

The National Agricultural  
Law Center



University of Arkansas  
System Division of Agriculture  
NatAgLaw@uark.edu • (479) 575-7646

---

An Agricultural Law Research Article

**A Procedural Framework for  
Implementing Nonpoint Source  
Water Pollution Control in Iowa**

Originally published in IOWA LAW REVIEW  
63 IOWA L. REV. 184 (1977)

[www.NationalAgLawCenter.org](http://www.NationalAgLawCenter.org)

# A Procedural Framework for Implementing Nonpoint Source Water Pollution Control in Iowa

Nonpoint source water pollution is a major environmental problem in Iowa and in much of the United States. Unlike point source water pollution, which originates from discrete, localized points of discharge, nonpoint source water pollution is derived from nondiscrete, diffuse processes occurring on the land's surface generally.<sup>1</sup> Precipitation runoff,<sup>2</sup> when exposed to various types of land use activity,<sup>3</sup> can carry eroded soil, nutrients, chemical residues, animal wastes, and other pollutants into lakes, rivers, streams,<sup>4</sup> and ground waters.<sup>5</sup> Estimates indicate that two billion tons of sediment wash into the nation's waterways every year, more than 700 times the amount of suspended solids that reach the waters through the discharge of sewage.<sup>6</sup> Nonpoint sources of water pollution can negate water quality improvements gained from point source pollution control efforts<sup>7</sup> and are a substantial impediment to the achievement of water quality goals.<sup>8</sup>

Within Iowa, extensive nonpoint source pollution is caused by runoff from agricultural lands.<sup>9</sup> A major type of nonpoint water pollution—soil erosion—has occurred on 5.8 million acres of land in the state.<sup>10</sup> The production of some agricultural commodities by modern farming methods involves agricultural practices that expose topsoil to surface water runoff that causes erosion and carries soil particles, chemical fertilizers, and chemical pesticides into water bodies.<sup>11</sup> As a result, Iowa's rivers and streams are

---

1. See U.S. ENVIRONMENTAL PROTECTION AGENCY, METHODS AND PRACTICES FOR CONTROLLING WATER POLLUTION FROM AGRICULTURAL NONPOINT SOURCES 1 (1973) [hereinafter cited as METHODS AND PRACTICES]; IOWA DEP'T OF ENVIRONMENTAL QUALITY, IOWA WATER QUALITY REPORT VII-1 (1975) [hereinafter cited as WATER QUALITY REPORT].

2. Hines & Schantz, *Improving Water Quality Regulation in Iowa*, 57 IOWA L. REV. 231, 353 n.375 (1971).

3. Such activity includes agricultural production, mining operations, forestry, construction, and urban runoff. U.S. ENVIRONMENTAL PROTECTION AGENCY, GUIDELINES FOR STATE AND AREAWIDE WATER QUALITY MANAGEMENT PROGRAM DEVELOPMENT 7-3 (1976) [hereinafter cited as GUIDELINES].

4. WATER QUALITY REPORT, *supra* note 1, at VII-1.

5. GUIDELINES, *supra* note 3, at 7-1.

6. Comment, *Areawide Planning Under the FWPCA Amendments of 1972: Intergovernmental and Land Use Implications*, 54 TEX. L. REV. 1047, 1056 n.49 (1976) [hereinafter cited as *Land Use Implications*].

7. See *id.* at 1054-55.

8. See METHODS AND PRACTICES, *supra* note 1, at 1.

9. See WATER QUALITY REPORT, *supra* note 1, at VII-1.

10. *Id.*

11. Hines & Schantz, *Improving Water Quality Regulation In Iowa*, 57 IOWA L. REV. 231, 353 (1971).

chronically turbid, over-enriched with nitrates and phosphates, and loaded with bacteria.<sup>12</sup>

Little effort has been made in Iowa or the rest of the country to abate or prevent nonpoint source water pollution for several reasons. One reason is that control efforts must be implemented over vast areas of land. Approximately ninety-seven percent of privately owned, non-federal lands in the United States have had soil conservation problems.<sup>13</sup> The sheer magnitude of the problem may well have deterred any effective response.

A second reason for a lack of regulation in this problem area is that initial environmental protection programs have been directed toward point source water pollution problems.<sup>14</sup> In 1972 the Congress, convinced of the need for stronger measures in this area of national water quality protection,<sup>15</sup> enacted the Federal Water Pollution Control Act Amendments (FWPCA).<sup>16</sup> The Act sets national goals to restore and maintain the integrity of the nation's waters.<sup>17</sup> The FWPCA gives the states, once they qualify, the primary responsibility and right to control water pollution, with extensive federal oversight by the Environmental Protection Agency (EPA).<sup>18</sup> Section 402 of the Act authorizes the National Pollution Discharge Elimination System (NPDES), a permit program, administered by the states, that prescribes limitations on water effluent discharged by any point source.<sup>19</sup> In order to meet these "effluent limitations"<sup>20</sup> treatment technology must be applied to water discharges containing pollutants.<sup>21</sup> Section 201 empow-

12. *Id.*

13. METHODS AND PRACTICES, *supra* note 1, at 3.

14. Hines, *Farmers, Feedlots and Federalism: The Impact of the 1972 Federal Water Pollution and Control Act Amendments on Agriculture*, 19 S.D. L. REV. 540, 545-46 (1974).

15. *Land Use Implications, supra* note 6, at 1049.

16. The Senate Report found that the national effort to control water pollution had been inadequate and that better standards, effective enforcement, and increased funding were necessary. 1 SENATE COMM. ON PUBLIC WORKS, 93D CONG., 1ST SESS., A LEGISLATIVE HISTORY OF THE WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972, at 1422-25 (Comm. Print 1973).

17. 33 U.S.C. § 1251(a) (Supp. V 1975). To meet these goals the Act envisions: (1) the attainment of water quality by 1983 sufficient to support fish habitat and swimming, *id.* § 1251(a)(2); (2) the prohibition of toxic discharges, *id.* § 1251(a)(3); and (3) the elimination of pollutant discharge by 1985. *Id.* § 1251(a)(1).

