally} Marcus, \textit{supra} note 33, at 747-48.

The implementation of an emission quota could include a method for the transfer of available emission rights among polluters in the area subject to the quota. This method would be most effective if applied under EDZ since the emission rights available to each unit of land subject to the quota are known in advance. Landowners subject to EDZ would possess marketable emission rights from which they could derive a return on sale that would help mitigate taking objections. Taking problems could reappear whenever industrial developers subject to the quota would be required to purchase emission rights as an alternative to the acquisition of additional land. For a discussion of transfer of development rights programs, see Costonis, \textit{Development Rights Transfer: An Exploratory Essay}, 83 \textit{Yale L.J.} 75 (1973). \textit{See also note} 17 \textit{supra}.

\footnote{80} See text accompanying note 46 \textit{supra}.

\footnote{81} See text accompanying notes 24-31 \textit{supra}.

\footnote{82} The Supreme Court did not address these theories in its \textit{Penn Central} decision, and dicta imply that an unduly harsh impact will constitute a taking regardless of governmental purpose. 438 U.S. at 127, 137.
Zoning for industrial use generally is administered in one of two ways. Areas for industrial use may be zoned in advance so that industrial uses are permitted as of right in these areas. Alternatively, industrial uses may be permitted on a case-by-case basis through a floating zone procedure. Careful administration of the local zoning ordinance can help avoid taking problems associated with emission quotas.

Designating industrial zones in advance of the application of the emission quota is the preferable zoning technique when a Jurisdictional Emission Quota is adopted. Municipal zoning for industrial development is taken into account at the time the emission quota is determined, and the quota is designed to permit the maximum amount of industrial development possible without violating national ambient air quality standards. Taking problems may still arise if the quota does not permit the full development of industrially zoned areas. Matching industrial zoning to the quota is difficult because industries have widely varying potentials for generating emissions.

Taking problems are less likely to arise if the municipality zones for less industrial development than the emission quota allows. The municipality can avoid objections to underzoning by amending the zoning ordinance to allow additional industrial development in the event the emission quota is not exhausted. In short, the local zoning ordinance can allocate industrially zoned land consistently with the quota to avoid taking problems.

Difficulties may arise under this advance zoning approach if the market does not respond to industrial zoning designations. Developers, for example, may seek zoning map amendments for industrial use outside industrially zoned areas, upsetting the use of a zoning strategy to reinforce the emission quota. Municipal resilience to attacks on the zoning plan is essential in this situation.

83. See text accompanying note 20 supra.
84. Emission rights may also be acquired from neighboring industries that could more easily reduce their emissions. See notes 17 and 79 supra.
85. Although the zoning ordinance usually does not include criteria indicating when amendments should be made, policies for map amendments can be included in the comprehensive plan. Municipalities may refuse to rezone for new industrial development in order to allocate emission quotas effectively. This refusal can be supported by the availability of alternative sites zoned for industrial use. In Bosse v. City of Portsmouth, 107 N.H. 523, 226 A.2d 99 (1967), the court declared unlawful a decision to rezone for industrial use because alternative industrially zoned areas were available. The tract in question could have been developed consistently with adjacent residential zoning.

Rezoning is more easily invalidated when it violates the comprehensive zoning plan. As the Oregon Supreme Court has pointed out, the "integrity of comprehensive planning would be seriously compromised if a property owner could obtain a zone change on the ground that . . . his proposed development would be less profitable in an appropriately zoned area." Green v. Hayward, 275 Or. 693, 709, 552 P.2d 815, 824 (1976). Oregon is one
A Floating Zone Emission Quota is most readily implemented if the municipality does not prezone, but controls industrial development through a local floating zone process.\(^{86}\) Under this zoning technique the municipality may review new industrial development on a case-by-case basis and prohibit further development once the quota is exhausted.

The difficulty with this approach is that the floating zone criteria might require approval of industrial development even after the quota has been exhausted. These criteria are usually aimed at avoiding adverse land use impacts in the surrounding area and allow approval whenever these criteria have been met.\(^{87}\) To overcome this problem, the municipality can incorporate quota compliance as a criterion for approval under the floating zone ordinance.\(^{88}\)

**E. The Interim Restriction Analysis**

The discussion thus far has assumed that the restriction on land use under the emission quota is permanent. This Article now considers the possibility that the quota restriction may be temporary. Polluting industrial uses on land initially restricted under the quota may be allowable in at least two situations. Existing industries may move or close, making their emissions available to other developers. Alternatively, existing polluters may use improved pollution control technology to reduce pollution levels. Restrictions on industrial development under an emission quota may thus be temporary, although a developer would have no assurance of future development. The question arises whether this "temporary" land use restriction amounts to a taking.

Few cases have considered this question directly, but the decision of an Iowa appellate court may indicate how other courts will view the constitutionality of such a restriction. In *Petersen v. City of Decorah*,\(^{89}\) the court considered the constitutionality of an agricultural district classification “intended to reserve areas suitable for nonagricultural use until the land is needed for development in accordance with a future land use plan.”\(^{90}\) The city had refused to rezone for a shopping center

---

86. See note 20 supra and accompanying text.
89. 259 N.W.2d 553 (Iowa Ct. App. 1977).
90. Id. at 554.
on the ground that the land should be reserved for future industrial use. The court found a taking because the property owner was forced to keep the land vacant and pay property taxes until the city attracted the desired industry.\textsuperscript{91} He had no productive use for the property under the existing agricultural classification.\textsuperscript{92} Comparable uncertainties surround the possibilities for emission quota increases, and may lead to rejection of the temporary restriction rationale.

