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The Impact of Variances: 
A Study of Statewide Zoning

David P. Bryden*

When a zoning board dispenses variances, one may evaluate its performance from any of three perspectives: Has it followed the legal criteria for granting relief? Have its proceedings been orderly and fair? Have variances been so frequent as to undermine the policies behind the rules being varied? Legal scholars have stressed the former two questions, treating the third more as an afterthought than as a subject worthy of independent analysis. This is not surprising. Issues of procedural regularity and fidelity to law are certainly important, and they can be discussed by reference to familiar, transcendent values of the legal order. The effects of variances on substantive land use policies, on the other hand, are exceedingly difficult to assess, especially in the context of ordinary municipal zoning, where every ordinance contains a unique hodgepodge of provisions that are often provincial, picayune, or inscrutable.

Zoning, however, is very gradually becoming more uniform and august. Most states have adopted, or are considering, some limited forms of state-imposed regulations—controlling shore-land development, power plant siting, alterations of coastal wetlands, protection of “critical areas,” and so forth.1 This “quiet

* Professor of Law, University of Minnesota. I am indebted to several people for assistance in preparing this article. I received helpful suggestions and encouragement from my colleagues Carl Auerbach, John Cound, and Alan Freeman. Professor Joseph Shapiro, of the University of Minnesota's Limnological Research Center, helped me to walk the fine line between excessive complexity and oversimplification in explaining lake pollution. Some of the research for Part II was done by two students: Mark Johnson ('72) and Steven Wellvang ('72). The data for the tables in Part III were compiled by Nelson Berg ('76), David Gilbertson ('77), Patrick Meade ('77), and Marlene Senechal ('77). Their research was made possible by generous grants from the Graduate School and Mrs. Elsie L. Fesler, who funded the John K. Fesler Memorial Fellowship in memory of her late husband. Mark Shepard ('78) assisted with footnotes.

1. See generally Council on Environmental Quality, Environmental Quality (annual reports 1970-75); Note, State Land Use Regulation—A Survey of Recent Legislative Approaches, 56 Minn. L. Rev. 869 (1972) [hereinafter cited as State Land Use Regulation]. There have been several unsuccessful efforts to enact national land use legislation.
revolution,"\(^2\) though still embryonic, has already created problems about which traditional zoning literature is uninformative.

One of the foremost questions is whether state policies are being nullified by variances. In many of the new zoning systems, the rules are drafted by state planners but administered by local officials.\(^3\) As a result, the efficacy of state-imposed zoning is suspect, partly because of uncertainty about the consequences of local dispensations. How can one determine whether variances are jeopardizing a zoning rule? When this occurs, should we change the rule, the variance criteria, or the division of power between the state and local governments? To reduce the substantive effects of variances, should we adopt reforms different from those that are calculated to alleviate the ethical and legal flaws of variance administration?

Such questions cannot be answered adequately until we have developed methods for monitoring and appraising the substantive impacts of variances. To that end, we will begin by summarizing the literature about variances, noting some of the gaps that are pertinent to our topic. Then, as a case study, we will examine Minnesota's statewide system of shoreland zoning in order to understand the origins and rationales of its rules. Finally, we will appraise data about the extent to which these rules have been undermined by local variances.

I. VARIANCE SCHOLARSHIP

A. THE CONSENSUS

Few legal institutions have been more consistently and vigorously criticized than zoning boards of adjustment,\(^4\) whose
major function is to consider applications for variances. Commentators, while not denying that variances are a necessary “flexibility device,” assert that the boards grant relief too freely, flouting the law by following their own permissive inclinations rather than the stricter standards laid down by the courts.

The principal statutory criterion for variances is “unnecessary hardship.” In construing this opaque phrase, most courts distinguish—at least implicitly—between “use” and “area” (or “bulk”) variances. A use variance, as the term implies, authorizes a use of land that is normally impermissible in the district where the land is situated—for example, a factory in a residential district. These dispensations are regarded as especially

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5. See generally 2 R. ANDERSON, AMERICAN LAW OF ZONING § 13.09 (1968). Boards of adjustment often have other responsibilities as well, such as granting special permits. 3 R. ANDERSON, supra, § 15.01.

6. See generally the sources cited in note 4 supra.

7. 2 R. ANDERSON, supra note 5, § 14.09, at 610-11.

8. Id. § 14.06.

9. Id. § 14.06, at 603.
dangerous because they jeopardize zoning's primary purpose: separating incompatible land uses. In some states, use variances are illegal; in others, they may be granted only if the land in question could not otherwise yield a "reasonable return."

Area variances permit landowners to depart from dimensional rules—building height restrictions, setbacks, and the like. They are more common, but less controversial, than use variances.

Although often purporting to apply the same criteria to both kinds of variances, most courts hold, in effect, that "practical difficulties" suffice to justify an area variance. This test does not require a showing that without a variance the land cannot yield a reasonable return. Nevertheless, the practical difficulties test is more stringent than it may sound. Although the requisite difficulties need not amount to an unconstitutional "taking," they must consist of more than proof that a variance would be useful to the applicant, for instance by increasing his profits. The difficulties must be attributable to peculiarities of the land itself, not to some independent personal problem such as bad health or business opportunities. The applicant's problem must also be "unique," which seems to mean that it must not be so widely shared by surrounding landowners that the appropriate remedy is to amend the ordinance. As with use variances, the boards should not grant an area variance merely because the neighbors do not object or because those who support the applicant outnumber the protesters. Similarly, no area variance should be granted on the ground that the rule is unwise or that the deviation seems harmless, just as no use variance should be granted on the ground that the neighborhood needs to be rezoned. Such changes are "legislative," and should be made only by amending the ordinance.

10. See, e.g., Dukeminier, supra note 4, at 281.
12. Id. § 14.07, at 604.
13. See, e.g., Dukeminier, supra note 4, at 286 (more common); 3 R. Anderson, supra note 5, § 14.45, at 3 (less controversial).
15. Id. § 14.47.
16. Id. § 14.48.
17. Id. § 14.50.
Critics contend that, by departing from these standards, the boards have usurped legislative prerogatives, undermined public confidence in zoning, deceived persons who buy land without knowing about nearby variances, denied equal treatment to applicants, permitted destruction of neighborhoods, subverted comprehensive plans, and endangered our democratic institutions. Tabulations from numerous jurisdictions reveal that the approval rate for variance applications consistently ranges from about 50% to well over 75%. Of course, these figures standing alone are not adequate proof of impropriety, but they are said to be "ground for suspicion." One distinguished observer

21. See, e.g., Blucher, supra note 4; R. Bryden, supra note 4, at 297; Alameda County, supra note 4, at 109.
22. See, e.g., Dukeminier, supra note 4, at 322.
24. See, e.g., Babcock, The Unhappy State, supra note 4, at 511, 536-37; Dukeminier, supra note 4, at 325, 330-35; Note, Zoning Variances, supra note 4, at 1406.
26. See, e.g., Dallstream & Hunt, supra note 23, at 227-28 (citing the common charge that by granting variances too freely boards of adjustment are "undermining the whole zoning structure"); Morris, Toward Effective Municipal Zoning, 35 Wash. L. Rev. 534, 577 (1960) ("with the possible exception of 'spot zoning,' nothing can cause a more general breakdown of a zoning system than an indiscriminate practice of granting variances"); Reps, supra note 4, at 282 (zoning cannot aid in comprehensive planning "if the board of appeals constantly creates new problems of land use"); Shapiro, supra note 4, at 3 (failure to exercise the variance power sparingly would "challenge the protective aims of zoning" and "endanger the integrity and desirability of urban neighborhoods"); Wexler, supra note 4, at 74-75 (variations now endanger "the very system they were designed to protect"); Alameda County, supra note 4, at 111 ("the power to grant variances should be exercised sparingly because of the detrimental effect of variances upon comprehensive zoning plans"); Statutory Prerequisites, supra note 4, at 398 (quoting Kline v. Louisville & Jefferson County Bd. of Zoning Adjustment and Appeals, 325 S.W.2d 324, 326 (Ky. Ct. App. 1959)) (by use of variances or exceptions an adjustment board may "amend a city ordinance in such a way as to render it useless, or even nullify the zoning ordinance itself"); Variance Administration in Indiana, supra note 4, at 241 (since an excessive number of variances changes the zoning scheme, variances should be granted only sparingly).
27. See, e.g., Blucher, supra note 4, at 96; Dukeminier, supra note 4, at 322.
28. See R. Bryden, supra note 4, at 293 & n.32; Dukeminier, supra note 4, at 320-21; Syracuse Board, supra note 4, at 634.
29. Reps, supra note 4, at 281.
estimated that 50% of variance decisions are "probably illegal usurpations of power"; another concluded that the boards "act illegally in well over half the cases they hear"; and a third says that "if the courts really superintended... [the issuance of variances], upwards from ninety percent of the variances granted would probably be found invalid." Professor Anderson reports that "[a]n examination of 200 decisions in which the courts reviewed board of appeals decisions granting or denying applications for use variances discloses that 65% of the variances granted by boards were reversed by the courts. Only 25% of the board denials were reversed." Empirical studies of variance administration in particular jurisdictions are replete with examples of illegal variances. In Alameda County (California), for example, one author concluded that in only 15 of the 284 cases in which a variance was granted by the board had the applicant adduced evidence of special circumstances sufficient to warrant a variance under the applicable legal standards.

This tendency to ignore the legal criteria might be less distressing if the boards were composed of, or were following the advice of, professional planners. One might then infer that illegal variances are granted because the judicial variance criteria stifle sound planning. But the evidence, as commonly interpreted, suggests otherwise. Typically, a board of adjustment is composed largely of realtors, small businessmen, and other political appointees who "have the same general perspectives as the litigants who appear before them," deriving from "identifications with the business community and the propertied class." These laymen decide cases that sometimes involve complicated technical evidence—about traffic patterns, sewage disposal capacities, and so on—without paying much attention to planners' advice. A Kentucky study disclosed that “[o]f 102 requests,
the staff recommended denying 75. The Board denied 26. . . . The staff recommended granting 25 requests for variances; the Board granted 23 of these requests.\textsuperscript{37} In Alameda County, the planning commission or the board rejected the staff recommendation concerning 208 of the 332 variance applications filed during one year. "Significantly, in each instance the staff had recommended disapproval of the application because the applicant had not demonstrated circumstances or hardship justifying a variance."\textsuperscript{38} We have, then, copious evidence that zoning boards tend to ignore both the law and expert advice.

Scholars have also criticized the boards' procedures. Typically, the petitions are badly drafted, perhaps because few boards insist that applicants even allege facts that would constitute legally adequate grounds for relief.\textsuperscript{39} In some jurisdictions, applications are processed hurriedly, without adequate time for careful consideration of individual cases. In Philadelphia, for example, the board heard from 60 to 70 cases during an average day, usually spending about four minutes on each case.\textsuperscript{40} As in many administrative proceedings, the judicial safeguards of testimony under oath and rules of evidence are not generally required,\textsuperscript{41} and rumors abound of arbitrary evidentiary rulings,\textsuperscript{42} ex parte communications,\textsuperscript{43} conflicts of interest,\textsuperscript{44} favoritism toward acquaintances,\textsuperscript{45} and decisions determined by the quality of the objectors' vocal cords.\textsuperscript{46} Some boards transcribe the proceedings; but many others place that responsibility on the parties, so that one who wishes to preserve a record for a possible appeal to the courts must hire his own stenographer.\textsuperscript{47}

\begin{thebibliography}{99}
\bibitem{37} Dukeminier, \textit{supra} note 4, at 329.
\bibitem{38} Alameda County, \textit{supra} note 4, at 108.
\bibitem{39} See Dukeminier, \textit{supra} note 4, at 276; \textit{Statutory Prerequisites, supra} note 4, at 404-05.
\bibitem{40} \textit{The Philadelphia Experience, supra} note 4, at 527.
\bibitem{41} See, e.g., Dukeminier, \textit{supra} note 4, at 276-77; \textit{The Philadelphia Experience, supra} note 4, at 528. See generally 3 R. ANDERSON, \textit{supra} note 5, § 18.01.
\bibitem{42} See, e.g., Wexler, \textit{supra} note 4, at 78-79.
\bibitem{43} See, e.g., Shapiro, \textit{supra} note 4, at 15; Wexler, \textit{supra} note 4, at 79-81 & n.36.
\bibitem{44} See, e.g., Babcock, \textit{The Unhappy State, supra} note 4, at 536.
\bibitem{45} Id. at 514.
\bibitem{46} See, e.g., Babcock, \textit{Chaos, supra} note 4, at 2.
\bibitem{47} See \textit{The Philadelphia Experience, supra} note 4, at 528 (all proceedings are recorded by a stenographer, but the record is transcribed

\end{thebibliography}
The minutes of meetings are frequently skimpy, perhaps reciting conclusory phrases from the statutory criteria, but without meaningful findings of fact or lucid written explanations of the reasons for decisions.48 "When the asserted grounds for variances differ widely, the repeated use of identical resolutions . . . may be serving as a substitute for thoughtful consideration."49

The shortcomings of individual boards, serious enough in isolation, are magnified by the absence of statewide procedures. Richard Babcock observes that in most other administrative systems the risk of discrimination among applicants is reduced "by a uniform system of practice and by an administrative ethos, enforced by a monolithic organization."50 In zoning, however, every one of the hundreds of local governments in a state may—within broad limits—invent its own idiosyncratic rules for conducting hearings. As a result, variance decisions carry the implicit risk of invidious discrimination, because of the "aboriginal ethical code" of an "atomistic" system that "possesses no cohesive body of principles, is multiform in its methods for handling complaints and is composed of constantly proliferating and unconnected units."51

B. REFORMS

Most critics have concluded that state legislatures and administrative agencies must bear the main responsibility for improving variance administration.52 Several reforms have been

only if an appeal is taken to a court); Dukeminier, supra note 4, at 277; Wexler, supra note 4, at 89; Statutory Prerequisites, supra note 4, at 404.

48. See Dukeminier, supra note 4, at 277; Shapiro, supra note 4, at 13-14; Sullivan, Flexibility and the Rule of Law in American Zoning Administration, in LAW AND LAND 129, 137 (C. Haar ed. 1984); Wexler, supra note 4, at 83-84; Statutory Prerequisites, supra note 4, at 404; The Philadelphia Experience, supra note 4, at 529.

49. Alameda County, supra note 4, at 108.
50. Babcock, The Unhappy State, supra note 4, at 511.
51. Id. at 511, 538. Thus a disgruntled property owner might seek a variation from the board of appeals, a variation from the city council after a hearing by the board, or an amendment from the council after a hearing by the board or by some "commission or committee," depending entirely upon local custom. Neither the courts nor local officials have sensed any distinction between the functions of these methods of relief and there are, therefore, whatever the particular circumstances, almost as many methods for obtaining local relief as there are municipalities and counties in Illinois which have zoning ordinances.

Id. at 519.
52. For a good discussion of the limitations of litigation as a tech-
suggested. In jurisdictions where use variances are still permissible, some authors would abolish them, forcing the applicant to seek legislative or judicial authorization for his proposed use. Another popular idea is to change the boards' composition, particularly by requiring that planners be appointed. Many other proposals are calculated to make variance hearings more like trials by requiring legally sufficient petitions, testimony under oath, rules of evidence, and written decisions that thoroughly explicate the boards' findings and reasoning. Recognizing that the judicial variance criteria are abstract and sometimes confusing, some writers say that the ordinances should contain detailed criteria for recurrent types of cases. A few of the most thoughtful commentators go further, arguing that the judicial variance criteria are too confining. They perceive a need for dispensations in cases where a variance—although not meeting all of the present legal criteria—appears to be harmless or even desirable.

The broadest and most plausible reform would be to create a state land use commission, whose responsibilities could include hearing appeals from local variance decisions, drafting variance procedures and criteria, and prescribing substantive rules on matters of regional or statewide concern. Some of the other

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53. See, e.g., Anderson, supra note 4, at 387; Horack, Emerging Legal Issues in Zoning, in AMERICAN SOCIETY OF PLANNING OFFICIALS, PLANNING 1954, at 146, 151; Reps, supra note 4, at 296; Shapiro, supra note 4, at 21-22.

54. See, e.g., Wexler, supra note 4, at 88; Variance Administration in Indiana, supra note 4, at 247-49. Some believe that a single administrator should be empowered to grant area variances. See Reps, supra note 4, at 296 (suggesting that the lay board should be replaced by a board of experts or by a single zoning appeals administrator).

55. See, e.g., Dukeminier, supra note 4, at 335; Shapiro, supra note 4, at 23; Variance Administration in Indiana, supra note 4, at 251-52.

56. In legal terminology, this would convert the dispensation from a “variance” to an “exception.” See Variance Administration in Indiana, supra note 4, at 250.

57. See Dukeminier, supra note 4, at 339-50 (attributing the variance problem largely to the nature of “Euclidean” zoning); Green, Rough Justice: Baby or Bath Water? 13 ZONING DIG. 161 (1960) (defending the boards of adjustment); Sullivan, supra note 48, at 142-43 (suggesting less confining legislative standards for variances, combined with the creation of specialized courts which would be authorized to grant variances).

58. See R. BABCOCK, supra note 52, at 166-73. Babcock suggests the creation of a state administrative agency with authority: (1) to enforce a statutory mandate for uniform rules of procedure; (2) to hear all ap-
proposals require sophisticated draftsmanship and administration, sharpened by the gradual accumulation of expertise. These are the classic reasons for establishing administrative agencies, since legislatures lack the time and talent to enact comprehensive regulations. Without supervision by a state land use agency, no other reform is likely to be sufficiently uniform, enforceable, and insulated from local politics. Besides, variances are only part of the problem of zoning administration, which in turn is only part of the problem of local zoning. State land use agencies could integrate variance reforms with other innovations, for instance by drafting special criteria for variances from particular state-imposed rules.

C. SOME UNANSWERED QUESTIONS

On the whole, variance literature has demonstrated a need for measures designed to create a greater degree of uniformity, fairness, and adherence to law. As the states continue to assert greater powers over the substance of land use controls, it seems both inevitable and proper that they will eventually begin to establish minimum standards for variance administration. Doubtless, many political battles lie ahead; but the purely intellectual foundations for reforms have already been laid. We hardly need to await an article showing that Sauk Centre's board of adjustment does not closely adhere to the law.

We do, however, need some new kinds of scholarship about variances. To begin with, most commentators have been content to chastise the boards for deviating from the law, without seriously questioning whether the judicial tests make sense in the kinds of cases in which the boards most often ignore them. We also have not studied the extent to which illegal variances are attributable to imperfect—or even foolish—substantive zoning rules. The orthodox analyses are almost wholly legalistic, simply saying that the boards should not covertly amend the

peals from rulings of local boards that have the power to grant or deny variances, amendments and special uses; and (3) to grant cash awards in some cases "where the fairest solution is to sustain the regulation but to compensate the landowner for the loss." Id. at 168. Babcock would not limit this agency to the passive role of waiting for disputes to be brought to it. He says that the agency should have a general rule-making power within the statutory framework so that it could suggest guidelines for local and regional planning decisions. Many of these and related ideas are now embodied in the American Law Institute's Model Land Development Code (1975).
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ordinances, just as they should not alter the judicial criteria for variances.