18. *Id.* § 1251(b). The FWPCA establishes uniform, national effluent standards that must be approved by EPA and applied by the states to all water pollution point sources. *Id.* § 1313(a), (b). Several enforcement and abatement programs are administered by the states. *Id.* § 1342. If a state fails to demonstrate adequate commitment to carry out these programs effectively, the EPA can impose its own regulation program in that state. *Id.* § 1319(a)(2).

19. *Id.* § 1342. The Act authorizes both the EPA and the states to bring enforcement actions against permit violators and dischargers without permits. *Id.* § 1319(a). Civil penalties may not exceed \$10,000 per day per violation, *id.* § 1319(d); and criminal penalties for the first conviction may not exceed \$25,000 per day per violation and/or imprisonment for more than one year. *Id.* § 1319(c)(1). For the second conviction the penalty may not exceed \$50,000 per day and/or two years imprisonment. *Id.*

20. Effluent limitations require each discharger to meet a uniform pollution abatement level regardless of the quality of the water receiving the discharge. *Land Use Implications, supra* note 6, at 1051 n.24. See note 79 *infra*.

21. By 1977 all publicly owned treatment works must meet effluent limitations based on "secondary treatment." 33 U.S.C. § 1311(b)(1)(B) (Supp. V 1975). Primary treatment involves removal of material that floats or will settle in sewage; secondary treatment involves the

ers the EPA to make grants to states and municipalities for the construction of modern waste treatment facilities.<sup>22</sup> Since the mainspring of the currently operational regulation efforts is the NPDES and because agricultural activity ordinarily will not be regarded as a point source requiring NPDES controls,<sup>23</sup> the FWPCA has not been applied to agricultural nonpoint pollution.

The FWPCA does, however, contain a provision, section 208<sup>24</sup> that is the only mechanism in the Act designed to control nonpoint source water pollution.<sup>25</sup> Section 208 authorizes a program of areawide waste treatment management planning to integrate the act's various pollution prevention efforts.<sup>26</sup> Although section 208 was included in the 1972 amendments and was termed "the most important aspect of a water pollution control strategy" by the Senate Committee on Public Works,<sup>27</sup> the program was not initially implemented by the EPA.<sup>28</sup> The EPA ignored the section while concentrating on the NPDES and construction grant programs.<sup>29</sup> It promulgated regulations that allowed the states to decide whether areawide waste treatment management planning should be implemented<sup>30</sup> and did not revise those regulations until November 1975.<sup>31</sup> The EPA's revisions were prompted by Congressional criticism<sup>32</sup> and by the decision in *Natural Resources Defense Council v. Train*.<sup>33</sup> In that case two environmental groups brought an action against the Administrator of the EPA to require the agency to implement section 208.<sup>34</sup> The court held that Congress intended to mandate implementation of the provision and not to leave this decision to the discretion of the states.<sup>35</sup> Since the revision of the EPA regulations,

---

employment of chemical technology and biological processes to purify waste water to a limited degree. See A. KNEESE, *MANAGING WATER QUALITY: ECONOMICS, TECHNOLOGY, INSTITUTIONS* 44-48 (1968). By 1977 all private point sources of discharge must conform to effluent limitations based on the "best practicable control technology currently available" (BPT). *Id.* § 1311(b)(1)(A). By 1983, all publicly owned treatment works must meet limitations based on the "best practicable waste treatment technology required by the construction grant program for treatment facilities." *Id.* § 1311(b)(2)(B). Private waste dischargers must satisfy limitations based on the "best available control technology economically achievable" (BAT). *Id.* § 1311(b)(2)(A).

22. *Id.* § 1281(g). These grants are to cover 75% of the cost of such construction. *Id.* § 1282(a). To support the NPDES and the grant programs, section 303(e) requires states to develop "continuing planning process[es]" that will coordinate effluent limitations with schedules of compliance, waste treatment works construction priorities, and waste treatment management plans. *Id.* § 1313(e)(3). A state that lacks an approved continuing planning process for water quality regulation cannot administer the NPDES permit program. *Id.* § 1313(e)(2).

23. Hines, *supra* note 14, at 543; see *GUIDELINES*, *supra* note 3, at 7-1.

24. 33 U.S.C. § 1288 (Supp. V 1975).

25. *Land Use Implications*, *supra* note 6, at 1056 n.50.

26. *Id.* at 1052; see text accompanying notes 103-06 *infra*.

27. *Land Use Implications*, *supra* note 6, at 1047.

28. *Id.* at 1048.

29. *Id.*

30. *Id.* at 1047-48.

31. *Id.* at 1048 n.11.

32. *Id.* at 1048 n.9.

33. *Id.* at 1048 & n.10.

34. *NRDC v. Train*, 396 F. Supp. 1386, 1387 (D.D.C. 1975).

35. *Id.* at 1392.

section 208 implementation has begun, although it is several years behind schedule.<sup>36</sup>

Interest in the implementation of section 208 of the FWPCA should increase for several reasons. First, a plan development process, from which an extensive regulatory program will emerge, is under way in every state.<sup>37</sup> The program is one of the most innovative and complex elements of the FWPCA and has great potential for water quality improvement.<sup>38</sup> Second, the problem of nonpoint source water pollution is growing. In Iowa, for example, the soil erosion losses during 1974 were more serious than in any of the preceding twenty-five years.<sup>39</sup> The Iowa Water Quality Report for 1975 indicates that while levels of pollutants originating from point sources have decreased, the levels associated with nonpoint sources have not.<sup>40</sup> Third, section 208 has extensive potential for land use control<sup>41</sup> and therefore is likely to generate considerable controversy during the planning and implementation of the regulatory program.<sup>42</sup> Traditionally, agricultural land users have been opposed to land use control designed to prevent soil erosion, a major type of nonpoint water pollution.<sup>43</sup> In fact, the controversy associated with land use planning may well have been the reason for the EPA's hesitancy to implement section 208.<sup>44</sup> Finally, if a state develops a plan pursuant to section 208 that contains control measures that the state presently lacks authority to enforce, it must pass new legislation granting such authority.<sup>45</sup>

Any regulatory plan developed pursuant to section 208 must contain some system of controls that would be applied to nonpoint sources of water pollution to achieve desired water quality improvement. To implement this system the types of regulatory methods and techniques to be used and the extent to which they should be applied must be determined. This determination process will formulate the substantive controls of the areawide waste treatment management plan. The purpose of this Note is to examine and

36. *Land Use Implications*, *supra* note 6, at 1049; IOWA DEP'T OF ENVIRONMENTAL QUALITY WATER QUALITY MANAGEMENT PLANNING PROCESS—APPROVED WORK PLAN FOR JUNE 1976-NOV. 1978 (1976) [hereinafter cited as APPROVED WORK PLAN].