The constitutionality of more certain temporary restrictions on development was also considered in a well-known case, \textit{Golden v. Planning Board},\textsuperscript{93} upholding a growth management program adopted in Ramapo, New York. That program allowed development only as designated public services and facilities became available. The municipality then timed capital improvement so that development in some areas was delayed for periods up to eighteen years. A delay of this magnitude is arguably suspect since other cases approving interim restrictions on development have limited those restrictions to a relatively brief period of time.\textsuperscript{94} Nevertheless, the \textit{Ramapo} court upheld the eighteen year delay. In allowing the restrictions, the New York court was impressed with the municipality's commitment to provide capital facilities and services that would assuredly make development possible within the period covered by the growth management program.\textsuperscript{95}

\textsuperscript{91} The court noted that "[t]he contention by the city that it placed Petersen's land in a 'holding' classification until the right industry comes along must be assessed against the fact that no new industry has been attracted to Decorah since 1964." \textit{Id.} at 554.

\textsuperscript{92} A similar case came before the Michigan Supreme Court in Biske v. City of Troy, 6 Mich. App. 546, 149 N.W.2d 899 (1967), rev'd, 381 Mich. 611, 166 N.W.2d 453 (1969). In that case, the city had zoned land for office buildings pursuant to a comprehensive plan. The plan proposed a civic center for the area, to be surrounded by shopping centers, office buildings, and parking facilities. Plaintiffs had been refused a rezoning for a gasoline filling station on the site. Although the intermediate court of appeals credited the comprehensive plan and upheld the refusal to rezone, the state supreme court reversed. It relied heavily on the fact that the comprehensive plan had not been officially adopted. It also noted that if the refusal to rezone were sustained the "hapless property owner" must wait, pay taxes, and hope "that either the anticipated development will come shortly or that the zoning authority will release to some extent its griphold of his property right." \textit{Id.} at 617, 166 N.W.2d at 457.


\textsuperscript{95} "The [ordinance] contemplate[s] a definite term, as the development [restrictions] are designed to operate for a maximum period of 18 years and during that period, the Town is committed to the construction and installation of capital improvements." 30 N.Y.2d at 380, 285 N.E.2d at 304, 334 N.Y.S.2d at 155.
Although the Ramapo case indicates that the court may tolerate a temporary restriction on development imposed under an emission quota, the Ramapo growth management program is easily distinguished from the emission quota. The Ramapo program assured the developer the right to develop once promised services and facilities became available. Emission quotas imposed as part of an air quality control program do not guarantee that development restricted by the emission quota will be allowed at some later time, or even within a reasonable period.96

Jurisdictional and Floating Zone Emission Quotas raise potential taking problems whenever they restrict industrial development. The discussion in this section suggests that taking objections to land use restrictions imposed under these emission quota strategies can be successfully defended except in the most extreme situations.

III
TAKING PROBLEMS UNDER EMISSION DENSITY ZONING

Different due process objections arise under the Emission Density Zoning variant of the emission quota.97 The "worst case" hypothetical posed above cannot arise under Emission Density Zoning because it allows some industrial development on every parcel of land. Since emissions are assigned to each unit of land in proportion to the acreage, the quota allows new industrial development when a sufficient amount of land and its emission "rights" are acquired to bring predicted emissions within the quota.98 Taking problems may arise under EDZ if it compels a developer to acquire more land than that needed to comply with the density requirements of the local zoning ordinance.

This additional land acquisition requirement may be constitutional as an internalization of the costs imposed on the community by the excess emissions generated by the new industrial pollution source. Zoning and subdivision controls contain comparable cost internalization requirements. Cases upholding these requirements support the constitutionality of land acquisition requirements under EDZ.

Zoning ordinances commonly impose land buffer requirements

---

96. A temporary quota on development was also upheld in Construction Indus. Ass'n v. City of Petaluma, 522 F.2d 897 (9th Cir. 1975), cert. denied, 424 U.S. 934 (1976), but the court did not give extensive consideration to the constitutionality of the quota as a temporary measure. See text accompanying notes 152-56 infra.

97. Some of the issues presented in conjunction with JEQ and FZEQ programs are applicable to emission quota strategies in general and bear equally on the constitutionality of EDZ. It is important to consider whether EDZ would be afforded the extreme judicial deference accorded health-related objectives not affecting land use. See text accompanying notes 24-31 supra. The characterization of governmental purpose generally will affect the taking analysis. See text accompanying notes 48-82 supra.

98. See text accompanying notes 14-17 supra.
between uses of different intensity. The more intensive use must have a buffer area kept free of development and must often be landscaped to provide a protective shield for less intensive adjacent uses. Judicial support for land buffer requirements in zoning ordinances is found in *State v. Gallop Building,* in which the landowner held two lots adjacent to a residential district with a total frontage of 100 feet. The New Jersey appellate court ruled that requiring a twenty foot planted buffer strip on that part of the business lot adjacent to the residential district was not confiscatory.100

The *Gallop* case indicates that a land buffer requirement might be invalid if the buffer is excessive compared to the intensity of the use.101 A large shopping center, for example, might require a buffer strip of substantial width while a less intensive use should require a smaller buffer. The *Gallop* case upholds the buffer concept under a proportionality rule based on intensity of use as an internalization of the adverse external impacts from land uses of differing intensity. Similarly, a land acquisition requirement under EDZ that is related to emissions generated should be valid.

Subdivision controls, which govern the platting and preparation of vacant land for urban development, set forth subdivision layout criteria including street and facility requirements. They may also require land dedications for adjacent streets, and less frequently, dedications for parks and schools associated with the subdivision.102 Subdivision dedications raise taking problems similar to those raised by additional land assembly requirements under EDZ because the developer cannot make use of the land it must dedicate.103

Subdivision land dedications have been accepted as constitutional whenever the purpose for the dedicated land meets a public need created by the subdivision.104 Like the land buffer requirement, the land

---


100. 103 N.J. Super. at 372, 247 A.2d at 353.