Most authors seem to assume that the criteria for granting variances must be strict because otherwise zoning rules will be so riddled with exceptions as to be ineffective. Variances, we are told, were originally meant to be a "safety valve"; but instead they have "ruptured into a steady 'leak.'"59 On the current of this metaphor, scholars glide smoothly to Pomeroy's conclusion that "it doesn't take very many such leaks to exhaust the strength of the zoning plan."60 Another neat syllogism begins by citing the venerable maxim that variances should be granted "sparingly." The author then refers to the large numbers of variances and the high percentages of applications granted as proof that the boards have ignored the wisdom of zoning's Founding Fathers.61

The evidence supporting these ipse dixits is remarkably sparse: the total number of variances granted in a particular jurisdiction, the percentage of applications granted, and the number of illegal variances do not—even taken together—establish anything about the substantive effects of variances. To illustrate this point, here are a few hypothetical situations.

1. Voluntary Compliance

Assume that the Village of Fraser's zoning ordinance requires that buildings be set back at least 30 feet from roads. Prior to adoption of this rule, the voluntary setback pattern was as follows: of every 100 houses on lots contiguous to roads, one was built within 30 feet of the road. To simplify the arithmetic, suppose that this one was always located 20 feet from the road, while the others were always exactly 30 feet back. This voluntary pattern, we will assume, had persisted for many years and was not evolving. After adoption of the setback rule, the setback pattern did not change. Still, one of every 100 landowners wished to build 20 feet from the road. Invariably, these people obtained variances authorizing them to

59. Shapiro, supra note 4, at 9. For a collection of similar apprehensions, see the authorities cited in note 26 supra.
60. Pomeroy, Losing the Effectiveness of Zoning Through Leakage, in PLANNING AND CIVIC COMMENT 8-9 (1941), quoted in Reps, supra note 4, at 281.
61. See Variance Administration in Indiana, supra note 4, at 244 & nn.28 & 29.
do exactly what they wished. All of the variances were illegal.

In such circumstances, the number of setback variances might be very small, and yet the effectiveness of the rule as a method for changing conduct would have been wholly vitiated by variances. But in another, more important sense, the rule may not have failed. We presumably care more about achieving a certain result than about whether the law has helped us to achieve it. If we achieve it by voluntary conduct, so much the better. Fraser's setback rule, though impotent as a coercive force, is almost entirely successful as an aspiration.

Let's assume that the rule's purpose was simply to prevent obstruction of motorists' views of the road. The question then is whether an occasional ten-foot departure from the rule appreciably increases the likelihood of accidents. If not, then the board's leniency, however culpable it may be from a legal or ethical point of view, does not appear to be responsible for thwarting any purely substantive policy.

If, on the other hand, the landowner has not irrevocably committed himself to compliance with the rule in question (as by building beyond the setback line), his "compliance" may be misleading. Suppose that a county has prohibited alterations of lakeshore marshes. If 95 of the 100 landowners affected by this rule have not sought dispensations, but five sought and received rezonings or variances, then we have grounds for fearing that eventually all of the marshes may be destroyed. In this hypothetical, the 95 "complying" landowners are free to change their minds, and, if they do, the record provides no basis for assuming that the board will deny their requests for relief.

2. Multiplier Effects

In our first example, we assumed that the setback variance pattern was static. In some circumstances, it may be dynamic. For example, many critics say that illegal use variances commonly generate other use variances granted to applicants who cite the earlier dispensations as evidence that the district is not purely residential, until eventually whole neighborhoods change from residential to commercial. Similarly, the original setback variances in our first hypothetical case, though they look insignificant, may generate a string of dispensations that will drasti-

62. See, e.g., Neighborhood Decline in Illinois, supra note 4, at 480.
cally undermine the rule. On the other hand, this process may be less common than the critics suppose. The causal relationship between successive variances may be more apparent than real; and no one has shown that the multiplier effects of illegal variances are one of the important causes of, for example, neighborhood deterioration. Instead, the commentators have relied on anecdotes and surmises.

3. The Bad Rule

Fraser's zoning scheme does not provide for inexpensive housing. Instead, by imposing large minimum lot sizes, prohibiting apartment houses, and using other familiar devices, the Village has preserved its character as a prosperous suburb. Modern commentators regularly condemn such "exclusionary zoning," arguing forcefully that every metropolitan community should accept its fair share of low-income housing. The proper way to do this, of course, is by amending the ordinance, not by granting illegal variances for high-density developments. In addition to being illegal, such variances are less democratic, less systematic, and conceivably more likely to be granted or withheld for invidious reasons than are legislative amendments.

Nevertheless, if we find that Fraser's board of adjustment has granted illegal variances from undesirable rules, a full accounting of its performance should reflect the flaws of the rules, as well as the flaws of the manner in which the rules have been modified. More pragmatically, our first task should be to improve the rules, rather than to devise reforms whose main purpose is to make variances more difficult to obtain.

4. The Political Safety Valve

According to zoning theorists, variances should function largely as a legal safety valve, preventing unconstitutional "takings" of private property. In fact, they may more often be a political safety valve. After all, many laws survive only because

64. See Southern Burlington County NAACP v. Township of Mt. Laurel, 67 N.J. 151, 336 A.2d 713, appeal dismissed, 423 U.S. 808 (1975). The Court indicated that use variances—many or most of them apparently illegal—have served to circumvent undesirable prohibitions against apartment houses in municipalities throughout New Jersey. 67 N.J. at 181 n.12, 336 A.2d at 729 n.12.
65. See Shapiro, supra note 4, at 9.
they usually are not enforced. These rules are not necessarily “bad”; they may merely be unpopular. But for practical purposes, the appropriate analysis is similar. In principle, the rule should be changed by the local legislature. If, instead, it is being whittled away by variances, it seems better—or at least more realistic—to change the rule before trying to curb the variances.

5. Sacrifices on the Altar of Uniformity and Predictability

The Board authorized Widow Green to use one room of her house as a small antique shop, an impermissible use in the residential district where she lived. They were swayed by her financial plight, her understandable desire to remain in the old family home, and supportive testimony by friendly neighbors. Nevertheless, since her problem was due to personal financial and psychological needs, not to peculiarities of her land, this variance was illegal. Still, it seems innocuous, at worst, and might even be described as a small triumph for justice and rational regulation. The situation resembles the “bad rule” problem insofar as it reveals an imperfection in the crude generalization that the residential district expresses. But here the rule should not necessarily be redrafted. It may be impossible to anticipate all the situations in which exceptions are appropriate. Perhaps the variance criteria should be changed; but again the problem may be that all generalizations are imperfect, not that new generalizations are needed. As in every legal context, we may applaud flexible rough justice; or we may instead regretfully conclude that some people should be sacrificed on the altar of uniformity and predictability. Whichever position one adopts, platitudes about destruction of comprehensive plans do not fairly reflect the conflicting values that are at stake.

The conventional empirical studies of variance administration are reasonably rigorous in determining whether the boards...
apply the law, but wildly speculative about whether their failure to do so seriously jeopardizes important substantive goals. The longest explicit discussion of this topic is a student note about protection of Chicago’s “middle-aged residential areas, bordering on slums, from social and physical deterioration.” This piece, published in 1953, relies extensively upon reports of municipal committees as authority for a series of propositions that can be summarized as follows: Chicago’s neighborhoods are rapidly becoming blighted; although “[t]here is a host of reasons” for this phenomenon, “[o]ne of the principal causes of premature neighborhood decay is the mixing of incompatible land uses”; zoning amendments and variances often authorize such mixing; there have been 1,020 amendments and 2,640 variances since 1942; if dispensed by “an enlightened planning body” even such large numbers of dispensations “would not be unduly harmful”; but in Chicago they were granted by politicians who generally didn’t ask for planners’ advice and often voted to advance “narrow ward interests”; with the result that although “[i]ndividual variations may be well grounded . . . it is clear that such a large number of them encourages neighborhood decline.” It all amounts to one non sequitur: “I don’t trust the politicians who are making these decisions, and therefore I fear that unjustifiable rezonings and variances are a significant cause of Chicago’s expanding slums.”

The Dukeminier and Stapleton study of the Lexington Board of Adjustment is much more sophisticated, and contains a thoughtful analysis of discrepancies between the board’s decisions and the relevant law. Concerning the effects of variances, however, these authors speak with uncharacteristic imprecision:

[T]here is some evidence at hand indicating that a high proportion of these variances had an undesirable effect upon the community plan. The planning staff, which is supposed to have specialized knowledge about the interrelation of land uses,

68. Neighborhood Decline in Illinois, supra note 4, at 470 (footnote omitted).
69. Id. at 471 n.9.
70. Id. at 471.
71. Id. at 475, 481.
72. Id. at 475.
73. Id. at 474, 480. One is left with the surprising impression that neighborhood conservation was not one of the “narrow ward interests” that the politicians tried to advance.
74. Id. at 481. The author does not seem to have considered the possibility that “neighborhood decline” may have some desirable consequences. See Southern Burlington County NAACP v. Township of Mt. Laurel, 67 N.J. 151, 336 A.2d 713, appeal dismissed, 423 U.S. 808 (1975).
recommended that 26 variances be granted and 75 denied. The Board granted 76 and denied 26, which is almost a precise reversal of the staff ratio. Other evidence can be found in the sign variances granted. No observer of Lexington over the past few years can fail to note the increasing crass ugliness of the city and the increase in nonconforming signs of every kind. On the New Circle Road alone more than sixty signs have been erected too close to the road, too large, or too high in the air. Three new shopping centers—Idle Hour, Gardenside, and Zan- dale—have had the symmetry of their design spoilt by non-conforming signs. In addition, in an explosion of capitalist enterprise advertising signs have spilled out on the surrounding green farmland, which Westbrook Pegler, who is not given to encomiums, called "the sweetest countryside on earth." The ultimate social and economic cost to the community of the Board's sign dispensations will be difficult to measure. But undesirable effects may already be observed. If the other variances granted have as unfortunate effects as the sign variances, the integrity of the comprehensive plan may be in more danger than we think.75

Surely, this reasoning leaves something to be desired. The planners may have been relatively strict because they loved their plans, or because their recommendations followed the law more closely than the board was willing to do,76 or simply because they accepted the unproven assumption that variances gravely undermine the substantive goals of zoning. Granted, illegal sign variances may have contributed to aesthetic degradation in Lexington County. Still, one wonders how much different the area would look without these variances. Take, for example, New Circle Road, where the authors seem to think variances have had a great impact. Elsewhere in the article, they explain that, after an "epic battle," the land adjacent to this road was zoned for business.

Today—eight years later—New Circle Road is lined with drive-ins purveying beds, burgers, booze, and Bardot, as well as more durable goods—all advertised by winking, blinking, or fixed illuminated signs. The only part the Board of Adjustment has played in this garish development is in granting bulk variances, usually for signs.77

In such a place, how much aesthetic degradation can accurately be attributed to the fact that about sixty signs "have been erected too close to the road, too large, or too high in the air"? This is not to say that urban sign regulations are worthless, or that variances are altogether harmless along a commercial highway. The point

75. Dukeminier, supra note 4, at 336-39.
76. To the extent that this occurs, statistics about the frequency with which boards reject staff recommendations add nothing to the proposition that the boards often fail to apply the law.
77. Dukeminier, supra note 4, at 294.
is that illegal sign variances may be a negligible cause of the appearance of a honkytonk strip or even of the aesthetic impact of the signs along the strip. Billboards that deface beautiful countryside are another matter; but here again the authors do not provide evidence that enables the reader to imagine—even roughly—the difference between the appearance of Lexington County with and without sign variances generally or illegal ones in particular.

To be fair, the quoted passage was only a minor part of a painstaking and judicious study of variance administration. The authors' major concern was the quality of justice in variance proceedings—obviously an important topic. But there are purposes for which information about the substantive effects of variances would also be valuable. Consider, for example, the responsibilities of a state agency with plenary powers to fashion substantive and procedural requirements for local zoning. As state planners draft minimum standards for the substantive contents of local ordinances, they must sometimes calculate, among other things, the point at which a rule becomes so strict that—without systematic, stringent, and perhaps politically unacceptable controls over variances—the rule will be nullified by dispensations. If the planners are empowered to draft variance criteria, they must also decide whether those criteria should differ from the judicial tests. Apart from apprehensions about "destruction of zoning," it is difficult to see why an applicant's "purely personal" problems (to cite one familiar hornbook rule) are wholly immaterial to whether he should receive a variance. Why not listen to the landowner's evidence of, for example, independent financial distress? Again, it would be useful to know whether leniency would endanger important substantive interests. Perhaps the answer differs from one rule to another. There is no reason to suppose a priori that the judicial distinction between use and area variances is sacrosanct. Maybe some rules of both types would be effective only with exceptionally strict variance criteria, while others would achieve their purposes even if the criteria were more lenient than the "practical difficulties" test. The courts probably cannot make such refined distinctions; but an administrative agency might eventually be able to do so, at least for a few rules that have created unusually vexatious variance problems.

78. See Table II, at p. 828 infra.
If we knew more about the effects of variances, it would also be easier to appraise proposals for state review of local decisions. Without a colossal bureaucracy, a state agency cannot carefully examine more than a tiny percentage of variance cases. How should those cases be selected? One possibility is for the state to reserve a veto power over variances from land use controls that it has required local governments to adopt.\(^{80}\) This reform would make sense only if the agency were primarily concerned about the substantive impacts of variances, rather than the fairness of variance administration. For the state's interest in fairness is equally great in cases where a variance from a purely local rule has been improperly denied, as it is in cases where a variance from a state-imposed rule has been improperly granted.

Another obvious possibility is to allow aggrieved parties to challenge the local boards' decisions before a state board of zoning appeals.\(^{81}\) Such administrative appeals might be cheaper and quicker than ordinary litigation, and a state board's decisions might make local procedures fairer and more uniform. But it is unclear whether private appeals would suffice to preserve the substantive integrity of every state-imposed rule. Frequently, no one objects to the local variance; and, of course, even if someone does object he may not take the trouble to appeal.\(^{82}\) For instance, one wonders whether improper variances from state-imposed billboard regulations—individually trivial, but perhaps cumulatively significant—could be sufficiently curbed by private appeals. If not, the best solution might be to augment private appeals by providing for automatic state review of variances from rules that are thought to be important,

80. This was done with land use controls promulgated under the Minnesota Wild and Scenic Rivers Act, MINN. STAT. § 104.31-.40 (1976); MINN. REG. NR 81(b) (3) (1974). Under such a narrow statute, the political and administrative problems created by a state veto power may well prove to be manageable.

81. See note 58 supra.

82. See Statutory Prerequisites, supra note 4, at 406-07 (protesters were present in only 23.7% of the cases before the board of adjustment); The Philadelphia Experience, supra note 4, at 542 (protesters appeared in about 38% of the cases). In rural areas or with respect to area variances, the percentages of protesters might be lower. It remains to be seen whether administrative appeals to a state board will be more frequent than litigation challenging variance decisions, which, as a percentage of the decisions, is rare. See, e.g., Dukeminier, supra note 4, at 278 (of 167 cases studied, only two were appealed).
susceptible to significant erosion by variances, and inadequately enforced by private objectors. Or the state might undertake to draft exceptionally precise criteria for such variances, hoping that the local boards will follow these criteria more conscientiously than they have obeyed the relatively abstract and diffuse strictures of judicial decisions.

Obviously, one essay cannot furnish universal answers to such questions. Instead, this Article will suggest methods for gathering and appraising relevant information. The first step is to study the rules, as thoroughly and critically as variances have always been studied.

II. DRAFTING THE RULES

Until recently, most of Minnesota's 87 counties had done little or nothing to regulate development around the state's famous "10,000 lakes." During the late 1960's, however, land

83. Many of the conclusions expressed herein are based on notes of countless conversations between the author and officials of the Minnesota Department of Natural Resources (DNR), whose generosity and candor made this portion of the Article possible. Unless otherwise attributed, the interpretations of official motivation are my own sense of what these officials told me. Some of the interviews occurred (and some of the documents cited were published) at times when the DNR was titled the "Department of Conservation." To avoid confusion, the Department is referred to as the DNR, except in citing the titles of documents that have not been reissued since the Department's title was changed.

The DNR's Shorelands Unit was part of the Waters Section, which was a component of the Division of Waters, Soils and Minerals. James Menter and Michael Hambrock, formerly of the Shorelands Unit, were the primary drafters respectively of the statewide standards and the formulas for classifying lakes. Eugene Hollenstein was the director of the Waters Section. Eugene Gere was, during the drafting period, the Director of the Division of Waters, Soils and Minerals. All interviews with these individuals were held in Minneapolis or St. Paul, Minnesota. To avoid repetitious explanations of the place of the interview and interviewees' official positions, citations to conversations with these officials will contain only the surname and the date.

84. For example, a state official estimated that in 1971 most counties had not yet begun to regulate the placement and construction of individual on-site sewage disposal systems in shoreland areas. The state also had no applicable regulations. Interview with Fred Heisel, Director of the Division of Environmental Health, Minnesota Dep't of Health, in Minneapolis (Jan. 11, 1971). In 1970, only 24 counties had zoning or subdivision regulations; most of these were rudimentary. Hambrock Interview (July 14, 1970), see note 83 supra.

The "10,000 lakes" figure is inexact because, of course, it depends on one's definition of the size and depth of a "lake." There are about 15,291 lake basins of ten or more acres. MINNESOTA DEPT OF CONSER-
use and pollution began to receive enormous publicity. In Minnesota, much of the publicity concerned pollution of lakes, particularly by masses of algae, which often transformed pleasant beaches into scummy messes. Many people attributed this nuisance partly to lakeshore septic tanks, whose effluents tend to fertilize nearby waters.

In Wisconsin, where similar trends were evident, the legislature responded by authorizing a novel system of statewide shoreland zoning. Under this statute, passed in 1966, all counties were required to regulate shoreland development in accordance with minimum standards to be promulgated by the State Department of Natural Resources (DNR). Three years later, the Minnesota Legislature passed a basically identical statute: the Shoreland Management Act of 1969.