37. Donley & Hall, *Section 208 and Section 303 Water Quality Planning and Management: Where Is It Now?*, 6 ENV'T'L L. REP. (ELI) 50,115, 50,115 (1976). In Iowa the development of the areawide waste treatment management plan began July 1, 1976 and is scheduled for completion by December 1, 1978. APPROVED WORK PLAN, *supra* note 36, title page. Interview with Ubbo Agena, Planning Engineer with the Dep't of Environmental Quality, Des Moines, Iowa (Jan. 4, 1977).

38. Donley & Hall, *Section 208 and Section 303 Water Quality Planning and Management: Where Is It Now?*, 6 ENV'T'L L. REP. (ELI) 50,115, 50,115 (1976).

39. WATER QUALITY REPORT, *supra* note 1, at I-7.

40. *Id.* at I-1, I-2.

41. 33 U.S.C. § 1288(b)(2)(F) (Supp. V 1975); *Land Use Implications*, *supra* note 6, at 1054-58; Federman, *The 1972 Water Pollution Control Act: Unforeseen Implications for Land Use Planning*, 8 URB. LAW. 140, 143 (1976).

42. Phillips, *Developments in Water Quality and Land Use Planning: Problems in the Application of the Federal Water Pollution Control Act Amendments of 1972*, 10 URB. L. ANN. 43, 46 (1975).

43. Hines, *supra* note 14, at 563.

44. *Land Use Implications*, *supra* note 6, at 1048 n.6.

45. See 40 C.F.R. § 131.11(n)(3)(iii) (1976).

evaluate alternative administrative structures and procedural devices that could be incorporated into the section 208 control system. The analysis will focus upon the process of formulating control methods and the degree of their application. The discussion will concentrate on agricultural nonpoint pollution in Iowa, but it should be relevant for many states with agricultural lands that are presently developing section 208 plans. Technical background material relating to nonpoint source water pollution, substantive control techniques, existing environmental regulatory agencies, and administrative procedural requirements within Iowa will be discussed first to construct an analytical framework for evaluating implementation alternatives for section 208 plans. The general provisions of section 208 will then be presented. Next, five administrative or procedural issues will be examined and evaluated in light of technical conditions, public reaction, and judicial response. These five issues include the selection of the proper regulatory approach; the choice between rigid, statutory or flexible, discretionary controls; the alternatives of voluntary or mandatory controls; the degree of public participation involved in the control determination process; and the use of local or state-wide agencies to administer the section 208 plan. Finally, based on this analysis, it will be suggested that the Iowa plan should use flexible, discretionary controls that are applied by a system of mandatory requirements, supplemented with extensive public participation in agency decisionmaking, and managed by intermediate-level, river basin authorities.

#### I. NONPOINT SOURCE WATER POLLUTION CHARACTERISTICS, CONTROL METHODS, AND REGULATORY AGENCIES

Agricultural nonpoint source pollution, the major Iowa water quality problem addressed by section 208, is caused by soil erosion and by chemical fertilizer and pesticide runoff.<sup>46</sup> Water sediment and siltation resulting from soil erosion are the largest causes of agricultural nonpoint pollution.<sup>47</sup>

---

46. See Hines & Schantz, *Improving Water Quality Regulation In Iowa*, 57 IOWA L. REV. 231, 239 (1971). Animal waste, a major type of agricultural pollutant, is generally treated as a point source type of water pollution, see generally Hines, *supra* note 14, at 545-61, and is not discussed in this Note.

47. U.S. ENVIRONMENTAL PROTECTION AGENCY, *METHODS FOR IDENTIFYING AND EVALUATING THE NATURE AND EXTENT OF NON-POINT SOURCES OF POLLUTANTS* 35-36 (1973). Cropland is the major source of erosion sediment in the United States, and is credited with 50% of the sediment delivered to lakes and streams, *id.* at 7, or about one billion tons per year. *Id.* at 39. Tillage practices, which loosen and expose soil to the action of runoff water, are responsible for 95-99% of the erosion from agricultural cropland. *Id.* at 5-7.

Erosion from cropland varies widely depending upon a number of factors including rainfall volume and intensity, type of crop, soil characteristics, topography, tillage methods, and conservation practices. *Id.* at 7. Erosion on sloping land increases as volume and intensity of rainfall or snowmelt runoff increases. Distribution of precipitation during the year is also a major determinant of erosion because rainfall of a given volume and intensity occurring during periods when ground cover is lacking is more damaging than when the ground is protected by vegetation. Erosion increases as the lengths and gradients of slopes causing erosion increase. In addition, the length and gradient of slopes will determine if soil will completely move off the field or merely be deposited at a point further down slope. Furthermore, soils vary in their susceptibility to erosion, the most important determinants being

Soil erosion can have the following damaging effects: it can decrease the productive capacity of agricultural land,<sup>48</sup> obstruct drainage, fill reservoirs,<sup>49</sup> and carry chemical fertilizer and pesticides<sup>50</sup> into rivers and streams.<sup>51</sup> The amount of soil erosion and fertilizer and pesticide runoff depends on a number of variables. Rainfall volume and intensity, type of crop, soil conditions, topography, and conservation practices may all influence the quantity of runoff or erosion.<sup>52</sup> In addition, the pesticide level in the water may be affected by application practices, solubility, and the potency and persistence of the pesticide.<sup>53</sup>

It should be noted that many of the factors that determine the levels of soil erosion and water runoff, and thus the level of agricultural nonpoint water pollution, are natural, physical conditions that can vary considerably between nonpoint source locations. Rainfall volume and intensity vary widely over time and between separate areas.<sup>54</sup> Topography and soil conditions vary considerably across different parts of Iowa.<sup>55</sup> Stream flow rates and volumes also differ between locations and over time.<sup>56</sup> Thus, individual source locations with distinct physical conditions would be expected to experience varying levels of soil erosion and water runoff, resulting in various degrees of nonpoint source agricultural water pollution.