101. *Id.* In *Gallop,* the proceeding was brought to enforce a penalty incurred for violation of the ordinance. Only the general validity of the ordinance and not the validity of its application to the landowner's lots was in issue.


103. EDZ may be easier to defend from this standpoint because the developer could use the additional land assembled for private nonpolluting purposes.

104. Just what nexus must be proved between the service need generated by the subdivision and the dedication demanded from the developer is as yet unsettled. For an expansive
dedication internalizes a cost generated by the subdivision by placing a charge on the development for facilities the subdivision requires. A few subdivision cases also have applied a proportionality rule to invalidate an excessive land dedication requirement. These cases imply that application of an EDZ land acquisition requirement to an industrial development may be invalid if the amount of land required under the quota is substantially excessive for the proposed use.

Courts may view noncompensatory subdivision controls as a regulatory substitute for governmental land acquisition. This attitude reflects the traditional view that severely restrictive land use regulation may not be enacted to confer an uncompensated benefit on the general view of this requirement, see Associated Home Builders of the Greater East Bay, Inc. v. City of Walnut Creek, 4 Cal. 3d 633, 484 P.2d 606, 94 Cal. Rptr. 630, appeal dismissed, 404 U.S. 878 (1971). This case considered the constitutionality of a lot fee requirement, which is often imposed as an alternative to a land dedication. For a review of case authority, see Comment, Subdivision Exactions: The Constitutional Issues, the Judicial Response, and the Pennsylvania Situation, 19 Vill. L. Rev. 782 (1974).

Excessiveness was measured by the amount of land held for development and not by the need generated by the subdivision. This holding reflects the assumption, common to zoning cases, that the constitutionality of a land use restriction is tested by its impact on the unit of land that the restricted landowner owns. See East Neck Estates v. Luchsinger, 61 Misc. 2d 619, 305 N.Y.S.2d 922 (Sup. Ct. 1969). The planning board required the plaintiff to dedicate a portion of his shore front property as a condition to subdivision plat approval. The court invalidated the dedication because the strip of land was worth one-third of the total value of the property. Cf. Patenaude v. Town of Meredith, —N.H.—, 392 A.2d 582 (1978) (East Neck not applicable on facts because no showing of relative value of land required to be dedicated and lots at issue not fit for use subdivider intended). See also Frank Ansuini Inc. v. City of Cranston, 107 R.I. 63, 264 A.2d 910 (1970). The municipal ordinance required developers to dedicate seven percent of their land for recreational purposes. The court invalidated this requirement on the ground that the mandatory seven percent dedication was arbitrary and could be unreasonable as applied to a particular development.

Local ordinances also commonly require that developers set buildings back a designated distance from a street or highway. Setback regulations have been held unconstitutional when they deprive the landowner of an excessive amount of land. See, e.g., Zampieri v. Township of River Vale, 29 N.J. 599, 152 A.2d 28 (1959).

Another regulatory program raising similar due process taking problems is the official map. An official map is not a cost internalization control. Rather, it holds land in an undeveloped state until a public agency is ready to acquire it for designated public purposes, such as highways or parks. Privately owned land shown on an official map is prohibited from development during the interim period before the land is acquired for public purposes. See Mandelker, Planning the Freeway: Interim Controls in Highway Programs, 1964 Duke L.J. 439. Constitutional objections that the temporary land development restriction is a taking usually have been rejected when the restriction is for a reasonable period of time. See, e.g., Grisor, S.A. v. City of New York, 83 Misc. 2d 1054, 374 N.Y.S.2d 549 (Sup. Ct. 1975), rev'd on other grounds, 54 App. Div. 2d 685, 387 N.Y.S.2d 271 (1976). As in the subdivision control cases, the courts have also made it clear that an official map will be held unconstitutional as a taking if an excessive amount of land under one ownership is restricted. See Jensen v. City of New York, 42 N.Y.2d 1079, 369 N.E.2d 1179, 399 N.Y.S.2d 645 (1977).

Cases invalidating subdivision exactions often imply that the cost of the facility should be met by general taxation. See, e.g., Pioneer Trust & Sav. Bank v. Village of Mount Prospect, 22 Ill. 2d 375, 381, 176 N.E.2d 799, 801 (1961) (requiring dedication of land for schools unreasonable when need for new facilities not specifically caused by new subdivision). Land for these facilities would have to be acquired through eminent domain.
public.\textsuperscript{108} Land acquisition under EDZ that is disproportionate to the land held for development is subject to the same objection. A court is more likely to uphold EDZ, however, since the land would not be used for a public use, such as a street, but only regulated to prevent a private use in order to maintain the benefits of clean air.

Due process objections to EDZ's additional land acquisition requirement need not be fatal. The earlier discussion of these objections under other emission quota alternatives indicates that some courts tolerate heavy regulatory restrictions on land use.\textsuperscript{109} They may even uphold highly burdensome land acquisition requirements under EDZ using the proportionality concept adopted in the \textit{Gallop} and subdivision dedication cases. Alternative development providing a reasonable use of the surplus land may also be possible without violating the emission quota.\textsuperscript{110}

Another due process problem may arise when EDZ is applied to land already acquired for future industrial development in areas where some industrial development has occurred. To comply with the quota, the landowner may have to assemble additional land in order to obtain sufficient emission "rights". Land assembly may be difficult or even impossible. Adjacent vacant land, if any, may not be for sale or may be available only at a prohibitive price, creating constitutional difficulties.