Like its Wisconsin predecessor, the Shoreland Management Act applied only to unincorporated lands within 1,000-foot wide corridors around the circumferences of lakes and 300 feet from the edges of rivers and streams. The Act did not dictate specific land use controls. Instead, it delegated this task to the Department of Natural Resources, which was directed to prepare minimum standards for the contents of county ordinances, including but not limited to the following: (a) the area of a lot and length of water frontage suitable for a building site; (b) the placement of structures in relation to shorelines and roads; (c) the placement and construction of sanitary and waste disposal facilities; (d) designation of types of land uses; (e) changes in bottom contours of adjacent public waters; (f) pres-

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87. Minn. Stat. § 105.485(2) (1969), as amended, Minn. Stat. § 105.485(2), (6) (1976). See also Wis. Stat. Ann. § 59.971(1) (West Supp. 1976). Because running water tends to purify itself, septic tank pollution generally affects rivers less than lakes. Thus, the regulated corridors adjacent to rivers are narrower than those around lakes. Gere Interview (Apr. 23, 1976), see note 83 supra. Cf. Kusler, supra note 85, at 37. Municipalities were excluded from the regulatory scheme, partly for political reasons, and partly because most of the undeveloped land where zoning has its greatest impact is in unincorporated areas governed by counties. Gere Interview (Apr. 23, 1976), see note 83 supra. The Minnesota Act was later amended to cover municipalities. See Minn. Stat. § 105.485(2), (6) (1976) (amending Minn. Stat. § 105.485(2) (1969)).
ervation of natural shorelands through the restriction of land uses; (g) variances from the minimum standards and criteria; and (h) a model ordinance.88

The DNR's role, then, was to draft two documents: statewide standards prescribing the essential contents of local shoreland zoning ordinances, and an optional model ordinance illustrating one way to express the minimum standards in suitable language.89 The statutory deadline for county ordinances was July 1, 1972. If a county failed to adopt an adequate ordinance by then, the DNR was required to "adapt the model ordinance to the county."90

A. THE PLANNERS' IDEALS

The Department's regulatory aspirations were vividly portrayed by a picture of "ideal lakeshore development," published by the DNR about a year before passage of the Shoreland Management Act.91

The text accompanying the picture explains that this hypothetical lake is typical of those on which intensive shoreline development has already occurred. It has an area of 500 acres, with an average depth of about 18 feet and "good chemical fertility."92 The eastern shore, which has natural sandy beaches, is already developed: "Many trees were removed and sloping bank areas were leveled to accommodate the building of homes."93 But much can still be saved. Although fishing and boating have increased "markedly," there is still enough space; plenty of fish are being caught; and the water is "clear except for a short period of 'dog days' in August."94

88. MINN. STAT. § 105.485(3) (1976).
89. Although the statute is inexplicit on this point, the DNR treated the model ordinance as an optional example of appropriate language. MINNESOTA DEPT OF NATURAL RESOURCES, PROCEDURAL GUIDE FOR THE IMPLEMENTATION OF COUNTY SHORELAND ORDINANCES 14 (undated) [hereinafter cited as DNR, PROCEDURAL GUIDE].
90. MINN. STAT. § 105.485(4) (1976).
91. Skrypek, Beautiful . . . Or Blighted? An Apprehensive Look At Our Lakeshores, THE CONSERVATION VOLUNTEER, May-June 1968, at 1, 5 (official publication, Minnesota DNR) [hereinafter cited as Skrypek]. The author thanks the DNR for permitting reproduction of the illustration at p. 790 infra. It should be stressed that the article summarized here did not purport to reflect official policies; its author was not one of the drafters of the statewide standards later promulgated by the DNR. Nevertheless, the reader will see similarities between his ideas and those of the drafters.
92. Id. at 3.
93. Id. at 4.
94. Id.
The lake's future depends upon what happens to the undeveloped shoreline where fish "spawn in protected shallow bays and for the most part live and feed along the weedy areas of the
lee shore." Here too "ducks feed on the submerged aquatic vegetation and use the emergent vegetation along shore as cover for protection of themselves and their young. Many other animals use the marshy shoreline, some of the more common being the muskrat, turtle, frog, heron, bittern and red-winged blackbird." Further development would destroy this weedy habitat. More houses might also ruin the lake for everyone, by fouling the beaches with algae nourished by "nutrient rich effluents from septic tanks." Eventually, this pollution would even kill the game fish. The time has come for regulations.

The author of the lakeshore plan suggests that future development should be clustered "away from the shoreline with common beach and boat-launching areas developed for those people not living directly on the lake." The government should buy some of the shore in order, for example, to protect spawning areas. The rest should be zoned to "preserve a certain percentage of shoreline in its natural state" and to "make shoreline development an orderly process." As examples of possible regulations, the article mentions minimum lot sizes, coupled with building and septic tank drainfield setbacks.

With a little less emphasis on fish and wildlife, and perhaps a bit more legal sophistication, this analysis of lakeshore

95. Id.
96. Id.
97. Id. at 7.
98. The ability of fish to withstand pollution generally, and excessive algae resulting from nutrient enrichment in particular, varies among species. As a rule, fish are not adversely affected by nutrients until algal abundance reduces the supply of dissolved oxygen below the requirements of a particular species. Unfortunately, the rarest and most coveted game fish (salmonids, such as trout) are the most sensitive to this pollution, followed by other game fish, and finally by such lowly species as catfish and carp, which often thrive in badly polluted waters. On the other hand, game fish other than salmonids usually can withstand considerable nutrient pollution, well past the point at which the algae become unpleasant to humans, including fishermen, so that lakes with a serious "algae problem" often have excellent fishing. Indeed, if our purpose were simply to increase fish production, we would often wish to fertilize lakes because algae are a basic link in the food chain. For this reason, the proprietors of commercial fish ponds (and of farm ponds) often fertilize them, just as they would croplands. Interview with Dr. Joseph Shapiro, Associate Director, Limnological Research Center, University of Minnesota, in Minneapolis (May 11, 1976). See also Larkin & Northcote, Fish as Indices of Eutrophication, in NATIONAL ACADEMY OF SCIENCES, EUTROPHICATION: CAUSES, CONSEQUENCES, CORRECTIVES 256 (1969) [hereinafter cited as EUTROPHICATION].
100. Id. at 8.
101. The idea that zoning can "preserve a certain percentage of
development could have been written by any planner. Although the author emphasizes conservation, his design implicitly acknowledges other values. One shore is already developed, with sandy beaches and conventional lots. There is a public access. Even on the western shore, development will continue, with a beach and a parking lot, but the houses will be clustered, leaving much of the natural environment intact. These themes—cluster development, minimum lot sizes, protected marshes, building and septic tank setbacks, and preservation of shoreline trees—appear repeatedly in literature about rural planning. They are the planners' ideals.

What follows is an account of the odyssey of those ideals through the labyrinth of the regulatory process.

B. THE PERVERSIVE CONSTRAINTS

Although it did not authorize land acquisition, the Shoreland Management Act was broad enough—by its terms—to authorize the DNR to draft nearly any sort of regulation, subject only to the constitutional limits of all zoning. But most of the statewide standards never approached the constitutional line. By and large, the DNR adopted simple, old-fashioned zoning provisions—setbacks, a sanitary code, procedures for shoreline in its natural state" is, of course, a major oversimplification. Compare State v. Johnson, 265 A.2d 711 (Me. 1970) with Just v. Marinette County, 56 Wis. 2d 7, 201 N.W.2d 761 (1972). See generally Kusler, Open Space Zoning: Valid Regulation or Invalid Taking, 57 Minn. L. Rev. 1 (1972).

102. See, e.g., SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION, FLOODLAND AND SHORELAND DEVELOPMENT GUIDE 25, 73 (1968).

103. "One-fourth, or more than 12.5 million acres of Minnesota's 51.2 million acres are publicly-owned." WATER RESOURCES COORDINATING COMMITTEE, MINNESOTA STATE PLANNING AGENCY, MINNESOTA WATER AND RELATED LAND RESOURCES: FIRST ASSESSMENT 199 (1970). As a glance at any road map will confirm, however, these public lands are not, as a rule, distributed in strips along the shores of lakes and streams. Instead, they are generally huge rectangular tracts (parks, state forests, and so on) created for purposes other than conservation of shorelands. Interview with Philip Olfelt, Assistant Attorney General, Dep't of Natural Resources, State of Minnesota, in St. Paul (May 11, 1976). In some counties, there is so much public land that local citizens rail against "destruction of our tax base," and yet—in these same counties—the shores of the most beautiful lakes and rivers are often privately owned. Id. For rivers, this situation has been partially rectified by passage of the Minnesota Wild and Scenic Rivers Act, MINN. STAT. §§ 104.31-40 (1976); see note 80 supra. There is no comparable statute pertaining to lakes, although, of course, lakes wholly within parks and similar areas are generally well preserved.
approving subdivision plats, and the like. The essential conservatism of the regulations was due to several constraints. First, the DNR's minimum standards had to be sufficiently simple for administration by rural county governments, many of which lacked experience with even the crudest forms of zoning, and few of which were likely to hire a large planning staff. In Cook County, north of Lake Superior—where there are more bears than lawyers—who needs a floating zone? Quite deliberately, therefore, the DNR's planners avoided every sort of procedural complexity. Second, the planners were inhibited by the novelty of statewide shoreland zoning. Even in Wisconsin the system was new, and the other states had no significant regulations or advice to offer. Third, the DNR realized that without considerable support from rural officials and landowners, their standards would fail. Wisely, the authors of the shorelands bill

104. See note 84 supra. In rural Minnesota, some zoning administrators are still not fully versed in the intricacies of land use controls or even of their own ordinances. Perhaps this is partly because some of them augment their meager salaries by concurrently pursuing other careers. Interview with David Milles, Senior Hydrologist, Dep't of Natural Resources, State of Minnesota, in St. Paul (May 5, 1976). Anticipating such difficulties, the drafters of the statewide standards tried to draft "something simple enough so that the counties could adopt it and get going." They rejected, for example, complicated ideas involving separate rules for each watershed, in part because of doubts about the counties' ability to administer elaborate systems. Menter Interview (Oct. 21, 1970), see note 83 supra. 105. Hambrock Interview (May 10, 1976), see note 83 supra. 106. Although it later passed by generous margins on the floors of both houses, the shorelands bill had nearly been killed in legislative committees. Gere Interview (Apr. 23, 1976), see note 83 supra. The following colloquy at the public hearing on the DNR's proposed standards exemplifies the confusion and hostility of some landowners:

Mr. AMBROSE KOTTSCHADE [Executive Director, Property Owners League of Minnesota]: "Then if there is [sic] not enough trees, then the provision is also in there where the county can put in streets and so forth, if the county so desires, and this is the latter part of the bill [sic]."

Mr. JAMES MENTER [responding for the DNR]: "You mean for the subdivision regulations. These apply only to the platted subdivisions."

Mr. KOTTSCHADE: "Only to platted subdivisions, not where it is by metes and bounds, however. Platted subdivisions."

Mr. MENTER: "I don't understand. You are saying that the county has the right to put in roads."

Mr. KOTTSCHADE: "I am just going by what you read in that."

Mr. MENTER: "If you could refer us to the exact section, it would be a little more convenient."

Mr. KOTTSCHADE: "I wish I could. It had to do with roads and sewers and so forth. It was the latter part. But, again, I wish I had my bill with, my copy with and I could refer
had kept its language simple and bland, enabling the legislature to delegate power without having to endorse any particular regulations. Consequently, it was the bureaucrats, not the politicians, who had to decide which rules were politically acceptable. If they misjudged popular sentiments, the legislature might overreact, slashing appropriations or even repealing the statute.

Conscious of its political accountability, the DNR discarded some ideas as too controversial. One such notion was to regulate shoreland farming. Scientifically, it makes no sense to regulate septic tanks while ignoring agricultural land use, which in some regions of the state appears to be a greater source of pollution. Then too, the edge of a lake sometimes blends imperceptibly into marshes and sloughs that a farmer may wish to drain. Thus, if the hypothetical lake map had depicted farmlands, they—like the houses in the cluster development—would probably have been separated from the lake by a buffer of marshes and trees. But farmers, of course, are an extraordinarily powerful pressure group. Already embroiled in a largely futile effort to curb agricultural drainage of wetlands, and well aware that in many counties opposition from farmers could force local governments to resist shoreland zoning, the DNR decided that it would be imprudent to try to control farming around lakes. Hence, the statewide standards neither restrict to but you did mention about the streets and so forth could be put in. In other words, then the property owner is under a constant surveillance and the property owner in essence if this bill were to be adopted and become law, the property owner really does not own the property but he is at the mercy of the county planning agency, the—what did you say the other one was? Mr. MENTER: "The Board of Adjustment."

Mr. KOTTSCHADE: "Okay, and the Minnesota Pollution Agency and the Minnesota Department of Health, and so forth. Thank you."

In the Matter of the Proposed Adoption of Rules of the Commissioner of Conservation Prescribing Model Standards and Criteria for the Subdivision, Use and Development of Shoreland in Unincorporated Areas, Transcript of Proceeding held at the State Office Building, St. Paul, 50-51 (Apr. 29, 1970) (on file at the Minnesota Dep't of Natural Resources, Division of Waters) [hereinafter cited as Transcript].

107. "The more detail you get into on something like that, the more argument you get." Gere Interview (Apr. 23, 1976), see note 83 supra.


110. Gere Interview (Apr. 23, 1976), see note 83 supra. When the primary drafter was asked by a student why the statewide standards did not proscribe grazing in some shoreland areas, he replied: "I can tell
agricultural pollution nor prohibit drainage of wetlands.\textsuperscript{111}

Turning from pollution to aesthetics, the DNR originally planned to regulate tree-cutting. Under early drafts of their proposed rules, removal of natural vegetation was to be controlled within a narrow corridor around each lake. Inside the corridor, landowners could eliminate trees to make room for houses and other essential structures. Thereafter, they could clearcut 25\% of the strip of trees between the house and the lake to create a view of the lake. In the remaining 75\% of the strip, the DNR proposed that “cutting shall leave sufficient cover to screen cars, dwellings, and other structures, except boathouses, piers, docks and marinas, from view from the lake.”\textsuperscript{112} This sounds fair enough; but it was vigorously criticized. Some landowners railed against the proposal.\textsuperscript{113} Perhaps more important, zoning administrators argued that tree-cutting rules would be virtually impossible to enforce and would consequently detract from the ordinances’ credibility.\textsuperscript{114} Troubled by these objections, the DNR compromised, transferring

\footnotesize{\textsuperscript{111} However, some provisions may indirectly preserve wetlands. See Minn. Reg. Cons 72(b) (5) (aa), 73(c) (2), (3), 74(a) (1970). In addition, the optional model ordinance contains suggested land use districts, one of which is a “Special Protection District,” in which the permitted uses are severely restricted so as to preclude most kinds of alterations of the natural topography. See Minn. Reg. Cons 77(2.3) (1970). After examining the DNR’s file of county ordinances and official maps, however, we found only a few counties that seemed to have (1) included this or a comparable provision in the ordinance, (2) defined the permitted uses so restrictively as to preclude residential development, and (3) included private land within such districts. Consequently, it seems pointless to discuss whether such regulations, as applied to shoreland marshes, would be an unconstitutional “taking.” See note 101 supra.}

\footnotesize{\textsuperscript{112} Statewide Standards and Criteria for Management of Shoreland Areas of Minnesota, Preliminary Draft, Minn. Reg. Cons 73(b) (4) (Mar. 24, 1970) (on file with the author).}

\footnotesize{\textsuperscript{113} Gere Interview (Apr. 23, 1976), see note 83 supra. Timber companies also objected. Menter Interview (Apr. 8, 1975), see note 83 supra. (Perhaps they regarded the proposal as a potentially dangerous precedent.)}

\footnotesize{\textsuperscript{114} Local administrators were the most influential opponents. Menter Interview (May 19, 1976), see note 83 supra. Rules against tree-cutting are sometimes extremely difficult to enforce even when the government has compensated the landowner by purchasing a scenic easement. See Cunningham, Scenic Easements in the Highway Beautification Program, 45 Den. L.J. 187, 182-83 (1968).}
the restrictions on tree-cutting from the mandatory statewide standards to the optional model ordinances, so that each county could decide for itself whether to regulate tree-cutting.

The planners were constantly aware that they would have to explain their rules to skeptical landowners, zoning officials, politicians, and—ultimately—to trial judges in rustic courthouses. Almost invariably, they eschewed rules that would be difficult to defend. Perhaps the best example is a large but hidden gap in the statewide regulations. The statute required the DNR to promulgate, among other things, standards for zoning in the narrow sense of the word: districts where certain land uses (residential, commercial, and so on) would be permissible, while others would be forbidden. Formally, the agency complied with this directive. It assigned a classification to every lake and stream and required the counties to create "land use districts based on the compatibility of the designated type of land use with the public waters classification." But this requirement—like all the minimum standards—could be enforced only by disapproving those county ordinances that failed to comply with it, after which the Department would have to "adapt the model ordinance to the county." The question

115. MINN. REG. CONS 77 (4.31) (1970). Retained in the mandatory standards was a provision stating that "natural vegetation in shoreland areas shall be preserved insofar as practical and reasonable to retard surface runoff and soil erosion, to utilize excess nutrients in the soil to alleviate pollution problems, and to provide sufficient cover to screen cars, dwellings, and other structures from view from the lake." MINN. REG. CONS 73(c) (1) (1970). This provision was intended to indicate the DNR's concern, without requiring recalcitrant counties to adopt specific rules about the subject. Menter Interview (Apr. 8, 1975), see note 83 supra. Analysis of the approved county ordinances that were on file at the DNR in November 1974, reveals that 15% of them say nothing about preservation of natural vegetation; 34% contain the model ordinance's language verbatim or with minor rewording; 4% copied the vague exhortation of the statewide standards; and the rest (about 47%) have provisions that differ appreciably from both the statewide standards and the model ordinance. Although about 82% of all counties enacted a fairly specific provision, only 60% of the ten counties with the most lakes did so, perhaps because these counties were more apprehensive about enforcement problems.

116. Gere Interview (Apr. 23, 1976), see note 83 supra. See also Kaplan, Segregation Litigation and the Schools—Part II: The General Northern Problem, 58 NW. U.L. REV. 157, 183-86 (1963). The article includes an excerpt from a trial transcript that illustrates nicely the dangers of subjecting a non-resident "expert" to cross examination.


118. MINN. REG. CONS 71 (1970).
was: On what grounds can the DNR tell a county that its land
use districts are inadequate? With 85 counties\textsuperscript{119} and over 10,-
000 lakes and streams, it was clearly infeasible for the Depart-
ment to inspect every district boundary line. The only obvious
alternative was to draft rules flatly prohibiting commercial or
industrial uses on certain classes of lakes and streams. The
DNR's planners rejected this alternative because they lacked
sufficient information about industrial needs for water to estab-
lish defensible shoreland zoning districts.\textsuperscript{120} As a result, they
routinely approved county zoning maps regardless of their con-
tents.\textsuperscript{121}

In these ways, the "ideal lakeshore development" picture
was transformed by political and administrative forces. Without
violating the DNR's standards, a farm or a factory might appear
on the shoreline; and lawns could replace the trees surrounding
the houses. The rest of the story—about setbacks, lot sizes, and
cluster development—is more complex.

C. THE SETBACK RULES

Knowing that pollution prevention would be the most accept-
able justification for their regulations,\textsuperscript{122} the DNR's planners
searched for evidence that would support specific controls. Most
lakeshore houses dispose of their sewage through septic tank
rainfield systems.\textsuperscript{123} The sewage contains both pathogenic
bacteria and nutrients,\textsuperscript{124} but—if everything works perfectly—

\textsuperscript{119} Although the state contains 87 counties, Ramsey County has no
unincorporated shorelands; and in Rock County there are no lakes. See
\textit{DIVISION OF WATERS, SOILS AND MINERALS, MINNESOTA DEP'T OF NATURAL
RESOURCES, CLASSIFICATION SCHEME FOR PUBLIC WATERS 21–22} (1972)
[hereinafter cited as CLASSIFICATION SCHEME].