---

texture, organic matter content, soil structure, and soil permeability. The extent of plant growth cover depends on the species of vegetation, their quality, and the time of year. *See METHODS AND PRACTICES, supra* note 1, at 7. Excess sediment in water impairs recreational uses, interferes with aquatic wildlife, and increases the expense of treating public water supplies. Hines, *Agriculture: The Unseen Foe in the War on Pollution*, 55 CORNELL L. REV. 740, 754 (1970). Siltation clouds the water, reduces photosynthesis in aquatic plants, and decreases the conversion of carbon dioxide in the water into oxygen. This lack of oxygen kills microorganisms that break down organic wastes. As a result, sewage in the water is not decomposed as it normally would be, and the water becomes unhealthy, unfit for recreation, and costly to treat for domestic use. Cardi, *Strip Mining and the 1971 West Virginia Surface Mining and Reclamation Act*, 75 W. VA. L. REV. 319, 327 (1973).

48. *METHODS AND PRACTICES, supra* note 1, at 3. This reduced productive capacity results from "the loss of . . . topsoil; changes in the soil structure, . . . [reducing] aeration in filtration, and drainage; exposure of unproductive soil materials; [and] the intrusion of undesirable species of plants." *Id.*

49. *Id.*

50. Fertilizers and pesticides have their own harmful effects on the environment. Nitrogen and phosphorus, the chief nutrients in agricultural fertilizer, stimulate the growth of algae in surface waters. *Id.* at 747. Algae, in turn, can interfere with recreational uses of water, reduce fish populations, and destroy helpful microorganisms by competing for dissolved oxygen in the water, clog intake filters, and create undesirable tastes and odors in municipal water supplies. Hines, *supra* note 47, at 747-48. Small amounts of pesticides can make certain types of fish unsafe to eat, *see id.* at 750 & n.60, thereby endangering human health. There are three types of pesticides used on agricultural crops: insecticides, herbicides, and fungicides. *METHODS AND PRACTICES, supra* note 1, at 45.

51. *See Hines, supra* note 7, at 754.

52. *METHODS AND PRACTICES, supra* note 1, at 7, 39.

53. *Id.* at 46-47.

54. *Id.* at 7.

55. Interview with Dan Lindquist, Iowa Dep't of Soil Conservation water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

56. *See Hines & Schantz, Improving Water Quality Regulation in Iowa*, 57 IOWA L. REV. 231, 237-238 (1971); *WATER QUALITY REPORT, supra* note 1, at I-2.

There are several basic approaches to controlling water pollution. The control efforts presently employed under the National Permit and Discharge Elimination System (NPDES) of the FWPCA require chemical and/or physical treatment of pollutant wastes before discharge.<sup>57</sup> This approach is generally used only for point sources of pollution<sup>58</sup> and is considered inapplicable to nonpoint sources because in the latter situation there are no discrete, localized points at which treatment technology can be applied.<sup>59</sup> The control of nonpoint source water pollution is generally best achieved by applying land management techniques to the nonpoint sources, and thus preventing sediment and chemical wastes from reaching water resources and causing water quality damage.<sup>60</sup>

These management techniques fall into two main categories: land use prohibition and regulation of permitted uses. Land use prohibition involves the legal control of the land uses permitted at a particular source location<sup>61</sup> by restricting types of agricultural activity permitted on land adjacent to sensitive waters.<sup>62</sup> In addition, certain lands can be zoned as unsuitable for row crop tillage to prevent soil erosion and the resulting sediment and chemical pollution. This latter type of restriction may be necessary for severe erosion problems and would require conversion of the crop land to pasture or forestry uses.<sup>63</sup>

The second category of land management technique applicable to nonpoint pollution is the regulation of land use activities permitted at a source location<sup>64</sup> to reduce the amount of pollutant waste created.<sup>65</sup> For the control of soil erosion, and thus sediment, fertilizer, and pesticide pollution, a number of methods and practices are available to fix the soil to the land. These involve farming techniques that loosen the soil less and reduce water runoff volumes and rates.<sup>66</sup> In addition, the construction of structures that prevent erosion can greatly reduce soil losses and water runoff.<sup>67</sup>

---

57. See 33 U.S.C. §§ 1311(b)(1)(B), (2)(A) (Supp. V 1975); note 21 *supra*.

58. *Id.*

59. Approved Work Plan, *supra* note 36, at 61.

60. *Id.*

61. Federman, *The 1972 Water Pollution Control Act: Unforeseen Implications for Land Use Planning*, 8 URB. LAW. 140, 143 (1976); LAND USE IMPLICATIONS, *supra* note 6, at 1056-57.

62. *Id.* at 1057.

63. METHODS AND PRACTICES, *supra* note 1, at 20.

64. Federman, *The 1972 Water Pollution Control Act: Unforeseen Implications for Land Use Planning*; 8 URB. LAW. 140, 143 (1976).

65. *Land Use Implications*, *supra* note 6, at 1056.

66. Alternative tillage practices that loosen soil less and increase its water absorption capacity have been developed. METHODS AND PRACTICES, *supra* note 1, at 8-10. Strip cropping, a planting technique where strips of grass crops are alternated with strips of row crops, can reduce runoff velocity and absorb water. *Id.* at 15. Planting row crops and performing tillage operations on a level contour, perpendicular to the slope of the land, is an effective means of impeding runoff and reducing erosion. *Id.* Planting grass in waterways is another basic conservation practice. *Id.* at 18. Crop rotation, planting different crops in a sequential pattern over time to alternate soil conserving cover with soil depleting tillage, will reduce erosion. *Id.*

67. The construction of terraces, ridges of earth built across the face of the slope, reduces the volume and velocity of water runoff. *Id.* at 10. Earthen diversions can prevent water runoff from entering critical erosion areas such as croplands. *Id.* at 15. The installation of buried pipe under natural waterways can prevent erosion action on the surface. *Id.* at 18.