Similar problems have arisen under zoning ordinances imposing lot size requirements. Assume, for example, that a landowner has acquired a lot in a developed or developing area that complied with lot size restrictions at the time of acquisition. Later the municipality increases these requirements, making the previously acquired lot substandard for development. When a lot in this situation is surrounded by developed land, courts almost always hold that requiring the owner of the substandard lot to comply with the more stringent zoning regulation is confiscatory.\textsuperscript{111}

Constitutional difficulties may arise even if a substandard lot is

\begin{itemize}
  \item \textsuperscript{108} See text accompanying notes 49-50 \textit{supra}.
  \item \textsuperscript{109} See text accompanying notes 37-40 \textit{supra}.
  \item \textsuperscript{110} See text accompanying note 46 \textit{supra}.
  \item \textsuperscript{111} See \textit{Hyndiuk v. City of Chicago}, 14 Ill. App. 3d 1057, 304 N.E.2d 6 (1973); \textit{Robyns v. City of Dearborn}, 341 Mich. 495, 67 N.W.2d 718 (1954); \textit{Graves v. Bloomfield Planning Bd.}, 97 N.J. Super. 306, 235 A.2d 51 (L. Div. 1967). \textit{Cf. Wolfe v. Village of Riverside}, 60 Ill. App. 2d 164, 208 N.E.2d 833 (1965) (setback requirement invalid when it would require undersized house to be built on lot). Professor Williams has suggested that the courts in these cases have been influenced by the nature of the development in the area surrounding the substandard lot. If most of the lots in the surrounding area conform, the court may be less likely to invalidate the ordinance. 2 N. \textit{WILLIAMS, AMERICAN PLANNING LAW} § 41.02 (Supp. 1977). In the cases cited by Williams, the owner of the substandard lot has asked for a variance from the applicable lot size restriction. Courts often reverse a refusal to grant a variance in order to avoid holding that the lot size restriction as applied to the substandard lot is unconstitutional. \textit{Id.} at § 41.02 (1974).
\end{itemize}
adjacent to a vacant lot owned by another party. Although the landowner could comply with the lot size requirement by purchasing the lot from the neighbor, not all courts agree that this purchase requirement may be imposed. Serious practical difficulties may also arise. Courts have no authority to compel an unwilling adjacent landowner to sell his land or to restrict him to a fair price. Although these problems can be handled by legislation requiring owners of adjacent land to sell at a fair price when necessary to secure compliance with the zoning ordinance, this legislation raises separate constitutional questions.

Comparable isolated substandard lot problems may arise under EDZ. Some courts may excuse the landowner from compliance with EDZ when additional land assembly is impossible or impractical. Alternative remaining uses may save the restriction even if the owner cannot practically acquire enough land to permit the proposed use.

IV
EQUAL PROTECTION PROBLEMS RAISED BY EMISSION QUOTAS

A. The Standard of Review

Courts apply varying degrees of judicial scrutiny to legislative and administrative classifications depending upon the interests affected. The Supreme Court employs the rational relationship test, a relaxed

112. See Ritenour v. Dearborn Township, 326 Mich. 242, 40 N.W.2d 137 (1949) (landowner cannot be required to procure adjacent land to fully utilize own property); Faucher v. Sherwood, 321 Mich. 193, 32 N.W.2d 440 (1948) (holding denial of variance of setback requirements unreasonable, court noted that ordinance does not require ownership of two lots in order to build); Branard Homes, Inc. v. Plonski, 20 Misc. 2d 443, 189 N.Y.S.2d 536 (Sup. Ct. 1959) (dictum that owner cannot be compelled to sell to neighbor); Macchia v. Board of Appeals, 7 Misc. 2d 763, 164 N.Y.S.2d 463 (Sup. Ct. 1957) (requiring owner to sell or purchase property from neighbors violates constitutional rights).


114. See Sanderson v. City of Willmar, 282 Minn. 1, 162 N.W.2d 494 (1968). In this case the property was zoned for a parking lot. The zoning ordinance provided that the city be notified if the owner decided to sell. The city could then direct the owner of the parking lot to negotiate with a potential buyer. If these negotiations failed, the city would have the option to acquire the property through negotiation or eminent domain. The court held this provision of the ordinance unconstitutional as an invasion of the property right to sell land to anyone at any time. Id. at 6, 162 N.W.2d at 498.

115. See note 46 supra and accompanying text. Since some emissions would always be permissible under EDZ, the prospect of reasonable alternative remaining uses is even more likely than under the JEQ or FZEQ strategies.
standard of review, in equal protection cases in which the classification challenged affects economic interests. Under this test, classifications are sustained if they bear a rational relationship to the purpose of the legislation. Until recently, the relaxed relationship standard almost certainly meant judicial deference to the legislative classification.

State courts are free to interpret state constitutional guarantees to afford more protection than the Federal Constitution. Indeed, Justice Brennan has encouraged them to do so. State courts have also accorded greater equal protection scrutiny to legislative programs affecting economic interests, particularly to regulations affecting land use. This approach may take the form of a less deferential test, per-


117. See Frontiero v. Richardson, 411 U.S. 677, 683 (1973): “Under ‘traditional’ equal protection analysis, a legislative classification must be sustained unless it is 'patently arbitrary' and bears no rational relationship to a legitimate governmental interest.”

118. NOWAK, supra note 116, at 524.

119. Emission quota strategies adopted voluntarily by the states to achieve federal ambient air quality goals are subject to attack under state constitutional provisions as well. See note 9 supra.