\textsuperscript{120} Gere Interview (Apr. 23, 1976), see note 83 supra.

\textsuperscript{121} The counties voluntarily zoned most shorelands "residential."

\textit{Id.}

\textsuperscript{122} Menter Interview (Apr. 8, 1975), see note 83 supra.

\textsuperscript{123} \textit{MINNESOTA DEP'T OF NATURAL RESOURCES, ELEMENTS AND EX-
PLANATIONS OF THE SHORELAND RULES AND REGULATIONS 20} (1971)
[hereinafter cited as DNR, ELEMENTS AND EXPLANATIONS].

\textsuperscript{124} \textit{U.S. DEP'T OF HEALTH, EDUCATION, AND WELFARE, MANUAL OF
SEPTIC-TANK PRACTICE 1} (Public Health Service Pub. No. 526, 1967). One
sanitary engineer has concluded that the average septic tank effluent
from a family of five contains concentrations of 10 mg/liter of organic
nitrogen, 25 mg/liter of nitrate ammonia, and 20 mg/liter of phosphates.
Annually, such a family would produce 15 pounds of phosphorus
and 27 pounds of nitrogen in human wastes. Polta, \textit{Septic Tank
Effluents} in \textit{WATER POLLUTION BY NUTRIENTS—SOURCES, EFFECTS AND

\textsuperscript{1977]}
these pollutants are removed as the effluent percolates through the soil.125

In practice, septic tank systems often function poorly because many sites are too marshy, sandy, or rocky for proper filtration.126 Even if the soil is ideal, it may eventually become saturated and cease to cleanse the effluent.127 In addition, the systems are sometimes improperly constructed or maintained.128

The alternatives to septic tanks also have serious drawbacks.129 Therefore, the DNR decided to regulate, rather than prohibit, these systems. For a start, they copied some technical rules about construction from the recommendations in standard manuals. They also prohibited drainfields in such unsuitable areas as marshy shorelands.130 Finally, they determined the minimum setback between the drainfield and the water.

The planners soon realized that once they had calculated a defensible drainfield setback, they could deduce a defensible building setback because (so they thought)131 the drainfield is usually located between the house and the lake.132 Coping with the same problem, Wisconsin's DNR had adopted the United States Public Health Service's recommendation: a minimum drainfield setback of 50 feet, from which Wisconsin's planners deduced a building setback of 75 feet, with a lot area of about

125. MANUAL OF SEPTIC-TANK PRACTICE, supra note 124, at 29.
129. See Kusler, supra note 85, at 72-74.
130. MINN. REG. CONS 72(b) (5) (1970).
131. See text accompanying note 273 infra.
132. Menter Interview (Nov. 17, 1970), see note 83 supra. The first few drafts of the statewide standards (on file with the author) reveal great uncertainty about these dimensional rules. Draft number one had a uniform statewide drainfield setback of only 25 feet, with a minimum lot area of only 20,000 square feet. In the second draft the drainfield setback was increased to 50 feet. By the fourth draft, the building setback had become 100 feet, accompanied by a colossal drainfield setback of 500 feet. In the next draft (and thereafter) the planners finally decided that the drainfield would be between the house and the lake and adopted the variable rules described in this Article.
133. See MANUAL OF SEPTIC-TANK PRACTICE, supra note 124, at 10.
Minnesota's DNR decided that the Wisconsin rules were ideal for heavily developed lakes, where stricter standards would be unreasonable. Many Minnesota lakes, however, are only sparsely developed. The planners also knew that the Public Health Service's setback was designed to prevent pathogens from reaching the water, not to prevent obnoxious growths of nuisance algae. For the latter purpose, larger setbacks might be necessary because the nutrients in septic tank effluent may travel farther through the ground than the pathogens. And so the planners studied a complex phenomenon called eutrophication—the enrichment of lakes by nutrients.

These nutrients—chiefly phosphorus and nitrogen—fertilize lakes, stimulating the growth of algae and other aquatic plants. Lake Erie is a classic example of an eutrophic lake, while—at the other end of a continuum—Lake Superior exemplifies an oligotrophic (nutrient poor) lake. Waters in southern, western, and central Minnesota, where the soils are rich in nutrients, are naturally more eutrophic than those in the northeast, where the soil is infertile. But civilization tends to make all lakes more eutrophic. This process, known as cultural eutrophication, has many causes: notably, municipal sewage effluents, agricultural erosion, manure and fertilizers, some industrial discharges, and perhaps even lawn fertilizers. Moreover, by destroying the shoreland marshes and vegetation that absorb some of the nutrients in run-off, replacing them with lawns, pavements, and storm sewers, we have increased the natural tendency of precipitation to wash nutrients into our waters.

Although publicists often wrongly describe eutrophic lakes as "dead" or "dying," scientists have learned that cultural eutrophication is reversible. Without a continual supply of nu-

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134. Wis. Adm. Code §§ NR 113.07(3), NR 115.03(2)(a), (b) (1975); see Kusler, supra note 85, at 75.
136. Menter Interview (May 19, 1976), see note 83 supra.
137. See R. Wetzel, LIMNOLOGY 243-45 (1975).
138. See Beeton, Changes in the Environment and Biota of the Great Lakes, in EU TROPHICATION, supra note 98, at 153. See also R. Wetzel, supra note 137, at 532-36.
139. LDS, PART I, supra note 108, at 3.
140. See generally EU TROPHICATION, supra note 98, at 3-4.
141. Interview with Dr. Joseph Shapiro, Professor and Associate Director of the Limnological Research Center, University of Minnesota, in Minneapolis (Apr. 29, 1976).
trients from outside the lake, the water tends toward its former, less productive state. For this reason, and because it is generally impractical to harvest the nutrients or the algae from the lake, abatement strategies usually involve reducing the flow of incoming nutrients.

Ideally, every lake would be studied individually. As nutrients enter the water, they are consumed by the algae in certain fixed proportions until one of them (the "limiting factor") is no longer available. Further algal growth cannot occur until the supply of this vital nutrient increases, regardless of the quantities of other nutrients that may be present. In a lake where phosphorus is the limiting nutrient, a reduction of the influx of, for instance, nitrogen will be ineffective, while in another lake—where nitrogen is limiting—such a reduction is essential. Similarly, if most of the critical nutrient enters by way of a tributary stream, it will be futile to control some other, relatively negligible source. And finally, since one abatement technique may be too expensive or controversial, and another (such as diversion of municipal sewage) may create problems elsewhere, an analysis of the lake’s nutrient budget should be supplemented by analyses of engineering and political realities.

This kind of systematic investigation, leading to a custom-tailored management plan, is very expensive. Consequently, only a few extraordinarily important and badly polluted lakes have been thoroughly studied. Knowing this, the DNR’s planners sought useful generalizations. Unable to find reliable evidence about whether septic tank effluents are relatively important sources of nutrients, they proceeded on the popular assumption that septic tanks sometimes are a significant cause of eutrophication.

Scientists generally believe that phosphorus is the most common limiting nutrient. Most phosphatic compounds re-

143. Id.
144. Shapiro Interview, supra note 141. See also G. Cole, TEXTBOOK OF LIMNOLOGY 203-04 (1975); F. Ruttner, FUNDAMENTALS OF LIMNOLOGY 99-100 (3d ed. 1963).
145. Shapiro Interview, supra note 141.
146. Id.
147. Id. Dr. Shapiro’s study of five lakes in Minneapolis cost approximately $100,000.
148. Id.
149. Menter Interview (May 19, 1976), see note 83 supra. See also Kusler, supra note 85, at 68-71.
150. See R. Wetzel, supra note 137, at 243-45.
act vigorously with soils; as a result, they usually do not travel very far through the ground. On the other hand, much depends on the characteristics of the individual site and on whether the drainfield system is malfunctioning. Besides, in some lakes nitrogen is the limiting factor; and nitrogenous compounds are more mobile than phosphates. The planners discovered a recent study showing that nitrates can travel as far as 140 feet through porous, sandy soils. Since many Minnesota shorelands are sandy, they decided that they could justify a 150-foot drainfield setback around some lakes.

It would have been most logical, of course, to apply this strict setback to those lakes in which nitrogen is the limiting nutrient. Unfortunately, because the limiting factors in most Minnesota lakes have not been identified, this approach was infeasible. But Minnesota’s DNR — unlike Wisconsin’s — possessed a huge collection of other kinds of facts about most of the state’s major lakes and their shorelands, compiled by a team of University geographers. This “Lakeshore Development Study” (LDS) consisted of recently assembled data from several parochial sources stored on computer tapes for quick retrieval. For each of the lakes covered by the study, there was information about maximum depth, water surface acreage, total miles of shoreline, numbers of seasonal and permanent homes, resorts, dominant fish species, shoreland soils, and vegetation types. The project’s directors believed that this unique collection of

151. See U.S. DEP’T OF INTERIOR, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION SOUTHEAST WATER LABORATORY, ROLE OF SOILS AND SEDIMENTS IN WATER POLLUTION CONTROL, PART I: REACTIONS OF NITROGENOUS AND PHOSPHATIC COMPOUNDS WITH SOILS AND GEOLOGIC STRATA (1968) [hereinafter cited as ROLE OF SOILS].
153. See generally ROLE OF SOILS, supra note 151.
155. Menter Interview (Apr. 8, 1975), see note 83 supra.
156. Shapiro Interview, supra note 141.
157. See BORCHERT, MINNESOTA’S LAKESHORE, PART II: SUMMARY REPORT OF THE MINNESOTA LAKESHORE DEVELOPMENT STUDY (1970). The study covers most of Minnesota’s major recreational lakes. Basically all lakes with a basin acreage of more than 150 acres were included. Omitted were lakes within the seven county Minneapolis-St. Paul metropolitan area, Lake Superior, all rivers, some dry or partially dry lake basins, as well as lakes completely within government owned areas. LDS, PART I, supra note 108, at 1.
information would be invaluable for many kinds of managerial decisions.\textsuperscript{158}

Understandably enthusiastic about their study, the authors of the LDS wanted the DNR to use the data to classify lakes, with different rules for each classification.\textsuperscript{159} At first, some DNR officials balked at the idea.\textsuperscript{160} Their hesitation, though it may have been motivated by ordinary bureaucratic inertia, narrow-mindedness, or hostility to ideas from outsiders, was not wholly indefensible. The LDS statistics did not contain indices of eutrophication (transparency, for example),\textsuperscript{161} nor did they identify each lake's limiting nutrient. Yet the data did reveal lakeshore soil types and other potentially useful details. After some lobbying by members of the LDS staff, and newspaper editorials that rebuked the DNR for its recalcitrance,\textsuperscript{162} the Department finally decided to use the LDS data as the basis for an ambitious classification system under which there would be variable dimensional rules.\textsuperscript{163}

The planners invented four classifications: Natural Environment (NE), Critical (C), Recreational Development (RD), and General Development (GD), with the following minimum standards for each class: \textsuperscript{164}

\begin{itemize}
  \item \textsuperscript{158} See LDS, Part I, supra note 108, at 45.
  \item \textsuperscript{159} Interview with George Orning, Former Associate Director, Minnesota Lakeshore Development Study, in Minneapolis (May 7, 1976).
  \item \textsuperscript{160} Id.
  \item \textsuperscript{161} Abundance of algae is the most commonly accepted index. This is related to transparency because algae absorb light, thus reducing transparency. Interview with Professor Robert Megard, Dept. of Ecology and Behavioral Biology, University of Minnesota, in Minneapolis (May 27, 1976).
  \item \textsuperscript{162} One participant recalls three factors that may have influenced the eventual decision to classify: (1) internal DNR support for the idea, including two new members of the Shorelands Unit (Menter and Hambrock) who, as students, had helped to assemble the LDS; (2) "educational efforts" by some of those who had directed the LDS; and (3) "more than one" newspaper editorial on the subject, inspired by discussions between the journalists and LDS officials. Orning Interview, supra note 159.
  \item \textsuperscript{163} Many of the rules in the statewide standards are uniform for all classifications. See, e.g., Minn. Rec. CONS 74, 75 (1970) (subdivision regulations and administrative provisions).
  \item \textsuperscript{164} Id. 72(b)(4) (drainfield setbacks), 73(b)(1) (building setbacks), 73(a) (lot areas and widths, the latter figures applicable at both the water line and the building line), 73(b)(3) (highway and road setbacks). See also id. 71(a)(2)(dd) (NE rules also apply to Critical lakes), 73(a)(3) (development on substandard lots of record), 73(a)(4)(bb) (smaller lot sizes may be permitted, with the DNR's approval, for cluster developments or areas served by a public sewer).
\end{itemize}
The rules for GD lakes are similar to Wisconsin’s uniform statewide standards. The drainfield setback for NE and C lakes was derived from the study of nitrogen migration; the setback for RD lakes is an arbitrary intermediate figure.

The building setbacks were, as previously noted, the result of adding several feet to the drainfield setbacks on the theory that the drainfield will be between the house and the lake. Curiously, the building setbacks for GD and RD lakes are only 25 feet greater than the drainfield setbacks on these lakes, while on NE and C lakes the building setback is 50 feet greater than the drainfield setback. This discrepancy was not based—even tenuously—on any particular scientific evidence. Apparently, the 200-foot setback, unlike the others, was designed less to regulate development than to deter it around those lakes that the DNR decided were better suited for wildlife than for homes. Certainly with different motives, and probably with better justifications, the planners were using one of the much criticized techniques of ordinary “exclusionary zoning.”

The minimum width and lot area figures also were not derived from specific scientific evidence (there was none), except to the extent that deep (and therefore large) lots were entailed.

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165. “No structure shall be placed nearer than 50 feet from the right-of-way line of any federal, state, or county trunk highway; or 30 feet from the right-of-way line of any town road, public street, or others not classified.” Id. 73(b)(3).
167. DNR, Elements and Explanations, supra note 123, at 10. The study was by G. Schroepfer & R. Polta, supra note 154.
168. Menter Interview (Nov. 17, 1970), see note 83 supra.
169. Menter Interview (Feb. 23, 1976), see note 83 supra.
170. See note 188 infra.
171. See, e.g., Lloyd, A Developer Looks at Planned Unit Development, 114 U. Pa. L. Rev. 3, 4-5 (1965) (“To the extent that we could not prevent growth altogether, we have tried to make that growth as expensive as possible to both the builder and the homeowner so that houses would be costly, yield higher school taxes, and prevent undesirable elements from settling in the community.”).
by the drainfield setbacks.\textsuperscript{172} In addition to reducing pollution, the DNR wished to prevent overcrowding of lake surfaces.\textsuperscript{173} Since the rules concerning the size and shape of lots tend to restrict the number of persons living near lakes, they serve both purposes. The planners knew that surface overcrowding is difficult to predict because it may be affected more by such factors as whether a lake is close to a city, whether it has a public access, and whether it has good fishing, than by how many families live around the lake.\textsuperscript{174} They knew that it would sometimes be feasible—and perhaps preferable—to regulate surface overcrowding directly by water surface zoning.\textsuperscript{175} They also knew that one effect of the lot size restrictions might be to increase the price of lakeshore lots;\textsuperscript{176} if so, the cost of the environmental

\textsuperscript{172} Menter Interview (May 19, 1976), see note 83 supra. Even with a house 40 feet deep, and a road setback of 50 feet, the lot area entailed by the 200-foot building setback, coupled with the lot width of 200 feet, on NE lakes is only 58,000 square feet, or 22,000 square feet less than required by the statewide standards. The DNR simply added the additional square footage. \textit{Id.}

\textsuperscript{173} DNR, \textit{ELEMENTS AND EXPLANATIONS}, supra note 123, at 18, 21.

\textsuperscript{174} Gere Interview (Apr. 23, 1976), see note 83 supra.

\textsuperscript{175} Menter Interview (May 19, 1976), see note 83 supra. See \textit{MINN. STAT.} § 361.26(2) (1976):

(a) Upon request of a county, city or town, the commissioner may, if he determines it to be in the public interest, establish regulations relating to the use of watercraft on waters of this state which border upon or are within, in whole or in part, the territorial boundaries of the governmental unit . . . . (c) Such regulations may restrict any or all of the following: (1) the type and size of watercraft and size of motor which may use the waters affected by the regulation, (2) the areas of water which may be used by watercraft, (3) speed of watercraft, (4) times permitted for use of watercraft, or (5) minimum distance between watercraft. When establishing regulations the commissioner shall consider the physical characteristics of the waters affected, their historical uses, shoreland uses and classification, and any other features unique to the waters affected by the regulations.

\textsuperscript{176} The most frequent criticism of the regulations at the formal public hearing in St. Paul was that the minimum lot area and frontage requirements would increase the price of lakeshore homes. See Transcript, supra note 106, at 86, 118-19, 121, 136. See also letter from Professor Robert W. Snyder to Eugene Gere (Apr. 21, 1970) (on file with the author):

[H]alf-acre 100 foot frontage lot minimums make lot frontage too expensive for some families to afford. The effect is compounded by more stringent regulations on "recreational development" and "natural environment" lakes . . . . This has two types of ramifications: (1) It essentially makes the private use and enjoyment of lakeshore property unavailable to a certain number of families with limited economic means, thus reducing the social advantage of the presence of this valuable resource, a social advantage of particular economic importance to a state
benefits ultimately would be paid largely by consumers. For various reasons—whose relative influence is incalculable—they were not moved by this consideration. The statutory purpose, which coincided with the Department's own proclivities, was preservation of lakeshore environments, not provision of housing; the planners knew that while inexpensive housing is essential, inexpensive lakeshore housing is not; and they hoped that large lot sizes would encourage cluster developments where, in return for relaxation of the density controls, developers would agree to preserve open space around the development.\textsuperscript{177}

Politically, the crucial fact was that the setbacks and other dimensional rules applied (here as in nearly all zoning) prospec-

\textit{tively to undeveloped land, not retroactively to landowners who had already built lakeshore cottages.}\textsuperscript{178} The future purchasers of lots were, of course, unconscious of their interests, unaware of the proposed dimensional rules, and absent from the public hearings.\textsuperscript{179} Most of the owners of large tracts of unplatted shore-

\begin{quote}
(2) Since a certain number of families are eliminated from the market for seasonal homes, the total number of seasonal homes in rural areas will probably be re-
duced (unless the absence of smaller lots makes larger lots more attractive to those who can afford them). Thus the very signifi-
cant economic impact of seasonal homes will be proportionately less.
\end{quote}

See generally R. BABCOCK & F. BOSSFELMAN, supra note 63, at 5-7 (1973).

\textsuperscript{177} DNR, ELEMENTS AND EXPLANATIONS, supra note 123, at 37. In conversations with the author, the drafters repeatedly defended their NE dimensional rules by saying that they hoped these rules would encourage cluster developments. The major lobbyist for the shorelands bill was a cluster developer, located in Bloomington. Orning Interview, note 159 supra.

\textsuperscript{178} One exception should be noted. The DNR's rules require re-
placement of substandard septic tank drainfield systems within five years. MINN. REG. CONS 75 (c) (1970).