The costs of constructing such physical, erosion control structures, however, are very high.<sup>68</sup> Chemical fertilizer and pesticide pollution can also be reduced by management techniques other than soil erosion and water runoff prevention efforts. Fertilizer use can be controlled by varying application methods<sup>69</sup> and timing and by considering proximity to water courses, topography, and soil conditions.<sup>70</sup> Pesticide runoff can also be reduced by regulation and by the substitution of non-chemical methods of pest control in place of pesticide use.<sup>71</sup> Many of these land management techniques, both land use prohibition and regulation of permitted uses, may be incorporated into the section 208 plan and enforced by regulatory agencies.

There are two state regulatory agencies involved with the problems addressed by section 208, the Department of Environmental Quality (DEQ) and the Department of Soil Conservation (DSC). Water quality problems are the concern of the Iowa Department of Environmental Quality.<sup>72</sup> The DEQ administers the state's pollution control programs in the areas of air quality, chemical use, solid waste disposal, and water quality.<sup>73</sup> Each of these program areas is assigned to a separate commission within the Department.<sup>74</sup> The Water Quality Commission has centralized, statewide, policymaking power for handling water pollution problems.<sup>75</sup> The Commission is authorized to develop comprehensive abatement plans and programs,<sup>76</sup> establish water quality standards and effluent standards for the state,<sup>77</sup> administer a pollution discharger permit system,<sup>78</sup> cooperate with other state water pollution control agencies or the federal EPA in establishing water quality standards,<sup>79</sup> and enforce water pollution regula-

---

Spillway structures and culverts can reduce the grade in water courses, reduce flow velocity, and can trap sediment. *Id.* at 20.

68. The Soil Conservation Service has estimated a cost of \$1.66 billion for more than thirteen million acres of Iowa farmland that need erosion controls, an average of \$128 per controlled acre. WATER QUALITY REPORT, *supra* note 1, at 1-7. The Iowa Department of Soil Conservation has placed the cost in 1976 of constructing earthen terraces at \$1.11 per foot. Des Moines Sunday Register, Feb. 17, 1977, at 3F, col. 6.

69. METHODS AND PRACTICES, *supra* note 1, at 41-42.

70. Hines & Schantz, *Improving Water Quality Regulation in Iowa*, 57 IOWA L. REV. 231, 364 (1971).

71. METHODS AND PRACTICES, *supra* note 1, at 49.

72. IOWA CODE § 455B.4 (1975).

73. *Id.* § 455B.2, .4.

74. *Id.* § 455B.4.

75. *Id.* § 455B.4, .31.

76. *Id.* § 455B.32(1).

77. *Id.* § 455B.32(2); *see* note 79 *infra*.

78. *See* IOWA CODE § 455B.32(3) (1975).

79. *See id.* § 455B.32(6). Water quality standards define the states' water quality objectives and serve as a basis for evaluating and modifying control measures for nonpoint sources. GUIDELINES, *supra* note 3, at 5-1. Regulatory programs—planning, permits, surveillance, and enforcement—are intended to achieve and maintain water quality standards. APPROVED WORK PLAN, *supra* note 3, at 5-1.

There are two major types of water quality systems. One is the ambient standard system, which prescribes pollutant concentration levels in water that cannot be legally exceeded on the average during a specified time period. Ambient standards are based upon designated uses of water including agricultural and industrial uses. Hines, *supra* note 14, at 541. The system focuses on receiving water quality as a whole, rather than on individual pollution sources, and

tion throughout the state.<sup>80</sup>

The Iowa Department of Soil Conservation is responsible for regulatory programs intended to prevent soil erosion in the state.<sup>81</sup> The Department's main purpose is to assist and coordinate the soil erosion prevention efforts of the local Soil Conservation Districts<sup>82</sup> and to govern the six regional Conservancy Districts within the state.<sup>83</sup> The Soil Conservation Districts are local level authorities governed by five commissioners elected by and from land owners in the district.<sup>84</sup> These district commissioners are authorized to conduct research, develop erosion prevention plans, further community awareness of erosion problems and solutions,<sup>85</sup> and establish

---

regulates sources only as necessary to preserve general water quality at levels adequate to support designated beneficial uses. *Id.*

The second major water quality standards system is the effluent limitation approach under which regulatory controls are imposed directly on the discharge sources. Effluent limitations are based primarily on the technological and economic feasibility of reducing and eliminating pollutant discharges into the water. While minimum ambient standards are still established, the focus of effluent limitations is on the pollution sources themselves rather than on local water quality needs. *Id.* at 541-42. All dischargers are required to exercise their best efforts to reduce or eliminate waste output, within the bounds of economic and technological feasibility. Hines, *A Decade of Nondegradation Policy in Congress and the Courts: The Erratic Pursuit of Clear Air and Clean Water*, 62 IOWA L. REV. 643, 644 (1977). A corollary of the effluent limitation system is the nondegradation doctrine. This policy preserves existing high quality waters and prevents their deterioration to lower minimum quality standards applied to lower quality waters. The nondegradation policy does not make existing resource quality an absolute minimum, but rather, the existing quality is treated as a baseline that cannot be transgressed to a significant degree unless the social value of the deterioration causing activity exceeds the value associated with the current high water quality. *Id.* at 645. Usually such a policy has its impact in areas of little or no economic development where existing water quality is above the minimum ambient standards. *Id.* The policy has been criticized as restrictive of economic growth in such areas. Note, *Nondegradation of Water Quality: The Need for Effective Action*, 50 NOTRE DAME LAW. 890, 892 (1975).