120. Mr. Justice Brennan stressed that “state courts cannot rest when they have afforded their citizens the full protections of the federal Constitution . . . . The legal revolution which has brought federal law to the fore must not be allowed to inhibit the independent protective force of state [constitutions].” Brennan, supra note 9, at 491.

121. E.g., Johnson v. Hassett, 217 N.W.2d 771 (N.D. 1974). In invalidating, on state equal protection grounds, an automobile guest statute which limited the bases for liability of drivers towards nonpaying guest passengers, the court consciously applied a stricter standard of review than called for by the fourteenth amendment as interpreted by the United States Supreme Court. Id. at 775-76. It recognized further that previous statutes it had declared unconstitutional under the state equal protection clause "might have passed the Federal constitutional screening.” Id. at 776. See note 123 infra for further discussion of the case.

122. State courts are often more protective of property rights than the federal courts. This attitude becomes apparent when the treatment by federal and state courts of land use restrictions against taking objections is compared. See Mandelker, Gibb, & Kolis, Differential Enforcement of Housing Codes—The Constitutional Dimension, 55 U. DET. J. URB. L. 517, 541-42 (1978). See also text accompanying note 25 supra.

Even the tolerant view of land use restrictions adopted by the Supreme Court in its Penn Central decision suggests that restrictions will be upheld only if reasonably related to the production of a widespread public benefit “and applicable to all similarly situated property.” 438 U.S. at 133 n.30. Since all landmarks meeting specified criteria were subject to the regulatory program, the landmarks preservation law satisfied the latter requirement. Health-related objectives of maintaining clean air might not provide sufficient justification for uneven application of emission quota restrictions. Moreover, the Penn Central Court held that a land use restriction should be “reasonably necessary to the effectuation of a substantial government purpose.” 438 U.S. at 127. This language implies that the demonstrable existence of a clearly less restrictive, or perhaps less discriminatory alternative means to achieve the legislative goals could cause the Court to view a land use restriction as a
haps including a requirement that there be a "reasonable relationship" between a classification and a stated legislative purpose, or that the means substantially further the legislative purpose.123

Emission quotas produce an uneven distribution of valuable emission rights among landowners.124 They affect interests in property and are a form of economic regulation. Discrimination inherent in the administration of a regulatory program affecting economic interests is not a basis for invalidation under the Federal Constitution unless the discrimination is totally arbitrary. The greater willingness of state courts to upset local regulatory programs on constitutional grounds, especially those affecting land use, suggests that emission quotas may receive greater scrutiny at the state level. State courts may be less hesitant to find the means "irrational" or "unreasonable" if the impact unnecessarily falls more severely on some landowners, and the distinctions among landowners fail to serve the goals of the program generally.

B. The Problem

One set of equal protection objections to emission quotas may arise if emissions are allocated unevenly to prevent hot spots throughout the area. Equal protection objections to geographical allocations of emissions under an emission quota should not be serious if the criteria for allocating emissions are reasonable. Under the emission quota considered here, which maximizes emissions subject to maintaining compliance with national air quality standards, the criteria used to make the emission allocation should easily meet this constitutional test.125

Emissions must also be allocated to individual developers within geographical subareas. Emission Density Zoning accomplishes this allocation directly and proportionally126 without raising additional equal
taking. See Marcus, supra note 33, at 742. If this aspect of the taking doctrine is pursued, EDZ may be considered a less onerous alternative to FZEQ or JEQ programs because development restrictions are proportional to land area.

123. In Johnson v. Hassett, 217 N.W.2d 771 (N.D. 1974), discussed in note 121 supra, the North Dakota Supreme Court found that what commentators were suggesting was a newly developing "intermediate analysis, . . . requiring a 'close correspondence between statutory classification and legislative goals,'" closely approximating the test historically used by that court and some other state courts. 217 N.W.2d at 775. The court concluded "that the statutory classification is unreasonable for any proper purpose of the legislation" and invalidated the automobile guest statute. 217 N.W.2d at 780 (emphasis added).

124. See text accompanying notes 125-29 supra.

125. The very basis for applying emission quota strategies is to tighten the fit between implementation of federal air quality legislation and its goal of maximizing emissions subject to maintaining health-related ambient air quality standards. Consideration of geographical and meteorological factors in allocating allowable emissions to different land areas is absolutely necessary to achieve governmental purposes. Equal protection problems regarding this aspect of the quota's administration are not considered further.

126. See text accompanying notes 14-17 supra.
CONSTITUTIONALITY OF EMISSION QUOTAS

The Jurisdictional and Floating Zone Emission Quotas are administered over time and require rules for the temporal allocation of available emissions to industrial developers. The disproportionate allocation of emissions to similarly situated landowners may lead to equal protection objections, especially if the rules for allocation do not make fair distinctions among competing industrial developers who successively apply for emissions available under the quota.

Careful administration of the local zoning ordinance may lessen the need to provide rules for the allocation of emissions under a quota, but is not likely to avoid this problem entirely. As noted earlier, a precise fit between a Jurisdictional Emission Quota and advance zoning for industrial use is improbable. A floating zone ordinance that requires a new industrial development to comply with a Floating Zone Emission Quota is another alternative. It does not lessen the need for administrative criteria to allocate available emissions. State or local governmental agencies will inevitably have to provide separate rules to allocate the emissions available under the quota.

Sequential distributions of development opportunities must be made under the Clean Air Act in any event, since the national ambient air quality standards impose a de facto quota on land development within the area in which they apply. If the present level of air pollution does not exceed the level allowed under the standards, new development may occur until that level is reached. The Act does not provide criteria for choosing among competing developers. This omission implies that emissions will be distributed on a first-come, first-served basis.