\textsuperscript{179} Perusal of the transcript of the hearings reveals that almost all of the questions and criticisms by ordinary landowners had to do with the effect of the regulations on their already-developed lots. Only one citizen identified himself as a farmer. The critics of the dimensional rules were "primarily developers." Menter Interview (May 19, 1976), see note 83 supra. In addition, the DNR received many inquiries from own-
ers of substandard lots of record who were mollified when informed that their lots were exempt from the rules. Id. In some areas, rapid develop-
ment has created conflicts between farmers and commuters, who com-
plain about farm noises and odors, and demand increased municipal services. Citing such problems, one official from a county on the southern fringe of the Twin Cities metropolitan area says that even a five acre minimum lot size is too small. Interview with William Gill, Rice County Zoning Administrator, in Minneapolis (May 5, 1975). Where such sentiments prevail, even the two acre lot size for NE lakes must seem minimal.
land—farmers, for instance—had no reason to complain because they had no plans to sell to developers, while many of those who already owned lakeshore houses were naturally inclined to believe that further development should be regulated. As a result, the dimensional rules could be strict without arousing widespread resistance.

It may also be significant that although the proposed standards contained several inexact classification criteria—for example, “county and regional public water needs”—they did not enable a reader to ascertain precisely how the DNR would classify any particular lake. It was only after the public hearings and the adoption of the statewide standards that the DNR began to fashion a web of detailed formulas that determined how the lakes would be classified, and thus whose property would be regulated most strictly.180

D. CLASSIFYING

Since the planners had to classify approximately 9,700 lake basins (and about 25,000 miles of rivers and streams),181 they plainly could not wait until every watershed had been carefully studied. The classification criteria had to facilitate rapid, almost automatic, classification of most waters, leaving the classifiers free to devote their time to a relatively small number of borderline cases. And yet the DNR also wanted to be able to defend every classification decision by reference to a logical system buttressed by indubitable facts.182

180. There is no reason to suppose that this delay was due to invidious motives. The Department was extraordinarily busy, and in any case the classification formulas were difficult to devise until—having finished the statewide standards—the planners were free to devote most of their time to the complicated problem of classifying.

181. MINNESOTA DEPT OF NATURAL RESOURCES, CLASSIFICATION SCHEME FOR PUBLIC WATERS: SHORELAND MANAGEMENT 10 (1971) [hereinafter cited as DNR, CLASSIFICATION]. The statute applied to all “public waters.” MINN. STAT. § 105.485 (1976). This imprecise term has a long history of murky legal definitions. See, e.g., the cases cited in note 109 supra. To avoid the impossible task of deciding in each case whether a small brook or pond was “public,” the DNR decided that [t]his shall be construed to mean, for the purposes of these regulations, any body of water which has the potential to support any type of recreational pursuit or water supply purpose. However, no lake, pond or flowage of less than 25 acres in size and no river or stream having a total drainage area less than two square miles need be regulated by the county for the purposes of these regulations.

182. Gere Interview (Apr. 23, 1976), see note 83 supra. They wished,
For both of these reasons, the Lakeshore Development Study's computer "data bank" had an immense influence, not only in the debate about whether to adopt a classification system, but also in determining the nature of that system. It was the only convenient source of reams of facts about most of the state's major lakes. Because the purpose of the LDS, which had a limited budget, was to assemble data and not to undertake new studies, the LDS tape was not a perfect set of management information. The project's director had decided that the most important thing was to get started. When some new collection of useful statistics appeared, it could easily be added to the nucleus of information.183

As a result of this sensible decision, the tail of available data wagged the dog of management policy. For example, rivers—no matter how beautiful—were ordinarily classified General Development because the LDS had not inventoried them, and consequently the classifiers felt unable to make defensible distinctions among them.184 The LDS had also omitted lakes of under 150 surface acres;185 these, by contrast, were generally classified NE on the theory that—unlike running waters or large lakes—small ponds cannot withstand much nutrient pollution.186 Thus, paradoxically, the imperative of de-

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183. See LDS, Part I, supra note 108, at 45.  
184. Hambrock Interview (July 15, 1970), see note 83 supra. The main reasons for classifying rivers GD were (1) lack of data about existing development along rivers and (2) the fact that septic tank pollution is generally less likely to damage moving rivers than lakes. Recognizing that nutrients entering via a tributary stream may exacerbate lake pollution, the DNR considered assigning each lake's classification to all its tributary rivers, but dropped the idea because of such complexities as how to classify the intricate webs of tributaries of the tributaries. Id. To the general policy of classifying streams GD, they made two exceptions: officially-designated trout streams and components of the National Wild and Scenic Rivers System. "These exceptions are not unreasonable, since these streams have been recognized by governmental agencies as waters worthy of preservation and since easements along these streams are usually purchased." DNR, CLASSIFICATION, supra note 181, at 10.  
185. See note 157 supra.  
186. Every lake basin between 25-150 acres was classified as Natural Environment unless development was detected. The detailed amount of data available for large lakes was not available for smaller lakes. By nature of their size, these lakes are highly susceptible to overcrowding. Therefore, the decision was made to initially classify them in a restrictive category. When development already existed on these lakes (information ob-
fensibility led to the indefensible result that houses may be built closer to scenic canoeing rivers than to swampy ponds.

The underlying problem was that building setbacks serve aesthetic purposes, while drainfield setbacks are for pollution control. Under the statewide standards, these two regulations were linked: to impose the 200-foot NE building setback, the DNR also had to impose (and be prepared to defend) the 150-foot NE drainfield setback. Lacking authoritative indices of shoreland beauty, and knowing that most people (including judges) worry more about pollution than about aesthetics, the planners scrupulously avoided aesthetic judgments, even to the point of ignoring some of the law that they had just created. In the statewide standards, published before the classifiers had pondered concrete classification decisions, the “management goals and objectives” for NE lakes and streams were “to preserve and enhance high quality waters by protecting them from pollution and to protect shorelands of waters which are unsuitable for development ...”187 By “high quality waters” they meant extraordinarily beautiful lakes.188 By “waters unsuitable for development,” they meant lakes that are unusually vulnerable
tained from county highway maps), they were classified as Recreational Development.
DNR, CLASSIFICATION, supra note 181, at 10-11. Although “overcrowding” does not seem to connote pollution, the drafters stressed—in conversations with the author—the idea that, all else being equal, small lakes are more vulnerable to septic tank pollution. “Larger lakes will not deteriorate as rapidly as small ones when developed, due to a larger volume of water [to absorb incoming nutrients?] and a greater likelihood of some portion of the lake remaining undeveloped.” Id. at 5. The latter assumption is questionable.
187. MINN. REG. CONS 71(a) (2) (aa) (1970).
188. At the public hearing on the proposed statewide standards, James Menter explained the NE classification:
The Natural Environment lake is the one that possesses primarily scenic natural beauty. An area that should be preserved to keep these areas in a natural state, these lakes will set Minnesota aside as a unique recreational and tourist area. These lakes would be those that are largely undeveloped. Therefore the management policies established for these lakes will be preventative in nature, thus preserving these areas in a natural state. They will not conflict with existing development on these bodies of water.
A second type of lake which is to be included in the Natural Environment category is the large shallow duck marsh or swamp. These are areas that should not be developed due to their unsuitability for development. A soil absorption unit will not function in these wet soils. Wet soils also provide poor building foundations. These lakes cannot be used for recreational purposes. They are inadequate for fishing due to the difficulty of maintaining permanent fish life. Generally, these are duck lakes, and should be managed as such.
Transcript, supra note 106, at 19.
to septic tank pollution or surface overcrowding. In other words, they wished to apply the strictest (NE) regulations to the two extremes among Minnesota's lakes: some of the most beautiful, rocky, forested, oligotrophic northern lakes, plus the shallow, weedy, eutrophic lakes, located mostly in the fertile southern and western regions of the state.

Considered abstractly, both ideas are plausible. Around the finest lakes, one may want strict land use controls so that the shorelands will remain attractive and the water will remain pure. Around "duckponds" (as the DNR's planners nicknamed the shallow, marshy lakes), one may want strict controls to arrest further deterioration. Although these ideas were equally logical, they were not equally workable. The LDS statistics—supplemented by maps from the DNR's files—could reveal the shallow, marshy lakes with tolerable accuracy. But how does one quickly compile a definitive list of the most beautiful waters in a state that contains about 10,000 lakes and 25,000 miles of rivers and streams? If nothing important would result from the designations, one could easily draw up a list of the "20 most beautiful lakes" as casually (and inaccurately) as a magazine might name the "20 best dressed women." But the magazine's editors need not answer for their harmless frivolity. Under the Shoreland Management Act, the classifications would not be harmless and should not be made casually. It would hardly do to tell affected landowners (and the local courts): "The building setback on Long Lake is 200 feet because a game warden told me that it's a pretty lake." There is no "scenic inventory" of Minnesota's lakes that might at least look authoritative. Apprehensive that the use of scenery as a criterion would inevitably lead to patently indefensible distinctions, the planners discarded the idea of affording special protection to "high quality" waters.

The classification criteria that survived were starkly objective ones that could be applied speedily and consistently by programming a computer to reproduce statistics compiled by the LDS. To obtain consistent decisions, the planners invented classification formulas. Inevitably, the formulas themselves were essentially arbitrary. But they looked impersonal, ensured

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189. Id.; see also DNR, CLASSIFICATION, supra note 181, at 11-12.
191. Waters not included in the LDS study were classified more laboriously with the aid of rules-of-thumb. See text accompanying notes 200-01 infra.
a high degree of internal consistency, and enabled the DNR to meet its deadline by mass-producing classifications.

If the computer print-out revealed that a lake was fifteen feet deep (or shallower), had no game fish, and had a development density of less than three dwellings per mile of shoreline, it was (at least tentatively) classified Natural Environment on the ground that it was unsuitable for development.¹⁹² Depth was a classification factor because, for a given surface acreage, a shallow lake will of course contain less water in which to disperse incoming nutrients. ("Fifteen feet or below" was the shallowest category in the LDS statistics.) "No game fish"—another datum from the LDS—was interpreted as corroborative evidence that the lake was exceptionally shallow and weedy—better, they thought, for wildlife than for houses.¹⁹³

Knowing that the courts sometimes strike down zoning rules that are not reasonably consistent with preexisting patterns of development, the planners reserved the NE classification for those lakes that were sparsely settled.¹⁹⁴ The development

¹⁹³. See note 188 supra. The LDS data identified the dominant fish species in each lake. The most likely explanation for the absence of game fish was thought to be insufficiently dissolved oxygen, a phenomenon that is generally most acute in shallow, weedy lakes. Hambrock Interview (Oct. 7, 1970), see note 83, supra. With a touch of paternalism, the DNR also concluded that shallow lakes are less suitable for development from the consumer's point of view. Menter Interview (Nov. 10, 1970), see note 83 supra.
¹⁹⁴. DNR, CLASSIFICATION, supra note 181, at 5. The setbacks and lot sizes required by the statewide standards—especially those for NE lakes—were known to be substantially larger than many existing lakeshore setbacks and lot sizes. Menter Interview (May 19, 1976), see note 83 supra.

Most of the lake-home areas in Minnesota with small lots (100 feet or less in width) were developed in the 1920's—the early days of the automobile era. In contrast, most post-World War II cabins are built on lots with more than 100 feet of frontage. However, some current lakeshore developments contain very small lots, with widths as low as 60 feet.

LDS, PART I, supra note 108, at 22-23. See also Zampieri v. Township of River Vale, 29 N.J. 599, 152 A.2d 28 (1959) (building setback rule held invalid where 15 of 35 existing structures did not conform to the new requirement).

Another reason for imposing the stricter controls on the less heavily-developed lakes was that strict rules would be more effective in relatively undeveloped areas. Hambrock Interview (May 10, 1976), see note 83 supra. With the exception of nonconforming septic tank systems, the dimensional controls did not apply to existing development. See MINN. RSC, CONS 75(c) (1970) (substandard septic tank systems must be replaced within five years). Consequently, it seemed futile (and unfair) to classify a heavily developed lake NE merely to regulate land use on the remaining vacant tracts. Hambrock Interview (Oct. 7, 1970), see note 83 supra.
VARIANCES

density cutoff point of three dwellings per mile of shoreline was derived from a "natural break" in a frequency distribution graph produced by the computer. The classifiers selected two breaks in the graph's line to serve as a maximum figure for Natural Environment lakes and a minimum figure for General Development lakes. Their criteria for choosing among the breaks on the graph were subjective. Although some lakes had to be placed in each classification, they wanted the highest percentage to be Natural Environment. This preference determined their choice among the possible cutoff points. While realizing that this was an arbitrary way to decide, they could conceive of no preferable (or even less arbitrary) technique.195

The classifiers then proceeded to make similar notations for "automatic" Recreational Development lakes. *If a lake had a development density between 3 and 25, a crowding potential between 60 and 225 and a maximum depth over 15 feet, it was (at least tentatively) classified Recreational Development.*196 The crowding potential is the lake's water surface acreage divided by its miles of shoreline.197 This figure tends to indicate how crowded the lake's surface will be after the shoreline is developed. All else being equal, a lake with an irregular shoreline will—when fully developed—have more riparian cottages per surface acre than a rounder lake. On such lakes, the DNR concluded, there is a greater statistical likelihood of conflicts between, say, waterskiers and fishermen,198 although on any particular lake some other factor (such as whether the fishing is good) may be much more influential than the crowding potential. Lacking more sophisticated indices, the classifiers used the crowding potentials as evidence of the need for large lot sizes, and therefore the stricter classifications, to control the density of shoreland development.

Finally, the classifiers noted probable General Development lakes. *If a lake's maximum depth was over 15 feet, with a development density over 25 and a crowding potential over 225, it was (at least tentatively) classified General Development.*199

To supplement these formulas, especially in cases where a lake did not meet any of the three sets of criteria for "automatic" classification, the DNR took account of several other kinds of information that sometimes persuaded them to change even an

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195. Menter Interview (Nov. 3, 1970), see note 83 supra.
197. DNR, CLASSIFICATION, supra note 181, at 5.
198. Id.
automatic classification produced by the formulas. For example, they refined the concept of "development density" by examining maps; nearby cities and highways were treated as evidence in favor of a lenient classification.\textsuperscript{200} They often scrutinized LDS data about the soil, vegetation, and topography of a lake's shore, trying to decide whether septic tanks would function poorly in the area, for instance, because it was marshy.\textsuperscript{201} Lakes partially within a government controlled wildlife area, such as a state game refuge, were generally classified NE, both to further the purposes of the area and because many of them were probably "duck marshes," corresponding to the DNR's image of a typical Natural Environment lake.\textsuperscript{202}

There was one loose end in the classification system. The statewide standards described a fourth classification: "Critical."\textsuperscript{203} According to the standards, Critical lakes were to be gov-

\begin{footnotesize}
\textsuperscript{200} DNR, \textit{CLASSIFICATION}, \textit{supra} note 181, at 6, 10. The planners reasoned that, since the Shorelands Act did not apply to incorporated areas, stringent regulations would be less effective on lakes abutted by cities than on those whose shorelands were entirely unincorporated. \textit{Id.} at 10. Accordingly, these lakes were usually classified GD. \textit{Id.} But if the lake was under 150 acres and had the "poor physical characteristics" typical of NE lakes, it was usually classified RD as a compromise reflecting the countervailing factors. Hambrock Interview (Oct. 9, 1970), see note 83 \textit{supra}. The Act was later amended to cover municipalities. \textit{See MmN. STAT.} § 105.485(6) (1976). It remains true, however, that nearby cities presumably tend to create a demand for shoreland, and roads provide access, considerations that can plausibly be said to justify classifications based on these factors. \textit{See DNR, \textit{CLASSIFICATION}, \textit{supra} note 181, at 6, 10.}

The maximum depth figure from the LDS was also supplemented by examining data about median lake depths. \textit{See Id.} at 7.

\textsuperscript{201} The following chart, used by the DNR, shows how such information was interpreted.

\begin{center}
\begin{tabular}{|l|l|l|l|}
\hline
\textbf{CLASSIFICATION} & \textbf{DOMINANT SOIL GROUP} & \textbf{VEGETATION} & \textbf{SLOPES} \\
\hline
NE & Wet, clay or\newline bedrock & No trees or shrubs & Flat \\
RD or GD & Sand, loam & Deciduous or coniferous trees & Moderate to steep \\
\hline
\end{tabular}
\end{center}

\textit{DNR, \textit{CLASSIFICATION}, \textit{supra} note 181, at 9.} Shallow, marshy "duckponds" tend to have flat, wet shorelands without many trees. "Clay" and "bedrock" are also poor soils for septic tank drainage. \textit{See LDS, PART I, \textit{supra} note 108, at 26.} So is sand; but, on the other hand, (from the consumer's standpoint) sandy beaches are ideal for development. \textit{Id.} at 25.

\textsuperscript{202} Interview with Ron Harnack, Division of Waters, Soils and Minerals, Dep't of Natural Resources, State of Minnesota, in St. Paul (Feb. 1, 1971).

\textsuperscript{203} \textit{MINN. REG. CONS} 71(a) (2)(dd) (1970).
erned by the same rules as Natural Environment lakes. But they were to be selected by different criteria. Rather than being "unsuitable for development," they were to be already "badly deteriorated." These lakes, said the standards, "shall be studied in further detail to determine appropriate standards for shore-land development for each individual lake."204 Again, the abstract idea seemed rational; and its inclusion in the statewide standards was another manifestation of the DNR's tendency—at that stage—to embrace all the plausible classification theories. The Natural Environment classification rested on a prophecy: we predict that this lake will deteriorate badly if its shore-lands become densely developed. Now what about lakes that are already badly deteriorated? Aren't these the ones where corrective measures are most urgently needed? If they were sparsely developed and if they met the criteria that defined "unsuitable for development," then they probably would be classified Natural Environment. Otherwise, they might be classified at the other extreme (General Development) because they were deep, or large, or had densely developed shorelands. A GD classification, however, would mean that the lakes that were already badly polluted would receive the least protection under the new program. On the other hand, if such a lake were heavily developed, the new land use controls, operating prospectively, probably would not do much good. What was really needed was an intensive study of the individual problems of these lakes, leading to unique management plans. In some cases, the plan might involve land use controls; in others, the remedy might be outside the DNR's jurisdiction—for example, improved municipal sewage treatment. In the meantime, as a signal to the citizenry, and to do whatever good could be done by zoning, the DNR decided to classify these lakes Critical.205

The first problem with this classification was that the DNR could not find a reliable way to identify "badly deteriorated" lakes. From time to time the Minnesota Pollution Control Agency had made ad hoc studies of particular lakes, some of which were severely polluted.206 But many of the worst ones had not been studied adequately.207 The DNR therefore tried to

204. Id.
206. The author has examined several such studies.
207. Shapiro Interview, supra note 141. Dr. Shapiro cited Lakes Shagawa (St. Louis County), Sallie (Becker County), and Big Stone (Big Stone County) as examples of important, eutrophic lakes that had not been thoroughly studied at the time the DNR had to make its decisions.
devise a system for identifying Critical lakes by using the LDS data. Because the purity of most lakes and streams had never been measured scientifically, the LDS had not collected statistics about water quality. Nevertheless, it seemed reasonable to assume that a lake with Natural Environment physical characteristics ("unsuitable for development"), combined with General Developmental characteristics (relatively heavily developed) would be badly deteriorated—that, after all, was the prophecy underlying the Natural Environment classification criteria. Accordingly, the DNR’s original plan was to classify lakes meeting both these standards as Critical.