Under present FWPCA programs the ambient standards approach has been abandoned in favor of effluent limitations as the system for achieving the Act's "no discharge" goal. Hines, *supra* note 14, at 541; Note, *The Federal Water Pollution Control Act Amendments of 1972*, 1973 WIS. L. REV. 893, 903-04. The federal pollution control programs have been publicly committed to the nondegradation doctrine, Hines, *A Decade of Nondegradation Policy in Congress and the Courts: The Erratic Pursuit of Clear Air and Clean Water*, 62 IOWA L. REV. 643, 645 (1977); but in the past the EPA has not promulgated standards that mandate its application in the FWPCA programs. Note, *Nondegradation of Water Quality: The Need for Effective Action*, 50 NOTRE DAME LAW. 890, 896-900 (1975). Most states retain discretion to decide whether a new source demonstrates the necessary economic and social value to justify degradation. *Id.*

80. IOWA CODE § 466B.33(3) (1975). Whenever the Commission discovers a violation of its rules or standards, it must first attempt to resolve the problem by informal negotiation with the violator. *Id.* § 455B.34. If this is not successful, then a public hearing must be held and an agency order directing corrective action will be issued. *Id.* § 455B.37(3). The Commission may seek court orders enjoining pollution-causing activity, and civil or criminal sanctions are applicable to violations of permits and standards. *Id.* § 455B.49. The civil penalty is a maximum fine of \$5,000 per day of violation. *Id.* § 455B.49(1). Criminal penalties include a maximum fine of \$10,000 per day for willful or negligent violation of discharge permit requirements. *Id.* § 455B.49(2); and a maximum fine of \$10,000 and/or six months in jail for knowingly giving false information or tampering with EPA monitoring efforts. *Id.* § 455B.49(3).

81. *Id.* § 467A.2, .4(1).

82. *Id.* § 467A.4(4).

83. *Id.* §§ 467A.4(4), 467D.4.

84. *Id.* § 467A.5(3), (6).

85. *Id.* § 467A.7.

soil loss limit regulations.<sup>86</sup> The local commissioners may implement such regulations by requiring land owners to employ soil and water conservation practices<sup>87</sup> if state appropriated or federal grant cost sharing funds are made available to the land owner for at least seventy-five percent of the cost.<sup>88</sup> The Conservancy Districts are regional, intermediate level authorities established in each of six major river basins in Iowa.<sup>89</sup> They are charged with protecting soil and water resources within their basin areas,<sup>90</sup> and are governed by the State Soil Conservation Committee,<sup>91</sup> the policy determining body of the DSC.<sup>92</sup> Within each Conservancy District the Committee can make and enforce rules necessary for soil and water protection<sup>93</sup> but cannot deal with water resource problems under jurisdiction of the DEQ.<sup>94</sup> These Districts serve as a coordinating body for the various local authorities within their areas<sup>95</sup> and are authorized to plan and construct physical structures and improvements to protect soil and water resources.<sup>96</sup> They can also sue for abatement of soil erosion nuisances that damage private property.<sup>97</sup> Both the DEQ and DSC are involved in the development of the section 208 plan and both are likely to continue as part of the administrative structure.

Any section 208 regulatory program administered by a state agency in Iowa is likely to be subject to the provisions of the Iowa Administrative Procedure Act (IAPA).<sup>98</sup> The IAPA requires that administrative agencies follow certain procedures in all rulemaking<sup>99</sup> and contested case proceedings.<sup>100</sup> The objectives of the IAPA requirements are to increase the accountability and responsiveness of administrative agencies and to increase public participation in the formulation of administrative rules.<sup>101</sup>

---

86. *Id.* § 467A.44.

87. *Id.* Such practices include agricultural tillage methods, planting vegetation cover, and constructing erosion prevention structures, *id.* § 467A.42(2).

88. *Id.* § 467A.48.

89. *Id.* § 467D.3; WATER QUALITY REPORT, *supra* note 1, at VII-20; Interview with Dan Lindquist, Iowa Dep't of Soil Conservation water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

90. IOWA CODE § 467D.6(1) (1975).

91. *Id.* § 467D.4.

92. *Id.* § 467A.4(1).

93. *Id.* § 467D.6(1).

94. *Id.*

95. *Id.*

96. *Id.* § 467D.16-.19.

97. *Id.* §§ 467D.6(10), .23.

98. *Id.* ch. 17A (1975). The agency's enabling statute would have to expressly exempt the program from the IAPA before such provisions would not be controlling. *Id.* § 17A.1(2).

99. *Id.* Rules are defined as any agency statement of general applicability that implements, interprets, or prescribes law or policy. *Id.* § 17A.2(7); see text accompanying notes 345-56 *infra*.

100. IOWA CODE § 17A.1(2). In a contested case, involving the determination of the legal rights of a particular person, *id.* § 17A.2(2), all parties must be given notice and a hearing concerning the matter. *Id.* § 17A.12(1). Parties may respond, present evidence and arguments, and be represented by counsel. *Id.* § 17A.12(4). Findings of fact in these proceedings must be based solely on the evidence in the record or on matters officially noticed in the record. *Id.* § 17A.12(8).

101. *Id.* § 17A.1(2); see text accompanying notes 248-58 *infra*.

Since agency rulemaking and adjudication of contested cases would be the major means of implementing a regulatory program to abate nonpoint water pollution, these requirements will have a significant impact on the administrative structure and processes of the section 208 plan currently being developed in Iowa.

## II. AREAWIDE WASTE TREATMENT MANAGEMENT UNDER SECTION 208

### A. Overview of Section 208 Impact

Section 208 of the FWPCA is a novel approach to the national problem of water pollution because it emphasizes land use and growth management techniques to prevent pollution from being created,<sup>102</sup> rather than relying on technological treatment of municipal and industrial waste. Section 208 authorizes three major programs. Two of these programs, control of urban growth<sup>103</sup> and waste treatment facility construction,<sup>104</sup> are beyond the scope of this Note. Nevertheless, the third major program of section 208, which includes the identification and control of such nonpoint sources of pollution as runoff from agricultural, urban, construction, and mining areas,<sup>105</sup> will have a major impact on Iowa because of the state's large agricultural water quality problems. This program will be the focus of this Note.