The absence of temporal allocation rules in the Clean Air Act suggests that the emission quota need not contain explicit allocation rules to select among competing developers. Emissions available under a quota, like those available under the Clean Air Act, can be distributed on a first-come, first-served basis. Under more stringent equal protection review provided by the state courts, however, the method selected to allocate the emission quota will receive close judicial scrutiny.

C. Methods for Allocating Emissions to Individual Developers

Developing appropriate rules to administer any regulatory pro-

127. See note 22 supra.
128. See text accompanying notes 83-85 supra.
129. See text accompanying notes 86-88 supra.
130. The Clean Air Act does not preclude the allocation of emissions under an alternative to the first-come, first-served rule.
131. This conclusion assumes that first-come, first-served allocation under the Clean Air Act does not violate equal protection.
gram affecting land use in which temporal allocation of limited development opportunities must be made presents difficult conceptual and policy problems.\textsuperscript{132} Decisions approving new land development are often made sequentially without any explicit attempt to allocate the land among competing developers. This practice is common in zoning. A community allocates a finite amount of land for new development in its zoning ordinance and approves new development until all available land is exhausted.\textsuperscript{133} The courts are unable to examine the equal protection issues latent in the allocation criteria.

The sequential distribution of development opportunities common to land use control programs may temper equal protection objections to the allocation of emissions under an emission quota. The emission quota simply makes explicit an issue usually obscured from judicial scrutiny in the administration of more conventional land use controls.

Allocating quota emissions under the first-come, first-served alternative is plausibly fair; no arbitrary criteria favor one polluter over another. This method of allocation also appears attractive because it does not attempt to direct the manner in which the market responds to industrial development opportunities available under the quota. It is consistent with the underlying assumption of an open and competitive market economy.\textsuperscript{134} Although this method of allocation may favor larger developers who can assemble the necessary capital to take advantage of the quota,\textsuperscript{135} this disparate treatment is not normally a basis for evaluating other regulatory programs affecting land use.\textsuperscript{136}

An alternative to the first-come, first-served rule could limit each developer to a stated percentage of the emissions available under the quota. This limitation is difficult to justify since it assumes that social

\begin{itemize}
\item \textsuperscript{133} Under conventional zoning, land is slated in advance for industrial development. Rezoning applications will be approved sequentially if the local government deliberately underzones, contemplating gradual expansion of an intensive use district to meet growth demands in the community. A floating zone ordinance also contemplates the approval of new development on a case-by-case basis. See notes 20-21 supra and accompanying text.
\item \textsuperscript{134} The adoption of an emission quota, however, may upset the market equilibrium. Potential developers may then race to secure suddenly valuable emission rights regardless of the relative economic values of the various uses to which these rights are put. If trading and redistribution of emission rights are permitted, windfalls may accrue to the winners and unwarranted costs may be imposed on the losers. This analysis assumes that the availability of emissions under a quota will have a substantial influence on the behavior of industrial developers.
\item \textsuperscript{135} Smaller and less wealthy developers may suffer a handicap in the race described in note 134 supra.
\item \textsuperscript{136} State courts have upheld floating zone and similar ordinances limited to developers owning tracts of a minimum size against objections that smaller developers were excluded. See, e.g., Rodgers v. Village of Tarrytown, 302 N.Y. 115, 122-23, 96 N.E.2d 731, 734 (1951) (upholding 10 acre minimum requirement in floating zone ordinance).
\end{itemize}
policy requires the maximum number of developers without regard to economic considerations. This type of allocation rule would compel developers either to seek other locations or to apply additional and more expensive pollution control technology. Highly polluting uses may be foreclosed from development if they cannot make these adjustments, even when their economic value may be greater than the collective value of less polluting uses. Industries may also be displaced unnecessarily to other locations, creating inefficient patterns of development.\(^{137}\)

An allocation rule that limits emissions available to each developer may delay full utilization of the quota.\(^{138}\) Arguably, there is no reason for this delay. The emission quota can be allocated all at once or distributed over longer periods without affecting the achievement of air quality standards. After the quota is exhausted, new development would occur only if existing industry closed or if existing pollution levels were reduced. Air quality management would then shift from controls on new sources to controls on existing sources of pollution. This shift in control strategy also occurs under the Clean Air Act.\(^{139}\) The Act contains no suggestion that the allocation of available emissions should be delayed so that the enforcement burden on existing sources of pollution can be reduced.

Full utilization of emissions can be delayed in a more controlled manner by providing that only a stated percentage of the quota may be used in any one year.\(^{140}\) Controlled delay may be preferable if more development would be possible with new technology.\(^{141}\) A timed delay in the release of emissions under the quota would also complement local phased-growth management plans.\(^{142}\) An annual emission quota may nevertheless be objectionable for some of the same policy reasons.

---

137. For an analysis detailing the land use inefficiencies resulting from a moratorium on residential development forcing that development to go elsewhere, see E. Bergman, External Validity of Policy Related Research on Development Controls and Housing Costs 33-34 (Aug. 1974) (National Science Foundation).
138. The quota will not be exhausted if the market fails to provide enough developers whose emissions do not exceed their permitted share of the quota. Eventual exhaustion of the quota in reaching the goal of maximizing industrial development consistent with national ambient air quality standards is contemplated in the quota design.
139. Improved technology must always be employed to reduce existing pollution levels whenever new polluting industry would be foreclosed without such reductions. 1977 Amendments, § 173, 42 U.S.C.A. § 7503 (West Supp. 1978).
140. Some method is needed for allocating the emissions available in any one year. The Petaluma growth management plan allocated the amount of new housing available annually through open competition. See text accompanying notes 152-56 infra.
141. It may be impractical to retrofit plants built without improved control technologies. For a discussion of technologies under development for the removal of pollutants from coal combustion, see Kirschten, Converting to Coal—Can It Be Done Cleanly?, 9 NAT'L J. 781 (1977).
142. For a typology of growth management systems, see R. Einsweiler, R. Freilich, M. Gleeson & M. Leitner, The Design of the State, Regional and Local Development Manage-
that apply to limits on the quota emissions assignable to any one developer.