During the classification process, the planners began to have second thoughts about Critical lakes. As defined in the statewide standards, this was to be a temporary classification, pending the completion of master plans based upon intensive studies. That sounded perfect, until they began to ponder the implications. Studies by whom? Are we—with no assurance of adequate money and staff—going to assume an obligation to devise comprehensive plans for hundreds of lakes? Leery of this administrative monster, the DNR backed away. Lakes that fell within the formula for this classification were treated as only potentially Critical. The final, official designation as Critical was made rarely, reluctantly, and very subjectively. The result often turned on the classifier’s visual impression of the lake during a field trip undertaken for this purpose. Only nine lakes were so classified. Although nearly all Critical lakes appear to be badly eutrophic, many apparently equally eutrophic lakes were classified General Development. More—

209. Hambrock Interview (May 10, 1976), see note 83 supra. Hambrock volunteers that the “concept was maybe not thought out as well as it should have been. Our idea was to throw it in and see what happens.” Id. Even during the classification process, the planners began to wonder whether land use controls could achieve anything around such lakes. Menter Interview (Aug. 3, 1970), see note 83 supra.
210. Menter Interview (May 19, 1976), see note 83 supra.
211. Hambrock Interview (May 10, 1976), see note 83 supra. Unlike most other lakes, every “Critical” lake was inspected before being classified. Id. One of them was so odoriferous that a visiting planner had difficulty breathing. Hambrock Interview (July 14, 1970), see note 83 supra.
212. DNR, CLASSIFICATION, supra note 181, at 22.
213. Menter Interview (May 19, 1976), see note 83 supra.
214. For example, all three of the lakes listed by Dr. Shapiro, supra note 207, were classified General Development. The classification lists for individual counties are on file at the DNR; copies are on file with the author.
over, the DNR has no evidence that the pollution of any of these lakes can be curbed by controlling septic tank drainage. The Critical classification, as the planners now seem to realize, was a mistake.

III. THE EFFECTS OF VARIANCES: A CASE STUDY

Now that all of the counties have adopted shoreland zoning ordinances, they have exchanged roles with the state: the DNR counsels; the counties decide. The Department did not reserve a general veto power over variances or other local administrative decisions. For one thing, it was unclear whether the language of the Shorelands Act, which basically contemplated local administration, could be stretched that far. The DNR was also inhibited by political and administrative fears. Local governments tend to accept general state standards more readily

215. Hambrock Interview (Nov. 10, 1970), see note 83 supra. See also text accompanying notes 140-41, 149 supra.

216. See note 209 supra and accompanying text. The DNR has since reclassified some of the Critical lakes and is considering further reclassifications. Interview with David Milles, Senior Hydrologist, Dep't of Natural Resources, State of Minnesota, in St. Paul (June 9, 1976).

217. Although only about half of the counties met the statutory deadline (July 1, 1972), the rest enacted satisfactory ordinances by September 1, 1973. MINNESOTA DEP'T OF NATURAL RESOURCES, MINNESOTA'S SHORELAND MANAGEMENT PROGRAM: SCOPE—ADMINISTRATIVE PHILOSOPHY—STATUS 4, 8 (1974).

218. The statewide standards reflect compromises on this point that look more assertive in print than they have proved to be in practice. Thus, the DNR must be notified of forthcoming variance hearings, and it must be promptly furnished with copies of all variance decisions. MINN. REG. CONS 75(a) (1970). Compliance with this requirement has been spotty. Some counties did not incorporate this language in their ordinances, which were nevertheless approved by the DNR. In addition, many variances have been granted informally by zoning administrators, who usually do not solicit the DNR's advice. The notices of formal hearings sometimes are not sent, or arrive too late. And the copies of decisions—if and when they arrive—usually do not contain enough precise information to enable anyone to appraise the result. Interview with Bruce Gerbig, Shorelands Unit, Dep't of Natural Resources, State of Minnesota, in St. Paul (Apr. 23, 1976).

The DNR also adopted an ambiguous requirement that "[a]ll plats which are inconsistent with the county shoreland ordinance shall be reviewed by the . . . [DNR] before final county approval may be granted." MINN. REG. CONS 74(b) (1970). The DNR has not interpreted "reviewed" to mean "approved"—at most, it advises a county that the plat should not be approved. Frequently, the county does not even send a copy of the plat. Gerbig Interview, supra.

219. The relevant statutory language is quoted in text accompanying note 88 supra. It is obviously ambiguous about the possibility of state vetoes.
than direct state intervention in specific cases.\textsuperscript{220} The drafters also knew that their small shorelands staff could not evaluate thousands of variances every year.\textsuperscript{221}

The statewide standards do, however, provide that any cluster development proposal that involves a relaxation of the DNR's lot size or other density controls must be approved by the Department.\textsuperscript{222} Hoping that their large lot sizes would make clusters more profitable than ordinary subdivisions,\textsuperscript{223} the planners were prepared to appraise each plan for a cluster development to make certain that its environmental features justified whatever density concessions the developer requested. Unfortunately, the anticipated trend toward cluster development still has not occurred. Despite the large lot sizes imposed by the state, only a few developers have asked the DNR for permission to build clusters.\textsuperscript{224} Most of those that the DNR has approved were later rejected by the county governments, as was their right under the statewide standards.\textsuperscript{225} Evidently the DNR misjudged the demand for cluster housing and the practical difficulties that a cluster developer often encounters, including fierce resistance from nearby residents.\textsuperscript{226}

Judged by reference to the planners' original aspirations, the absence of cluster developments may be the major failure of shoreland zoning. But to ordinary citizens this kind of failure is

\textsuperscript{220} Explaining the absence of a veto power, one official said "we didn't want to create a 'flap.'" Hollenstein Interview (Nov. 14, 1970), see note 83 supra. Another recalls that "we didn't feel that we had a sufficient legislative mandate [to reserve a veto power], especially considering the sensitivity of the program in its initial stages," Hambrock Interview (May 10, 1976), see note 83 supra. He adds: "If you give them [the counties] some standards, and let them make the decisions [concerning variances], that's generally fairly palatable," as contrasted with requiring that particular local decisions be submitted to the state for approval.

\textsuperscript{221} Hambrock Interview (May 10, 1976), see note 83 supra.

\textsuperscript{222} MINN. REG. CONS 74 (d) (1970).

\textsuperscript{223} See note 177 supra.

\textsuperscript{224} One former official recalls about two or three serious proposals for cluster developments, plus a few informal inquiries. Hambrock Interview (May 10, 1976), see note 83 supra. This may be partly because so far most new construction has been on GD and RD lakes, where the dimensional rules are much less strict than on NE lakes. See Table II, at p. 823 infra.

\textsuperscript{225} Bruce Gerbig, of the DNR's Shorelands Unit, does not recall any shoreland cluster developments that have been approved by both the DNR and the local government. There have been several "quite good ones" that the DNR has approved "and then they've been chopped down on the local level, even though from our standpoint it has less impact than most development." Gerbig Interview, supra note 218.

\textsuperscript{226} See generally Lloyd, supra note 171.
exceedingly inconspicuous, and it has not been publicized. Building setback variances, on the other hand, are relatively visible; and for them there is someone to blame. It is not surprising, therefore, that metropolitan environmentalists have publicly expressed only one criticism of shoreland zoning: that it may be a "fraud" because variances are freely granted.\textsuperscript{227}

They mean, of course, that the substantive regulatory goals may be nullified, not that landowners are being treated unfairly. This apprehension, like similar speculation elsewhere, is based upon anecdotal evidence rather than systematic collections of data. To measure the effects of variances more precisely, we selected two Minnesota counties: Otter Tail and Wright. These counties are not necessarily representative,\textsuperscript{228} but they do provide contrasts. Although both are predominantly rural and agricultural, Otter Tail is much larger.\textsuperscript{229} It contains some 686 lakes of 25 or more surface acres, which, together with Wright's 221 lakes, comprise over nine percent of all the regulated lakes.\textsuperscript{230} Wright County is on the fringe of the Twin Cities metropolitan area, while Otter Tail is in west-central Minnesota, relatively remote from large cities. As one would expect, Wright's shorelands are more heavily developed; but Otter Tail has become a popular site for lakeshore homes.\textsuperscript{231} Neither county contains magnificent northwoods scenery. Yet they both

\textsuperscript{227} St. Paul Dispatch, Sept. 5, 1973, at 1, col. 1 ("Environmentalists Rap Shoreland Act Variances").

\textsuperscript{228} Possibly the counties with the worst records are in northern Minnesota, where residents have traditionally been hostile to state regulations. In contrast, seminar students, using our methodology to study building setbacks in counties near the Twin Cities, have generally found that the incidence of variances is distinctly less than in Wright and Otter Tail.

\textsuperscript{229} Otter Tail comprises 1,962 square miles; Wright comprises 674 square miles. U.S. \textit{BUREAU OF THE CENSUS, COUNTY AND CITY DATA Book—1972}, at 246, 258 (1973) (a statistical abstract supplement).

According to the 1970 census, Otter Tail's population was 46,087, of whom 15,936 were "farm population" and 17,718 were "rural non-farm population." The farm population, however, declined by 24.8\% between 1960 and 1970. \textit{Id.} at 246, 256. Wright's population was 38,933 (58 per square mile, as opposed to 23 in Otter Tail). \textit{Id.} at 258, 246. Wright's farm population was 9,784 (a decline of 28.2\% between 1960 and 1970), with a rural non-farm population of 25,874. \textit{Id.} at 268. In both counties well over half of the land area is cultivated. \textit{STATE OF MINNESOTA DEP'T OF ECONOMIC DEVELOPMENT, MINNESOTA PROFILE 42} (1975).

\textsuperscript{230} \textit{CLASSIFICATION SCHEME, supra} note 119, at 20-21. The statewide total is 9,667. \textit{Id.} at 21.

\textsuperscript{231} See, e.g., Table II, at p. 828 \textit{infra}. The LDS reported that Wright County had 11.2 homes per mile of shoreline; Otter Tail had 6.4. LDS, \textit{PART I, supra} note 105, at 13.
have attractive pastoral lakes, often moderately eutrophic, but pleasant for the usual recreational pursuits. Wright County zoned its shorelands a few years before the Shoreland Management Act, though with much less stringent rules than those that the state later imposed, and it now has countywide zoning.\textsuperscript{232} Otter Tail, on the other hand, had no zoning before the state intervened, and its land use controls are still confined to shorelands.\textsuperscript{233} Nevertheless, the DNR’s Shorelands Unit regards Otter Tail County’s zoning office as a paradigm of administrative excellence. Its zoning administrator—a retired businessman—is reputed to be extraordinarily efficient, strict, and respected by local politicians.\textsuperscript{234} Wright County’s undistinguished managerial reputation is more typical of rural counties.\textsuperscript{235} In both counties, however, there is enough conflicting evidence about popular and official attitudes toward zoning to make generalizations untrustworthy.\textsuperscript{236}

\begin{itemize}
  \item \textsuperscript{232} A comprehensive county-wide zoning ordinance has been in effect in Wright County since September 1967. The required shorelands regulations were incorporated by amendment in January 1973. Before then, the ordinance imposed a lakeshore minimum building setback of only 30 feet. \textit{Wright County, Minn., Zoning Ordinances} § 10 5-2(d) (1967). The minimum lakeshore lot area was 20,000 square feet for lots with individual water and sewer systems, and 15,000 square feet for lots with community systems. \textit{Id.} § 10 5-5(a), (b). Thus, the lot area and building setback rules were less than half as strict as the DNR’s rules for GD lakes.
  \item \textsuperscript{233} The county zoning administrator says that countywide zoning is not yet politically feasible. He believes, however, that as the residents have become accustomed to state-imposed shoreland zoning some of the previous fears of land use controls have dissipated. Interview with Malcolm Lee, Zoning Administrator, Otter Tail County, in Fergus Falls (Sept. 9, 1975).
  \item \textsuperscript{234} Of course, these conclusions, expressed to the author on numerous occasions, do not necessarily indicate anything about the specific problem of variances.
  \item \textsuperscript{235} It would serve no purpose for us to describe the sketchy, and probably unreliable, facts and rumors that led us to select Wright as the county that, of all those within commuting range of the Twin Cities, had the worst reputation for laxity and inefficiency. Suffice it to say that this conclusion was based upon conversations with state officials and examination of the DNR’s incomplete files of county variances. More recently, the situation in Wright County may have improved.
  \item \textsuperscript{236} Even in Otter Tail County there has been plenty of opposition to zoning. During 1967-69 (prior to the Shoreland Management Act), public hearings were held on a proposed county zoning ordinance. The hearings were well attended and strong opposition was expressed. During one “packed” session an opponent pounded his shoe on the table while attacking zoning as “communism” and “socialism.” Responding to widespread opposition by farmers, the Board of Commissioners unanimously rejected the proposed ordinance. Thereafter, three commissioners who had earlier supported it were voted out of office despite their
A. Methodology

We studied the impact of variances on two types of shoreland zoning rules: building setbacks and septic tank drainfield setbacks. In ordinary zoning, setbacks are rather trivial rules, especially compared to use restrictions. But Minnesota’s shoreland zoning standards, as interpreted by the Department of Natural Resources, do not contain meaningful use restrictions, and the DNR clearly regards the drainfield setbacks as outstandingly important. By all anecdotal accounts, the building setbacks are varied much more frequently than any other state-imposed rule; thus, they were another natural choice for intensive study. Since building setbacks serve only aesthetic purposes, while drainfield setbacks are designed to reduce pollution, a joint study of the two rules will enable us to compare the impact of variances upon different regulatory aspirations. Inasmuch as both of these rules vary in strictness, depending on the lake’s classification, our study also furnishes some evidence about the relationship between a rule’s strictness and the extent to which it is subverted by variances.

Of course, we could not measure the ultimate social consequences of variances. Our ambitions were more modest: to calculate how close to the lake landowners are placing their houses and drainfields, to determine the extent to which these distances are affected by variances, and to appraise the results in the light of the justifications for the setback rules.

We compiled statistics as follows:

1. We examined every building permit issued in Otter Tail County during one year. In Wright, where there was less current shoreland construction, we covered two years.

votes on the final resolution. Interview with Kenneth Hanson, Auditor, Otter Tail County, in Fergus Falls (Aug. 9, 1975). A subsequent effort to impose a moratorium on development along one of the county’s rivers, pending adoption of the state’s shoreland zoning rules, was defeated after “extreme reactions by property owners.” The spokesman for this proposal was threatened with lynching at one meeting and was also warned that a farmer had threatened to shoot him if his canoe was spotted in the river. Interview with Richard Pemberton, attorney, in Fergus Falls (Sept. 9, 1975). Today, the reaction to zoning is more mixed. Pemberton, who is active in environmental causes, has observed a continual softening of attitudes from the original violent opposition. He says that the county and township leaders have come to see the ordinance as a weapon against outsiders, although a substantial undercurrent of opposition remains. Id.

237. See text accompanying note 120 supra.

238. Hambrock Interview (Sept. 19, 1974), see note 83 supra.

239. We compiled our information during the summer of 1975. To
avoid even the remote possibility that our presence would influence the decisions being studied, we did not examine 1975 permits. Instead, our study covered 1974 permits in Otter Tail County and 1973-74 permits in Wright.

Thus, we excluded permits for nonresidential structures (sheds, for example), additions to preexisting dwellings (new porches, for example), and dwellings on nonriparian lots.

Unless the landowner's lot extends to the water, the absence of a setback variance (or the small size of the variance) is not necessarily indicative of how close to the lake the first tier of houses is or will be erected. To avoid complex assumptions and calculations, we also excluded nonriparian lots even if part of the lot was within the setback zone and separated from the lake only by a highway, a public beach, or a small substandard lot.

Of course, we also excluded permits for construction on lots within municipalities or adjacent to lakes with a surface acreage of less than 25 acres because the statewide rules did not apply to these lots.

It is difficult enough to imagine the aesthetic effects of houses located various distances from the water, without mingling them with sheds, signs, barns, and enlargements of preexisting houses. Because sewage plants, power plants, marinas, and the like were less than one percent of shoreland construction, their exclusion did not affect the statistics. We excluded buildings in resorts and campgrounds because we could not readily ascertain whether they were (and would remain) in the first tier of development around the lake.

Some building permits were for houses to be erected on preexisting basements or footings, or on basements to be created under existing houses. In all such cases, we treated the earlier of the two permits as crucial and included it if it was issued within the study period.

We included mobile homes and travel trailers, except in rare cases where the building permit contained information indicating that it would be moved within a few years. We excluded houses on lots that were so large as to create a substantial risk that the landowner—though perhaps not presently seeking a variance—would someday subdivide the lakeside portion of the lot, after which setback variances might conceivably be obtained by residents of the subdivision.

Some new houses—especially farmhouses—are on lots that abut a lake and are located within 1,000 feet of the lake (so as to be subject to the shoreland zoning rules), but are so far away from the water that they may well (already or eventually) be in the second or even third tier of development. For example, a farmer with an 80-acre tract abutting a small, marshy lake may choose to build his house on a road 600 feet from the water. Although he is “complying” with the lakeshore setback, his compliance is not necessarily indicative of how close the first tier of houses will be to the lake. Such cases could not be detected unerringly because—if no variance was obtained—the building permit often stated the minimum (not the actual) setback. Besides, it was infeasible to determine in each case whether there was already another house (on the same lot) closer to the lake. We believe, however, that we eliminated most of these cases by applying two crude rules-of-thumb: (1) all lots comprising 11 or more acres were excluded from the Basic Data Pool (BDP) (we calculated that this was the acreage at which the percentage of building setback variances began to decline sharply); (2) cases where the permit listed an actual setback, which
mits were our "Basic Data Pool" (BDP) for the purpose of analyzing building setback variances.

3. The BDP for the study of septic tank drainfields was derived from the building BDP, but was smaller because, for this purpose, we excluded any building permit for which a corresponding drainfield permit had never been issued.\footnote{241}

4. Concerning every BDP permit, we recorded several kinds of information: the adjacent lake's classification; whether the landowner received a building or drainfield setback variance (in any year); the size of the variance; any recorded reasons for it; the inspector's notation of the actual setback; whether the lot was substandard; and, if so, whether it was of record prior to the effective date of the county's shorelands ordinance.

We defined "variance" broadly, including every recorded dispensation from the setback rules regardless of whether it might more properly be called an "exception" instead of a variance.\footnote{242}

\footnote{239} was large enough to enable the landowner to subdivide, creating a standard-sized lot between his house and the lake were also excluded. For this purpose, the lot area had to be at least twice as large as the relevant statewide minimum area, and the setback indicated on the building permit had to be 195, 220, 320, or 320 feet, respectively, for GD, RD, NE, and C lakes (statewide minimum building setback for potential second house, plus 20-foot presumed minimum depth of that house, plus 100 feet between the houses, to allow for one front and one rear yard).

These exclusions are debatable, but, given the general tenor of our conclusions, we preferred a method that might overstate the effects of variances to one that might understate them. In any event, these exclusions did not substantially affect the statistical results of our study.