For section 208 to become operative in Iowa the state must develop an Areawide Waste Treatment Management Plan that considers overall state and local policies including land and other resource management programs.<sup>106</sup>

### B. Development of the Section 208 Plan

To initiate the section 208 plan development process the governor of a state must identify each area within the state that has substantial water quality problems<sup>107</sup> and then designate it as a waste treatment planning area.<sup>108</sup> For example, the entire state of Iowa, except for the metropolitan Des Moines and Lake Rathbun areas, has been identified and designated as one planning area.<sup>109</sup> In every state the governor must also name a single organization to develop an effective waste treatment management plan for each area.<sup>110</sup> This organization serves as a planning agency and must have

102. *Land Use Implications*, *supra* note 6, at 1047, 1056.

103. *Id.* at 1057; 33 U.S.C. § 1288(b)(2)(C)(ii) (Supp. V 1975).

104. 33 U.S.C. § 1288(b)(2)(A) (Supp. V 1975).

105. *Id.* § 1288(b)(2)(F)-(K) (Supp. V 1975).

106. *See* 40 C.F.R. § 130.10(a)(3)-(4) (1976).

107. 33 U.S.C. § 1288(a)(2) (Supp. V 1975). A substantial water quality problem exists when water quality has been or may be degraded to the extent that existing or desired water uses are impaired or precluded. 40 C.F.R. § 130.13(a) (1976). These problems may be the result of urban or industrial concentrations or other factors. 33 U.S.C. § 1288(a)(2) (Supp. V 1975).

108. 33 U.S.C. § 1288(a)(2) (Supp. V 1975).

109. Interview with Ubbo Agena, Planning Engineer with the Iowa Dep't of Environmental Quality, in Des Moines, Iowa (Jan. 4, 1977) (on file with the *Iowa Law Review*).

110. 33 U.S.C. § 1288(a)(2) (Supp. V 1975).

waste treatment planning jurisdiction for the entire designated area.<sup>111</sup> In Iowa this agency is the Department of Environmental Quality.<sup>112</sup> Since the planning agency may delegate portions of the planning effort to other state bodies,<sup>113</sup> DEQ has delegated the responsibility for developing the control system for implementing the section 208 plan to the Department of Soil Conservation.<sup>114</sup>

The success of the section 208 water quality plan depends upon public acceptance and support.<sup>115</sup> Therefore, EPA regulations issued pursuant to section 208 require public participation during the entire plan development process<sup>116</sup> to keep interested persons informed and to solicit citizen input at all stages.<sup>117</sup> For public input to be most effective, the public should participate in the development of nonpoint pollution control techniques and in the review and revision of water quality standards.<sup>118</sup> Public opinion should be sought on a number of issues: identification of water quality problems, the importance of water quality in relation to other community goals, land use regulation as a means of achieving water quality, and alternative control methods.<sup>119</sup> Within Iowa, extensive citizen participation groups have been established at several administrative levels.<sup>120</sup> These groups are advisory only and final authority for section 208 planning remains with the DEQ and DSC.<sup>121</sup> In addition to utilizing these advisory bodies as a source of input, the planning agencies can conduct open

111. 40 C.F.R. § 130.13(c)(2) (1976). This planning agency is unlike the managing agency discussed later in this section, *see* text accompanying notes 139-44 *infra*, since the planning agency will develop the section 208 plan but will not administer it. Of course the same agency could be designated for planning and for managing the plan.

112. Des Moines Sunday Register, Oct. 17, 1976, at 2F, col. 1; interview with Ubbo Agena, Planning Engineer with the Iowa Dep't of Environmental Quality, in Des Moines, Iowa (Jan. 4, 1977) (on file with the *Iowa Law Review*).

113. 40 C.F.R. § 130.14(a) (1976).

114. APPROVED WORK PLAN, *supra* note 36, at 87.

115. GUIDELINES, *supra* note 3, at 4-1, *see* 40 C.F.R. § 131.20(a)(1) (1976).

116. 40 C.F.R. § 130.10(a)(1) (1976); GUIDELINES, *supra* note 3, at 4-1.

117. *See* Donley & Hall, *Section 208 and Section 303 Water Quality Planning and Management: Where Is It Now?*, 6 ENV'T'L. L. REP. (ELI) 50,115, 50,120 (1976).

118. *See id.*

119. GUIDELINES, *supra* note 3, at 4-3.

120. APPROVED WORK PLAN, *supra* note 36, at 1-3. Local County Resource Coordinating Committees (CRCC) organized in each county represent soil conservationists, manufacturers, cities, land owners, and the general public. From each CRCC one person serves on a Conservancy District Advisory Committee (CDAC) corresponding to the Six Conservancy Districts established under the DSC. Each CDAC has ten representatives serving on a Basin Advisory Committee (BAC) which also consists of persons selected from planning organizations located in the respective river basin. From each CDAC two members serve on the Statewide Policy Advisory Committee (SPAC) upon which also serve representatives of planning organizations and the public at large. *Id.* at 1.

The SPAC advises the DEQ on broad policy matters relating to section 208 planning issues. The BACs disseminate planning information and proposals to the organizations represented by the BAC membership and convey the responses to the SPAC for consideration. The DSC utilizes the CRCCs and CDACs to obtain input and reactions to various aspects of nonpoint source control planning. *Id.*

121. Interview with Ubbo Agena, Planning Engineer with the Iowa Dep't of Environmental Quality, in Des Moines, Iowa (Jan. 4, 1977) (on file with the *Iowa Law Review*).

hearings in order to receive general public input for planning decisions.<sup>122</sup>

As part of the section 208 planning process, EPA regulations also require that the state planning agency develop and review water quality standards.<sup>123</sup> These standards must protect public health for all waters<sup>124</sup> and establish appropriate water uses by taking into consideration the use and value of water for public water supplies, propagation of aquatic wildlife, recreation, agriculture, and industry.<sup>125</sup> Standards should also include specific water quality criteria<sup>126</sup> so that nonpoint source control requirements can be developed or modified based on the criteria.<sup>127</sup> In addition, the state is required to include a statewide antidegradation policy in the water quality standards.<sup>128</sup> This policy, at a minimum, must in all cases maintain and protect existing instream water uses and prohibit any further water quality degradation that would interfere with existing water use.<sup>129</sup>

In Iowa the DEQ has begun the review and revision of water quality standards, including designation of beneficial uses of all surface waters, specification of water quality criteria, and formulation of an antidegradation policy.<sup>130</sup> To determine the magnitude of point and nonpoint pollution in the state's waters and its effect on the beneficial uses of such waters,

122. See IOWA CODE §§ 17A.4(1)(b), 455B.5(3)-(4) (1975); APPROVED WORK PLAN, *supra* note 36, at 1.

123. 40 C.F.R. § 130.10(b)(1) (1976).