These considerations make it difficult to select an agreeable method for allocating emissions under the JEQ and FZEQ strategies. No allocation method is entirely free of subjective judgments that may make the distribution of emission rights somewhat arbitrary.143 In the discussion that follows, no preferred method of allocation is assumed.

\[D. \text{ The Equal Protection Issues in the Allocation of Development Rights Under the Quota}\]

Legal precedent does not notably assist the analysis of equal protection objections to the sequential distribution of development opportunities. As Professor Krasnowiecki has pointed out, "there was a sense running through standard zoning that you cannot establish regulations for an area that would allow one landowner to deprive the other of a pro-rata share of permissible development."144 An emission quota has just this effect because it places a limit on the emissions available in the area covered by the quota. Assignment of all these emissions to one developer would deprive other developers of their pro-rata share.

Although rules limiting the percentage of emissions available to a single developer or in a single year may raise additional problems, the underlying issue remains the same. Emissions are still allocated sequentially to developers whose proposed projects are within the percentage limitation until the quota is exhausted. Alternatively, they are allocated sequentially until the annual quota is exhausted.

In the Ramapo decision,145 the growth management program contained no explicit quota; it prohibited development when necessary public facilities and services were not available. Since new services and facilities were to be provided gradually over a period of years, the Ramapo program contained an implicit annual quota of development rights.146 The court upheld the program as "a bona fide effort to maximize population density consistent with orderly growth"147 and as a means "to insure continuous development commensurate with the
Town's obligation to provide" the necessary facilities. By analogy, Ramapo may support a "bona fide effort" to provide for the "orderly" allocation of emissions under an annual percentage of quota rule. The applicability of the Ramapo case to emission quotas nevertheless remains doubtful because the "orderly" allocation of emissions under an emissions quota is not necessary to achieve its air quality objectives. The question not squarely addressed in Ramapo is whether the method for selecting development projects is amply shielded from any equal protection objection. The New York court upheld the municipality's decision to require facilities before development. The allocation of emissions under a quota need not be "orderly" in this sense.

The Ninth Circuit Court of Appeals has also considered the use of quotas in growth management programs. In Construction Industry Association v. City of Petaluma the city imposed a five-year, 500-unit annual quota on new housing development in order to achieve a more orderly growth pattern. Annual housing development opportunities were awarded to developers through a competitive point system based on conformity with the city's general plan, good architectural and environmental design, and provision of low and moderate income housing and various recreational facilities.

Most of the Petaluma opinion focused on due process issues raised by the exclusionary purpose of the quota. The court found that adoption of the quota for growth management served acceptable police power objectives. Unfortunately, the court gave no attention to the possibility that development would be foreclosed once the annual quota was exhausted. Neither was there an objection that the criteria used to allocate annual development rights did not fairly distinguish among developers. The case is therefore of limited value in appraising the equal protection objections likely to be raised to the administration of an emission quota. At most, the Petaluma decision may be read as implicitly approving a temporary annual limitation on development under a residential quota. The court might have considered the constitutionality of the allocation rules under which the quota was distrib-

148. Id. at 379, 285 N.E.2d at 302, 334 N.Y.S.2d at 152.
149. See text accompanying note 140 supra. Ramapo does not specify a preferred method of allocating emissions under the annual quota.
150. The EDZ alternative avoids the necessity of sequential distribution entirely. The availability of a less restrictive means of achieving the government's objective is discussed in note 160 infra.
151. 522 F.2d 897 (9th Cir. 1975), cert. denied, 424 U.S. 934 (1976).
152. Id. at 901.
153. Two of the plaintiffs claimed the plan adversely affected the value of their land for residential uses. Id. at 903-04.
154. The express purpose was to prevent substantial numbers of people from moving to the city. Id. at 906.
uted annually, but did not do so, focusing instead on the potential of the quota for exclusion.\textsuperscript{155}

The degree of judicial scrutiny applied to emission quota allocation strategies will affect the outcome of an equal protection challenge. In applying the relaxed standard of review used to test the validity of laws affecting economic interests, the courts almost always defer to the legislative choice of means to achieve a legitimate governmental interest.\textsuperscript{156} Restricting industrial development in already polluted areas is certainly rationally related to the maintenance of air quality standards. When the quota assignment in any given subarea is exhausted, further development can be restrained.

Whatever the standard of review, the line between equal protection and due process taking issues is not very sharp. Justice Holmes' "average reciprocity of advantage" principle is calculated to ensure that individual landowners within a designated area are not singled out to bear regulatory burdens without special justification.\textsuperscript{157} Emission quota allocation rules accommodate conflicting interests by restraining some developers in favor of others having no greater claim to preferential treatment. Equal protection claims arise in this situation because

\textsuperscript{155} Although the court did not address these potential equal protection problems, it did point out in a footnote that its due process inquiry was "not unlike" an equal protection inquiry. \textit{Id.} at 906 n.11. It noted that most legislation distinguishes among different classes of persons or business enterprises, and that the validity of the Petaluma quota turned on "whether the exclusion bears any rational relationship to a legitimate state interest." \textit{Id.} at 906. Since the court, at this point, was considering the validity of the purpose of the entire plan, the state interest was exclusion. The inquiry for equal protection purposes should simply have been whether this interest was legitimate. Neither did the court consider the severity of the plan's impact on the landowners' parcels. The only issue considered was the legitimacy of the police power objectives and not whether the plan might foreclose development by any one developer and therefore result in a taking. The court's reference to equal protection norms was probably not intended to indicate approval of the criteria used to allocate the annual development rights.