\footnote{241} Some landowners build their houses over a period of time and do not obtain a sewage permit until the house is finished. \supra note 233. Others never install septic tanks. In Otter Tail County, privies are common, but, since the county doesn't require a permit for a privy, the zoning records do not reveal their setbacks. See \textsc{Otter Tail County, Minn., Shoreland Management Ordinances § VI(A) (1) (1973)} (no permit is necessary for structures of less than 100 square feet). Finally, some landowners install holding tanks instead of septic tank systems. Since the statewide standards do not contain setbacks for holding tanks, we excluded them from our investigation.

\footnote{242} The distinction between "exceptions," whose prerequisites are defined more or less concretely by the ordinance, and "variances," issued in accordance with more nebulous standards of hardship, causes some confusion even under the best of circumstances. \textit{See Annot.}, 93 A.L.R.2d 1244, 1246 (1964). Since nearly all of the building setback dispensations that we examined involved one of the DNR's three categories of permissible dispensations (although not always with adequate proof that the petitioner was entitled to the dispensation), and there was no clear line between the kinds of dispensations issued routinely by the zoning administrators and those that were issued by the boards, we decided that for our purposes the distinction would have obscured more than it revealed.
It would have been useful to distinguish between the impacts of legal and illegal variances; but that was usually impossible. Many variances were issued informally by the zoning administrators. For example, in Otter Tail County the zoning administrator grants variances whenever he believes that they are justifiable. In such cases, the building permit contains (at most) a suggestive comment, such as "25-foot setback variance due to lay of the land." For formal variances, the records of the boards of adjustment were often equally unenlightening. Furthermore, the justifications for setback variances frequently cannot be verified without inspecting the premises, which was infeasible, or relying on staff reports, which did not exist. Apart from these practical difficulties, the relevant law contains so many ambiguities that, with all the facts known, many evaluations of individual decisions would still be incon-

In most cases, the building permit indicated either that the statewide setback would be complied with or that a variance of a certain size had been granted. To be doubly certain, we also examined the minutes of the boards of adjustment. If the building permit was issued during our study period, but the variance was issued earlier, we included the case in our BDP; if the variance was issued during the study period, but the building permit was not, we treated the variance itself as a building permit, which evidently was what the landowner had done.

If the setback figure on the building permit differed from the one on the inspector's sheet, we used the latter. (The differences, which appeared rarely in Otter Tail County and never in Wright, were usually trivial.) Similarly, if the setback figure on the building permit (issued after a formal variance was obtained) differed from the figure allowed by the variance, we assumed that the building permit was more likely to be accurate.

There were also a few cases in Otter Tail where the variance was expressed in terms of a range (for example, 40-50 feet). We averaged the figures.

243. For example, we determined that in Otter Tail County during 1974, 314 variances of all sorts were granted. Of these, 254 were issued informally by the zoning administrator's office. During the first few years after enactment of the county shorelands ordinance (1971-73), almost all applicants were required to resort to the Planning Advisory Commission (PAC), which serves as the board of adjustment in this county. "Long agendas" led to an informal agreement between the zoning administrator and the PAC, under which the former was authorized to issue variances "when justified" to "cut red tape." Lee Interview, supra note 233.

244. Id. Lee estimates that about 90% of those to whom his office denies a variance subsequently request relief from the PAC. We calculated that during 1974 the PAC granted two-thirds of these applications. Therefore, the practice of issuing informal variances does not appear to have increased the number of variances.

245. To avoid confusion, we have used the term "board" throughout the text to refer to Otter Tail County's PAC, as well as Wright County's Board of Adjustment. See note 243 supra.
For these reasons, we calculated the impact of all variances, not just the illegal ones.

B. Septic Tank Drainfield Setbacks

Table I contains the findings pertaining to drainfield setbacks.

**TABLE I**

**SEPTIC TANK DRAINFIELD SETBACKS**

<table>
<thead>
<tr>
<th>ACTUAL SETBACK (Feet)</th>
<th>GENERAL DEVELOPMENT (50')</th>
<th>RECREATIONAL DEVELOPMENT (75')</th>
<th>NATURAL ENVIRONMENT (150')</th>
<th>CRITICAL (Dead Lake) (150')</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>OT</td>
<td>W</td>
<td>OT</td>
</tr>
<tr>
<td>0-25</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>26-35</td>
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<tr>
<td>36-45</td>
<td></td>
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<tr>
<td>46-49</td>
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<tr>
<td>50 feet</td>
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<tr>
<td>51-55</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56-65</td>
<td>3</td>
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<td>1</td>
<td></td>
</tr>
<tr>
<td>66-74</td>
<td>3</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>75 feet</td>
<td>8</td>
<td>1</td>
<td>6?</td>
<td>8?</td>
</tr>
<tr>
<td>76-85</td>
<td></td>
<td></td>
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<td>85-95</td>
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<td></td>
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<tr>
<td>96-105</td>
<td>14</td>
<td>2</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>106-115</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>116-125</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>1</td>
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<tr>
<td>126-135</td>
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<td>138-145</td>
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<td>2</td>
<td></td>
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<td>146-149</td>
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<td>1</td>
<td>1</td>
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<tr>
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<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>No Variance, But Not Inspected</td>
<td>N/A</td>
<td>20</td>
<td>N/A</td>
<td>28</td>
</tr>
<tr>
<td>BDP</td>
<td>46</td>
<td>40</td>
<td>22</td>
<td>53</td>
</tr>
<tr>
<td>Variances</td>
<td>None</td>
<td>None</td>
<td>2</td>
<td>None</td>
</tr>
<tr>
<td>% Variances</td>
<td>--</td>
<td>--</td>
<td>9%</td>
<td>--</td>
</tr>
<tr>
<td>Average Official Minimum Setback After Variances</td>
<td>50</td>
<td>50</td>
<td>74</td>
<td>75</td>
</tr>
<tr>
<td>Average Actual Setback (Estimated)</td>
<td>115</td>
<td>98-129</td>
<td>107-121</td>
<td>119-140</td>
</tr>
</tbody>
</table>

246. See notes 273-80 *infra* and accompanying text.
The vertical columns subdivide the data according to lake classification and county, with the legal minimum setback for each classification appearing at the top of the table. The horizontal columns show the numbers of BDP drainfields at varying distances from the lakes. For example, on General Development lakes in Otter Tail, there were four drainfields whose setbacks were between 116 and 125 feet. All variances are italicized.

We obtained the "actual setback" figures from the counties' records. In Wright, every new drainfield is inspected by one of 20 township inspectors;\textsuperscript{247} in Otter Tail, four employees of the county zoning office inspect as many systems as time permits.\textsuperscript{248} If the drainfield was inspected, we used the setback figure recorded on the inspection sheet, which—as the table attests—usually was substantially greater than the legal minimum. In many cases, however, the recorded figure was ambiguous. For example, on a General Development lake, the inspector sometimes wrote "50 ft." or "O.K." or "50+," any of which might mean merely that the permittee had complied with the law. One Otter Tail inspector says that such notations usually mean that the actual setback so plainly exceeded the legal minimum that the inspector didn't bother to measure it.\textsuperscript{249} On the other hand, a Wright County official interpreted these styles of notation to mean that the setback was at or near the legal minimum.\textsuperscript{250} Perhaps each county has its own consistent methods; but with a total of 24 inspectors in the two counties, generalizations are probably unreliable, even if each individual inspector follows a consistent practice. Wishing to be conservative, we tabulated these cases as if the actual setback were the legal minimum, using question marks to remind the reader that this assumption is doubtful. As will be explained, we took account of this uncertainty when we calculated ranges for the average actual setbacks.

If there was no inspection, but the permittee received a variance, we assumed that he placed the system as close to the

\textsuperscript{247} Interview with Charles Davis, Sanitarian, Wright County, in Buffalo (Mar. 27, 1976).
\textsuperscript{248} Interview with Richard Berge, Inspector, Otter Tail County Zoning Office, in Fergus Falls (Mar. 25, 1976).
\textsuperscript{249} Id.
\textsuperscript{250} Davis Interview, supra note 247.
lake as he had been permitted to do.\textsuperscript{251} Those who did not receive a variance (and were not inspected) are listed separately in the sixth row from the bottom of the table. Their true distribution presumably tends to resemble the distribution of the inspected, conforming drainfields.

To determine the "average official minimum setback after variances" (second row from bottom) we added the setbacks of those who received variances to the legal minimum setbacks of those who did not, dividing the result by the total number of permittees.

The average actual setback (bottom row) is expressed as a range to reflect varying assumptions about the meaning of the ambiguous inspection sheet annotations. To calculate the lower end of the range, we adopted the conservative assumption described above: that, for instance, "O.K." means exactly the legal minimum setback. To calculate the upper end of the range, we discarded this assumption, supposing instead that the average setback of all conforming drainfields (including those where the inspector recorded the legal minimum) corresponded to the average setback of the inspected drainfields whose setback exceeded the legal minimum.\textsuperscript{252}

The table shows that only seven of the 177 permittees (about four percent) received a variance. In Otter Tail, there were no variances except on Dead Lake, the county's only Critical lake.\textsuperscript{253} Of the 86 permittees on General Development

\textsuperscript{251} Obviously, he might place it even closer, but that illegal conduct is not attributable to the variance. We found only a handful of cases in which the official inspection revealed that the landowner had built his drainfield or house closer to the water than he had been permitted to do, and the discrepancies in those instances were small. Strictly speaking, these were not variances, but we tabulated them as such because the landowners apparently were not required to build a new drainfield after the inspection, and in this sense they received a kind of informal ex post facto permission to violate the setback rules.

\textsuperscript{252} Even this figure may be conservative. \textit{See} text accompanying note 249 \textit{supra}.

\textsuperscript{253} Despite its name, Dead Lake is unique among the lakes classified Critical in that the classifiers did not regard it as already badly deteriorated. Under the DNR's formulas, it was on the borderline between the NE and RD classifications. The planners originally decided to classify it RD. It was not until the lake was accidentally seen during a field trip undertaken for other purposes that the classifiers began to consider classifying it Critical. Their inspection revealed that the existing development was confined to relatively small portions of the shoreline, which
lakes in both counties, none received a variance. No one on any lake classification received permission to build a drainfield closer than 50 feet from the lake; and the closest ones were the eight complying Otter Tail drainfields, which, though tabulated at "50 feet," may in fact be much farther back. Thus, the Public Health Service's recommended minimum setback\textsuperscript{254} has not been affected by variances.

The paucity of variances on GD and RD lakes seems to be due more to voluntary conduct than to the force of the law. The table shows that on these lakes most people construct their drainfields considerably farther back than the law requires. Indeed, there are some remarkable similarities between the average setbacks for the two classifications. In Wright County, the GD average is 115 feet; the RD average is 107-121 feet. In Otter Tail, the conservative GD average is 98 feet. If we had excluded one case where the drainfield was 600 feet from the lake,\textsuperscript{255} the conservative RD average in Otter Tail would have been 99 feet. Excluding the one at 600 feet, and averaging the ranges, the figures become virtually identical: 105 (OT/RD); 113.5 (OT/GD); 114 (W/RD); and 115 (W/GD).

According to county officials, the location of the drainfield is largely determined by the professional judgment of the installer, who considers such variables as the size and topography of the lot.\textsuperscript{256} At least in the range between 50 (GD) and 75 (RD) feet, the setback rules may be as unimportant as the variances.

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\textsuperscript{254} See text accompanying notes 133-34 \textit{supra}.

\textsuperscript{255} Building Permit No. 1909, issued on October 4, 1974, to Ralph Swanson. The lot has 150 feet of frontage and comprises 2½ acres. The building setback was recorded as "100+ ."

\textsuperscript{256} Berge Interview, \textit{supra} note 248; Davis Interview, \textit{supra} note 247.
On these lakes, the DNR's aspiration has been achieved by voluntary compliance.

The BDP's for Natural Environment and Critical lakes are not large enough to provide a basis for even tentative hypotheses about how well the prescribed 150-foot setback will hold up. Although our figures reveal high percentages of variances on NE lakes in Wright and on the Critical lake in Otter Tail, none of these variances permitted the drainfield to be closer than 96 feet from the water, or in other words, almost twice as far from the lake as the setback rule for General Development lakes. We have already suggested that the Critical classification was a mistake, a "bad rule" in terms of the characterizations discussed earlier in this Article. Given the anomalies of the classification process, and the rather tenuous evidence supporting specific setback rules, we see nothing alarming in Table I. If septic tanks are seriously polluting lakes in these counties, there is no reason to blame variances, even assuming arguendo that every variance was illegal.

C. BUILDING SETBACKS

Table II shows that the building setback rules were much more drastically undermined by variances than the drainfield setbacks.

257. Dead Lake is the only Critical lake in either county. The low rate of construction on NE lakes is probably due to the fact that because of their size, depth, and previous development density, the popular recreational lakes were generally classified GD or RD. See text accompanying notes 191-202 supra. Natural Environment lakes, by contrast, tend to be small, shallow, and marshy, and therefore less attractive as building sites. Id. In Otter Tail County, 534 lakes of less than 150 acres and 72 larger lakes were classified NE. There are 65 RD lakes and 14 GD lakes in the county. CLASSIFICATION SCHEME, supra note 116, at 21. In Wright County, the figures are: 130 (NE under 150 acres), 42 (other NE), 35 (RD) and 14 (GD). The statewide totals are: 6982 (NE under 150 acres), 1289 (other NE), 1108 (RD), 279 (GD), and 9 (Critical). Id. at 22.

258. See notes 206-16 supra and accompanying text.

259. See notes 63-64 supra and accompanying text.

260. See notes 155-63 supra and accompanying text.

261. Many of the permits in the BDP pertained to substandard lots of record, a point discussed more fully in connection with building setback variances. See text accompanying notes 270-80 infra. Excluding such lots, the cumulative septic tank drainfield BDP in the two counties would be 69 (instead of 176) with only one variance (instead of 7). On NE lakes, excluding substandard lots of record, only one of the eight permittees received a drainfield setback variance.
### TABLE II

**BUILDING SETBACKS**

<table>
<thead>
<tr>
<th>ACTUAL SETBACK (Feet)</th>
<th>GENERAL DEVELOPMENT (75')</th>
<th>RECREATIONAL DEVELOPMENT (100')</th>
<th>NATURAL ENVIRONMENT (200')</th>
<th>CRITICAL (Dead Lake) (200')</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>OT</td>
<td>W</td>
<td>OT</td>
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<tr>
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<td>25-35</td>
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<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>35-45</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>45-55</td>
<td>2</td>
<td>4</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>55-65</td>
<td>7</td>
<td>7</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>65-74</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>75'</td>
<td>12?</td>
<td>13?</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>75'</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>85-95</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>95-99</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>100'</td>
<td>7</td>
<td>1</td>
<td>7?</td>
<td>7?</td>
</tr>
<tr>
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<td>1</td>
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<tr>
<td>115-125</td>
<td>5</td>
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<td>1</td>
<td>3</td>
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<tr>
<td>125-135</td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
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<tr>
<td>135-145</td>
<td></td>
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<td>195-199</td>
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<tr>
<td>200'</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over 200 feet</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Variance, But Not Inspected</td>
<td>37</td>
<td>24</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BDP</td>
<td>52</td>
<td>81</td>
<td>28</td>
<td>82</td>
</tr>
<tr>
<td>Variances</td>
<td>14</td>
<td>29</td>
<td>10</td>
<td>46</td>
</tr>
<tr>
<td>% Variances</td>
<td>27%</td>
<td>25%</td>
<td>38%</td>
<td>56%</td>
</tr>
<tr>
<td>Average Official Minimum Setback After Variances</td>
<td>70</td>
<td>70</td>
<td>88</td>
<td>79</td>
</tr>
<tr>
<td>Average Actual Setback (Estimated)</td>
<td>92-</td>
<td>79-</td>
<td>107-</td>
<td>84-</td>
</tr>
</tbody>
</table>

Forty-five percent of all the permittees in Otter Tail, and 36% of those in Wright, obtained a dispensation. By lake class, the percentages of building setback variances range from
25% (GD lakes in Otter Tail) to 100% (NE lakes in Wright; the Critical lake in Otter Tail). In Otter Tail County, on every lake class except GD, most of the landowners received variances. Twenty-six percent of the BDP on General Development lakes received variances; 27% of the BDP for all other classifications received permission to build closer than 75 feet from the lake, the equivalent of a variance on a GD lake.

True, the “average actual setbacks,” listed at the bottom of the table, exceed the minimums imposed by the rules on both GD and RD lakes. As the table shows, this is because at least half of those who did not obtain variances chose to build more than ten feet farther back than the setback rule required. This is some evidence (admittedly not conclusive) that the building setback rules, like the drainfield setbacks, are not having much effect on the conduct even of those who comply with them—the site’s topography may be more decisive than the law’s command.

Even so, the percentages of variances are too high to be dismissed lightly. The “average setbacks,” after all, are somewhat misleading—not as meaningless as “the average temperature in a Minnesota year,” but still deceptive. A lakeshore may be more attractive with two houses 75 feet from the water than with one at 25 and the other at 125 feet, though the averages are identical.

We have, therefore, a variance problem that requires further analysis. To begin with, the DNR evidently anticipated that its building setbacks would be varied more than any other rule; these are the only rules for which the Department promulgated concrete criteria for variances. According to the statewide standards, building setback variances are permissible in three situations:

Where structures incorporate a method of sewage disposal other than soil absorption; or

Where development exists on both sides of a proposed building site, setbacks may be varied to conform to the existing setbacks; or

In areas of unusual topography or substantial elevation above the lake level, setbacks may be varied to allow a riparian owner reasonable use and enjoyment of his property.262

The standards also authorize departures from setbacks (and other dimensional rules) on substandard lots, platted before the effective dates of the ordinances, if the lot is too small for the landowner to comply with the new rules.263

262. MINN. REG. CONS 73 (b) (5) (1970).
263. On these substandard lots of record, “sanitary and dimensional
In many cases, the counties’ records did not sufficiently reveal the grounds on which variances were granted. From perusing the records, however, we are reasonably certain that all or almost all of the variances involved some combination of grounds generally similar to those authorized by the state, but not always with sufficient proof that the DNR’s prerequisites had been met. Despite the clear language of the DNR’s second criterion, for example, we found many cases in which a variance had been granted in order to align the new house with a single neighbor’s house—reason enough to conclude that in these counties, as in others that have been studied, the boards are too lenient. Their leniency is certain to have what we called “multiplier effects”\(^\text{264}\) because—even under the DNR’s criterion—every building setback variance tends to justify further “on line with the neighbors” variances, except where both adjacent lots are already developed. With the counties ignoring the requirement that the preexisting development be on both sides of the applicant’s lot, there is all the more reason to expect that, as one dispensation is used to justify another, this type of variance will become increasingly common.\(^\text{265}\)

At this juncture, it would be easy to reach the conventional conclusions that the zoning scheme is threatened by leniency and that therefore reforms should be adopted in order to make variances more difficult to obtain. Before yielding to this temptation, we should consider whether the variance criteria or the substantive rules are so deficient that they ought to be redrafted before the state undertakes a vigorous effort to prevent unjustifiable variances.\(^\text{266}\) From this perspective, the first problem is that many counties did not adopt the DNR’s variance criteria because the DNR did not insist that they do so. In Wisconsin, as the DNR’s planners knew, many counties had not enacted adequate ordinances until well past the statutory deadline. Minnesota’s statute, like Wisconsin’s, says that if a county fails to meet the deadline the DNR “shall adapt the model ordinance to the county.” In both states, the DNR ignored this statutory command because the state officials concluded that such fiat would win the battle but lose the war. They preferred to explain and

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requirements” must be “complied with insofar as practicable.” MNN. REG. CONS 73 (a) (3) (1970).

264. See text accompanying note 62 supra.

265. So far, of course, nearly all of the preexisting dwellings cited to justify “on line” variances were constructed before the Shorelands Act.

266. See note 64 supra and accompanying text.
cajole, nurturing the delicate, growing sense of state-local cooperation. Their true power was much weaker than their apparent statutory power because—while they could force an ordinance upon a recalcitrant county—the county’s attitude would determine whether (or at least how) the ordinance was administered. In short, the statutory deadline exerted pressure on the DNR as well as the counties. The local politicians knew that they would eventually have to enact shorelands ordinances. The DNR, on the other hand, must have realized that procrastination by the counties might embarrass the Department, with its statewide constituency and its overall responsibility for the system, more than the offending counties, whose citizens might be even more suspicious of zoning than their elected representatives. The counties responded by adopting ordinances, if not before the deadline, then within a couple of years thereafter. The DNR, for its part, gratefully accepted “substantial compliance,” overlooking relatively minor departures from the statewide standards. As a result, many county ordinances (includ-
ing Otter Tail's) were approved despite their omission of the DNR's building setback variance criteria, creating a situation in which the old-fashioned case law on variances, the state's criteria, and the language of each local ordinance are all of uncertain relative weight, quite apart from their intrinsic ambiguities.

Even if every county had adopted the DNR's criteria, the law would not resemble the orderly universe of legal principles that is described in orthodox variance scholarship. At first glance, the main problem seems to be imprecise drafting. For example, the topographical criterion for variances is quite vague. This provision was designed to be a catchall, covering situations where, for instance, a variance is necessary to enable the landowner to see the lake from his cottage, or where the ground at the setback line is too wet or steep for a building foundation. We found such cases; but we also found cases in which variances were dispensed on other grounds, and one can only guess whether a court would uphold the dispensation. For example, variances were granted to enable the landowner to build in a field, instead of cutting down trees, as would have been necessary had he built at the setback line. Although these were not cases of "unusual topography or substantial elevation above the lake level," preserving trees seems as laudable as preserving a view of the lake, and the topographical criterion does not appear to have been written with such meticulous care that one can safely draw conclusions about the drafter's intentions.

Substandard lots are a much more serious problem. Al-

I envisioned a second wave, in terms of going back and working with our regional [DNR] people and trying to improve the ordinances." The DNR tried to get ordinances that were "80-90% good." Hambrock Interview (May 10, 1976), see note 83 supra.

270. A random sample of 11 approved ordinances, on file at the DNR, reveals that only one adopted the DNR's criteria verbatim; four adopted them with some modifications; and six contain only vague boilerplate language with phrases like "practical difficulties" and "unreasonable." Otter Tail copied only the definition of "variance" from the statewide standards:

a modification or variation of the provisions of the local shore-land ordinance where it is determined that, by reason of exceptional circumstances, the strict enforcement of any provision of the local ordinance would cause unnecessary hardship, or that strict conformity with the provisions of the local ordinance would be unreasonable, impractical or not feasible under the circumstances.


271. See text accompanying note 262 supra.

272. DNR, ELEMENTS AND EXPLANATIONS, supra note 123, at 28-29.
most all of the building permits covered by our study were for construction on lots platted before the effective dates of the shorelands ordinances—usually several years prior to passage of the shorelands act. Many of these lots were not deep enough to enable the landowner to comply with the new setbacks. This, more than any other single factor, is the reason for the high percentages of building setback variances. If substandard lots of record are excluded from the BDP, the overall percentage of building setback variances falls from 42 to 22%, and the percentage of landowners receiving permission to build within 75 feet of a lake declines even more sharply, from 26 to 5%. Since there is a finite (albeit unascertained) number of substandard lots of record, and much unplatted shoreland, the inflation of variance rates due to this factor should gradually decline. But in the meantime, substandard lots create questions that the pithy exemption in the statewide standards does not answer. To what extent should the road setback, applicable to the rear of the house, be reduced in order to preserve the lake setback? Should the building setback be sacrificed in order to place the drainfield behind the house and thereby preserve as much as possible of the drainfield setback?

Contrary to the DNR's original expectation, most drainfields are not being constructed between the house and the lake. For example, on GD lakes in Otter Tail County, Table I shows an average actual drainfield setback of 98-129 feet, while Table II shows an average building setback of only 79-83 feet. The explanation is that the drainfields are commonly placed beside or even behind the house. Frequently, the house is on a knoll, and the drainfield is built behind it, with the effluent draining away from the lake. Reading the rules, which contain larger setbacks for buildings than for drainfields, one might infer that this practice is harmful. But the DNR's planners do not claim that there is any substantive reason why the drainfield ought to be between the house and the lake. Indeed, on substandard lots they now recommend placing the drainfield as far as possible from the lake, if necessary by sacrificing part of the building setback to allow room for sewage disposal facilities behind the house.273

To understand all this, one must recall that throughout the history of shoreland zoning—in the legislature, then later when the rules were drafted, and now finally as the rules are being

273. Milles Interview, supra note 216.
administered—pollution control has been the paramount objective.\textsuperscript{274} Beset by a host of difficult drafting problems, the DNR's planners never managed to establish a coherent aesthetic policy. The criteria for building setback variances seem to reflect their awareness of this failure. For one thing, the criteria are generous, covering almost all of the foreseeable circumstances in which a layman's sense of rough justice might lead him to seek a variance. More significantly, the Department authorized building setback variances whenever the landowner uses "a method of sewage disposal other than soil absorption."\textsuperscript{275} The model ordinance says that in these cases the building setbacks "may be reduced by one-third."\textsuperscript{276} This is a puzzling concession because, of course, the landowner's method of sewage disposal neither necessitates nor alleviates the aesthetic impact of a building setback variance. The explanation is that the building setbacks were parasitic, calculated simply by adding several feet to the drainfield setbacks.\textsuperscript{277} Logically enough, the statewide standards do not contain setbacks for sewage disposal systems ("holding tanks") from which the effluent is periodically hauled away, rather than discharged through the soil toward the lake.\textsuperscript{278} Thus, the provision for building setback variances in these cases seems to be attributable to the DNR's general policy of linking building setbacks to drainfield setbacks.\textsuperscript{279} But why draw the line at

\begin{itemize}
  \item \textsuperscript{274} See text accompanying notes 84-85, 122, 187 supra.
  \item \textsuperscript{275} See Minn. Reg. Cons 73(b)(5)(aa) (1970).
  \item \textsuperscript{276} See Minn. Reg. Cons 77(4.26)(c) (1970).
  \item \textsuperscript{277} See text accompanying notes 132-34, 168 supra.
  \item \textsuperscript{278} See Minn. Reg. Cons 72(b)(6) (1970).
  \item \textsuperscript{279} The primary drafter of the rules offers a different explanation. He says he did not intend to authorize reduction of the building setbacks in such cases. Instead, he now recalls that he meant to write the variance criteria conjunctively so that building setback variances could only be obtained if "a method of sewage disposal other than soil absorption" is employed, "\textit{and}" either of the other two enumerated grounds for a building setback variance exists. The idea was that, since most people locate the soil absorption system between the house and the lake, a legitimate building setback variance might generate a parasitic sewage disposal system variance, a result that could be rendered harmless by requiring the landowner to use a holding tank. Menter Interview (May 19, 1976), see note 83 supra. Although this may well have been one of the DNR's concerns, we think that his recollection is probably mistaken because—even if one assumes that the contrary language of the mandatory statewide standards was due to an oversight—the provision in the model ordinance for a one-third setback reduction is plainly permissive and can hardly be explained as a prophylactic against parasitic drainfield variances. Moreover, the DNR's explanatory literature, after hinting at Menter's explanation, proceeds to explicate the more natural interpretation of this provision:
\end{itemize}
holding tanks? By analogous reasoning, every landowner who complies with the septic tank drainfield setback would be entitled to a building setback variance; and thus (as Table I demonstrates) hardly anyone would have to comply with the building setbacks.280

Plainly, the building setback rules themselves are the crux of the problem. To justify conclusions about the substantive effects of variances, or to decide how lenient variance administration should be, one needs a norm against which to measure the impact of the dispensations. It is convenient and customary—when discussing variances—to accept the rules themselves as the substantive norms, ignoring the possibility that the rules as modified by variances are more sensible than they were before being modified. With that kind of analysis, all variances (or at least all illegal ones) are pro tanto substantively harmful. If one evaluates Table II in this wooden manner, the figures are obviously alarming—most of all on the Critical lake, where everyone in the BDP obtained a variance, and the average official setback after variances (94 feet) was less than half as great as the setback rule (200 feet).

But for our purposes, we should not accept the rules as the norms because we have learned enough about their origins to realize that they were not derived from profound planning wisdom. The building setbacks, as we have seen, were cal-

Building setbacks are probably the most difficult standards to prescribe in a zoning ordinance. A wide variety of local conditions can make these standards unreasonable when applied to individual cases. Therefore, these standards are, and should be, flexible to allow reasonable development and to treat equally all property owners in similar situations. Reasonability infers [sic] that the exceptions and variances do not circumvent other restrictions, such as sewage disposal standards, and will not interfere with public use of the body of water, such as placing docks so as to obstruct navigation.

Much of the reasoning for building setbacks is based upon the need for adequate sewage disposal. Where methods of disposal other than soil absorption are employed, the need for large setbacks is reduced. This condition, then, constitutes a strong argument for varying setback requirements.

DNR, ELEMENTS AND EXPLANATIONS, supra note 123, at 319 (emphasis added).

280. Ironically, the DNR now regards holding tanks as less desirable than drainfields because of the danger that landowners will dump the contents in the lake "on some dark night." Interview with David Milles, supra note 216. We found no cases in which a building setback variance was sought or granted on the express ground that the landowner planned to install a holding tank, but many in which the landowner could have urged this ground (because he did install a holding tank), but instead obtained his variance on some other ground.
culated by adding several feet to the drainfield setbacks on
the mistaken assumption that the drainfield would normally be
located between the house and the lake. Although building
setbacks serve no purpose but aesthetics, they were determined
by a method—perhaps reasonable as an expedient, but senseless
as an ideal—that had nothing to do with preserving beauty. From
the standpoint of aesthetics, there is no more reason to be
alarmed by a house with an illegal 100-foot variance, which is
located 100 feet from a Natural Environment lake, than by a house
needing no variance which is the same distance from a Recrea-
tional Development lake. To the extent that these classes of
lakes differ, the typical RD lake probably is more naturally
attractive (and more often used by boaters) than the shallow,
marshy NE lakes. This distinction is even more marked in the
case of Critical lakes, which were crudely selected even for the
purpose of pollution control, and which, though governed by
much stricter building setbacks, are presumably less beautiful
than most RD lakes.

The comparison of lake classifications becomes still more
ironic when one recalls that—for Natural Environment and
Critical lakes—the DNR's planners did not follow their own
basic method for calculating building setbacks: instead of
adding 25 feet to the drainfield setback, as they had done for
GD and RD lakes, they added 50 feet, evidently in order to
discourage construction around these lakes. Even if one
regards this as a legitimate technique, the fact remains that its
purpose was to prevent pollution, not to preserve beauty.

The peculiarities of Minnesota's variable building setback
rules should, of course, be distinguished from the intrinsic diffi-
culties of determining the proper balance between enjoyment of
 riparian property rights and preservation of shoreland amenities.
It would be unreasonable to expect rigorous proofs that particu-
lar setbacks are ideal. The problem is too complicated and
subjective. For example, the first house that breaks through the
screen of trees around a lake may spoil the atmosphere much
more dramatically than any subsequent intrusion. For this
reason, individual variances may be even more harmful than our

281. To be sure, one might partially justify the DNR's variable build-
ing setbacks on the ground that NE lakes are less developed than RD
lakes. But that was the only one of the several classification criteria
that makes sense in aesthetic terms. See generally text accompanying
notes 181-216 supra.
282. See text accompanying notes 203-16 supra.
283. See text accompanying note 170 supra.
VARIANCES

VARIANCES table suggests. Conversely, on a heavily developed lake, variances may be relatively inconsequential. Otter Tail has no tree-cutting rules; so the view from the lake may often be of lawns, a fact that could be more significant than the distance between the water and the house. Other complexities are easy to imagine.

If the DNR's building setbacks had been based on intuitive judgments about such matters, they would be at least a useful point of departure for analyzing the effects of variances. Regrettably, they were not. In terms of the characterizations suggested earlier in this Article, the building setbacks are bad rules. Not "bad" in the sense that any one of them, as a uniform statewide rule, would be indubitably undesirable; but bad in the sense that the variable building setbacks imposed by the classification system are essentially adventitious. Until this fundamental flaw in the rules is corrected, it will be difficult to justify further state intervention (for example, a veto power) on substantive grounds.

The state's planners are well aware of these anomalies, and also that the 200-foot setback on NE and Critical lakes is exceedingly—perhaps unjustifiably—strict. Evidently recognizing that the Critical classification was misconceived, the DNR has reclassified some of these lakes. But the planners have not undertaken any general revision of the building setback rules. Perhaps variances have functioned as a "political safety valve," placating landowners affected by the 200 foot setback, so that the Department feels no pressure to reconsider it.

284. See notes 63-64 supra and accompanying text. The building setbacks imposed under the Minnesota Wild and Scenic Rivers Act, MNN. STAT. §§ 104.31-.40 (1976), are distinctly more reasonable because the rivers designated under that act are classified largely by aesthetic criteria, with the strictest setbacks applying to the choicest rivers. See MNN. REG. NR 78(f) (1974) (rivers eligible for inclusion) and MNN. REG. NR 79(c) (3) (bb) (1974) (structural setbacks).

285. The primary drafter says that, in retrospect, he thinks the 200-foot setback was excessive. Menter Interview (May 19, 1976), see note 83 supra. The present chief of the Shorelands Unit says that "the big consideration is sewage, not aesthetics. I've seen cabins right on the shoreline and they look beautiful. It all depends on the finish." Interview with David Milles, Senior Hydrologist, Dep't of Natural Resources, State of Minnesota, in Minneapolis (Oct. 31, 1975).

286. See note 216 supra and accompanying text.

287. See note 59 supra and accompanying text.

288. One official surmises that the rule hasn't been changed because the DNR has felt no political pressure to do so. Menter Interview (May 19, 1976), see note 83 supra. This may be less because of variances than because so far most development is on the generally more
so, the local boards might more justly be criticized for delaying desirable revisions of the law than for subverting comprehensive planning.

IV. CONCLUSION

Our thesis has been that much can be learned by studying variances in the context of a regulatory system designed to achieve certain substantive results. In the first part of this Article, we mentioned three reasons for such an inquiry: (1) to assist drafters of land use controls; (2) to gather evidence about whether strict variance criteria are necessary; and (3) to facilitate informed choices among the various possible reforms of variance administration.

Like most drafters, Minnesota's planners took account of legal and political constraints. Our report provides information about another relevant consideration: the extent to which a rule's ostensible leniency or strictness will be altered by, on the one hand, voluntary conduct and, on the other, variances. With reliable evidence about these matters, the state's planners might have chosen different rules. They would have known, for example, that (at least in the two counties studied) it does not matter whether the drainfield setback is 50 or 75 feet. Whichever rule is chosen, there will be few variances, and the average distance between the drainfield and the lake will be somewhat over 100 feet. In this respect, Minnesota's variable rules, even if otherwise rational, may have been a superfluous complexity.

Concerning the necessity for strict variance criteria, we found immense differences between the two rules that we studied, even though—in orthodox legal terminology—they would be lumped together as "area restrictions." For drainfield variances, the DNR did not publish concrete criteria. Nevertheless, the moderate setbacks worked exceptionally well because only a tiny percentage of those affected by the rule requested a variance. For such rules, variance administration need not be strict; it need only be fair.

The building setback variances are a much more complicated problem. We have seen that administratively-drafted variance criteria can obfuscate the law rather than clarify it, as

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popular RD and GD lakes. See Table II, at p. 828 supra. It might therefore be more accurate to suppose that, as vacant shoreland on GD and RD lakes becomes more scarce and development on NE lakes consequently increases, setback variances will become a political safety valve.
some reformers have hoped. Minnesota's experience reinforces the common-sense conclusion that agencies whose mission is to draft a one-shot solution to a substantive problem are likely to treat administrative issues, including variance criteria, as secondary. Hence, our study might be interpreted as further support for the concept of a state land use agency, with a clear and continuing mandate to reform zoning administration, not merely, for example, to curb lake pollution.

But the major moral of this tale is not that new agencies should be established. It is, rather, that scholars should cross the artificial line between rules and dispensations because, for substantive and perhaps even for ethical purposes, the two are inseparable. No agency, however impressive its credentials, should be expected to draft and enforce strict variance criteria for a 200-foot lakeshore building setback, whose only justifications are an irrelevant study of nutrient migration and a false assumption about the relative locations of houses and their adjoining septic tanks. To be sure, there are reasons for obeying bad rules until they have been changed. But there are even better reasons for changing them. More often than scholars have habitually supposed, the leniency of zoning boards may be associated with, if not necessarily caused by, the absence of cogent justifications for the rules being varied, notwithstanding the clichés about the presumptive wisdom of planners. In such circumstances, the first priority should be rule-revision, both for its own sake and because it may ameliorate the variance problem. For example, our data show that very few landowners obtain a variance from the 75-foot building setback, except on substandard lots of record. Even a 100-foot setback might work well, especially if the state's planners—having discarded the 200-foot setback—were to redraft their variance criteria, making them clearer and perhaps stricter. Until something of this sort is done, the actual building setbacks will be the illegitimate children of dubious rules and lawless variances.

Another, more portentous lesson can be learned from the history of shoreland zoning in Minnesota. Simply put, the lesson is that centralized planning, whatever its virtues, does not eliminate the sheer difficulty of regulating land use. The DNR's planners made some mistakes, as anyone would; but they were nonetheless uncommonly idealistic, knowledgeable, and prudent. Yet they did not achieve very many of their aspirations. Tree-

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289. See pp. 832-33 supra.
cutting rules and regulation of farming were (or at least plausibly seemed to be) impolitic; mandatory zoning districts were infeasible; the large lot sizes were a mixed blessing; cluster developments did not appear; beautiful lakes and rivers did not receive special protection; there was not enough time to draft individual management plans for each watershed; the common law variance criteria were not substantially clarified; and the setback rules were, in varying degrees, questionable, unnecessary, and ineffective. Managing the landscape by zoning is far more difficult than most scholars—too readily inclined to round out a thesis by proposing new laws—have acknowledged. After all, who among us can tell the planners how to make real lakes look like a picture of "ideal lakeshore development"?