\textsuperscript{156} While judicial deference usually means that the court declines to analyze in detail the effect of a law's operation, a regulation is occasionally invalidated because a classification does not further the statutory goals. See, e.g., Eisenstadt v. Baird, 405 U.S. 438 (1972). The Court employed the rational relationship test to invalidate a statute which made it a crime to dispense contraceptives to unmarried persons. Before noting the lack of a rational relationship between the marital classification and any of three possible statutory objectives, the Court's opinion states that the equal protection clause prohibits states from according different treatment "to persons placed by a statute into different classes on the basis of criteria wholly unrelated to the objective of that statute." \textit{Id.} at 447 (quoting Reed v. Reed, 404 U.S. 71, 75-76 (1971)). The Court's "divide and conquer" approach to the three possible legislative purposes has been criticized as inconsistent with the traditional rational basis test, thereby demonstrating the test's inability to screen out questionable legislative classifications in a principled manner. Note, \textit{Legislative Purpose, Rationality, and Equal Protection}, 82 \textit{Yale L.J.} 123, 124-28 (1972).

\textsuperscript{157} See text accompanying notes 32-33 supra. Even the tolerant view of land use restrictions adopted by the Supreme Court in its \textit{Penn Central} decision suggested that restrictions would be upheld if reasonably related to the production of a widespread public benefit "and applicable to all similarly situated property." 438 U.S. at 133 n.30.
the agency administering the quota selects the landowner who may de-
velop. The first-come, first-served rule may be preferable because the governmental agency does not make the quota allocation but leaves the distribution of emissions under the quota to the private market.

Professor Michelman has noted that, with the exception of special commodities such as voting or criminal defense, "the risk of exposure to markets and their 'decisions' is not normally deemed objectionable, to say the least, in our society."  

CONCLUSION

This Article considers the constitutional problems which emission quotas are likely to present. Due process problems arise because emission quotas limit the emissions available to landowners in the areas covered by the quota. Some quota programs may foreclose new industrial development once the quota has been exhausted; others may impose burdensome land acquisition requirements. Equal protection problems arise from the manner in which emissions available under the quota are allocated to individual developers.

The most serious taking objections to Jurisdictional and Floating Zone Emission Quotas will arise if the land use restrictions imposed are so severe that a confiscation can be found. Confiscation arguments are strongest when the quota prohibits industrial development on a site for which no reasonable alternative use of the land remains. Proper administration of local zoning can avoid this situation. Courts may also rely on the health-related objectives of the quota to justify severe land use restrictions imposed on developers. In addition, the avoidance of harm rationale may support the preservation of an essential environ-

158. Sax, supra note 51, at 169. Sax calls this "the equal protection dimension of compensation law." Id.

159. But unlike other resources allocated by unregulated market forces, emission rights become valuable only as a result of governmental intervention. Thus, the first-come, first-served rule may require greater justification in the emission quota situation. A governmental program destined to foreclose certain land uses arguably must allocate a fair proportion of the previously unlimited development potential to all similarly situated landowners.

EDZ presents no equal protection problems in distributing the total emissions allowed in a geographical area. See text accompanying notes 126-27 supra.

Moreover, the Penn Central Court held that a land use restriction should be "reasonably necessary to the effectuation of a substantial government purpose." 438 U.S. at 127. This seems to imply that the existence of a more reasonable and clearly less restrictive means to achieve the goals of a regulation can cause the Court to view a severe restriction as a taking. See Marcus, supra note 33, at 742. If this aspect of the doctrine is pursued, then EDZ may be considered a less restrictive alternative to FZEQ or JEQ programs. On the other hand, a well considered legislative judgment that the latter programs better serve the needs of the community, or that the land acquisition requirements of EDZ are more burdensome, should be accorded great respect in the courts.

mental resource despite severe land use restrictions. Finally, courts may view severe restrictions imposed by emission quotas as justifiably resolving conflicting demands in favor of the public's collective rights to clean air.

Emission Density Zoning may raise taking objections if it requires land assembly in excess of what the zoning ordinance demands. Court decisions upholding similar requirements under analogous land use regulation programs support the land assembly requirement under EDZ as a measure for internalizing the negative costs of air pollution. A taking may be found only when land assembly is impossible and no reasonable use remains for the smaller parcel that is compatible with surrounding uses.

Equal protection problems arise out of the temporal allocation of development rights under Jurisdictional and Floating Zone Emission Quota strategies. Sequential distribution by governmental bodies of limited development opportunities have only recently received judicial scrutiny. These problems are not unique to emission quotas, but are latent in any land use control that allocates limited development as applications are received. If a first-come, first-served basis for allocating an emission quota is adopted, it will only mirror the comparable implicit allocation rule usually characteristic of this type of land use regulation. An allocation rule of this type has not been squarely challenged, but should find acceptance under conventional equal protection presumptions deferential to "rational" classifications in regulatory programs affecting economic interests. Cases approving phased development controls in growth management programs may support explicit allocation rules under emission quotas that limit the sequential allocation of available emissions. Equal protection objections will not arise under Emission Density Zoning because all landowners share proportionately in the quota assigned to a geographical area.

Emission quotas are simply an example of a regulatory program imposing heightened restrictions on the use of land to maintain environmental quality. Like other environmental controls, the emission quota raises new and vexing constitutional problems. The law as developed does not provide clear answers to all of the problems, but does suggest that a carefully implemented emission quota strategy will withstand constitutional challenge.