124. *Id.* § 130.17(b)(1).

125. *Id.* § 130.17(b)(2). The state may establish less restrictive uses than those designated in the standards only if it can demonstrate that the existing designated use is unattainable due to natural or human induced conditions so that a substantial and widespread adverse economic impact would result from such attainment. *Id.* § 130.17(c)(3).

126. *Id.* § 130.17(b)(3). Specific numerical criteria generally must be adopted for those parameters which represent serious existing or potential water quality problems, especially for toxic substances. GUIDELINES, *supra* note 3, at 5-11. Narrative criteria should be employed where other values cannot be established. According to EPA guidelines, the narrative criteria should require all waters to be free of substances attributable to human-caused nonpoint sources in concentrations that

1. Settle to form objectionable deposits;
2. Float as debris or scum oil or other matter to form nuisances;
3. Produce objectionable color, odor, taste, or turbidity;
4. Injure, are toxic to or produce adverse physiological or behavior responses in humans, animals and plants; or
5. Produce undesirable aquatic plant life or result in the dominance of nuisance species.

*Id.* at 5-12.

127. See GUIDELINES, *supra* note 3, at 5-9.

128. 40 C.F.R. § 130.17(e) (1976).

129. *Id.* § 130.17(e)(1)-(2). Waste assimilation and transport are not recognized as beneficial uses. Existing high quality waters must be maintained at their high quality unless the state decides to allow limited degradation where economically or socially justified. GUIDELINES, *supra* note 3, at 5-13. If limited degradation is permitted, it cannot result in violations of water quality criteria that describe base levels necessary to sustain recreational use and protect fish, shellfish, and aquatic wildlife. 40 C.F.R. § 130.17(e)(2) (1976). In all cases, high water quality that constitutes an outstanding national resource must be maintained and protected. *Id.* This nondegradation policy differs from nondegradation policies in other FWPCA programs in that it provides mandatory application of the nondegradation doctrine and narrows the state's discretionary ability to suspend the doctrine's requirements. See Donley & Hall, *Section 208 and Section 303 Water Quality Planning and Management: Where Is it Now?*, 6 ENV'T L. REP. (ELI) 50,115, 50,119 (1976).

130. APPROVED WORK PLAN, *supra* note 36, at 22-23.

the DEQ is currently conducting an assessment of the duration, frequency, and impact<sup>131</sup> of nonpoint source water pollution problems in Iowa.<sup>132</sup> The results of this assessment will be considered in developing specific criteria used to establish water quality priorities for point and nonpoint pollution control implementation.<sup>133</sup>

Section 208 requires that the state planning agency develop regulatory procedures and methods, including land use requirements, to control nonpoint source water pollution.<sup>134</sup> EPA regulations further require that the section 208 plan develop "Best Management Practices" (BMPs) for nonpoint pollution control that recognize technological, economic, and institutional considerations.<sup>135</sup> In Iowa, the Department of Soil Conservation is developing the BMP requirements<sup>136</sup> by utilizing citizen participation in the development process to formulate a BMP control system that satisfies cost, public opinion, technical feasibility,<sup>137</sup> and water quality constraints.<sup>138</sup>

Upon completion of the section 208 planning process, a state's governor must designate a managing agency to implement the area-wide waste treatment management plan,<sup>139</sup> a function distinct from initial planning. This management agency must be authorized to carry out the regulatory programs of the plan,<sup>140</sup> operate waste treatment facilities,<sup>141</sup> and manage revenues and expenditures related to the plan's implementation.<sup>142</sup> The governor's choice must be approved by the EPA<sup>143</sup> and this approval can subsequently be withdrawn if the designated management agency fails to implement any provision of the section 208 plan.<sup>144</sup> Upon completion, the initial plan must also undergo several stages of review and approval. In Iowa the DEQ must submit the plan it develops to the governor for review<sup>145</sup> and certification.<sup>146</sup> The governor must certify that the state has

---

131. *Id.* at 50, 53.

132. *Id.*

133. *Id.* at 45.

134. 33 U.S.C. § 1288(b)(2)(F) (Supp. V 1975). Section 208 mandates the formulation of an urban growth management program. *See id.* § 1288(b)(2)(C)(ii). This program will be incorporated into the final statewide water quality management plan presently being developed for Iowa by the DEQ and will be applied through a system of construction and operating permits for new facilities. APPROVED WORK PLAN, *supra* note 36, at 149-50. The section 208 plan must also address the need for integrating and coordinating municipal waste treatment operations. 33 U.S.C. § 1288(b)(2)(A), (B) (Supp. V 1975). The DEQ is presently conducting research into the feasibility of regionalized operation and maintenance of sewage treatment facilities. APPROVED WORK PLAN, *supra* note 36, at 122.

135. 40 C.F.R. § 131.11(j)(1), (3)(i) (1976).

136. *Id.* § 130.2(q); *see* text accompanying notes 57-71 *supra*.

137. APPROVED WORK PLAN, *supra* note 36, at 87.

138. *Id.* at 86; interview with Dan Lindquist, Iowa Dep't of Soil Conservation water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

139. 33 U.S.C. § 1288(c)(1) (Supp. V 1975).

140. *Id.* § 1288(c)(2)(A).

141. *Id.* § 1288(c)(2)(B)-(C).

142. *Id.* § 1288(c)(2)(D)-(F).

143. *Id.* § 1288(c)(2).

144. 40 C.F.R. § 130.15(e) (1976).

145. *Id.* § 131.20(b)(1).

146. *Id.* § 131.20(e).

reviewed and adopted the plan as the state's official water quality management program<sup>147</sup> only upon a determination that the plan conforms with the approved planning process and is consistent with the water quality needs of the planning area; and, contains sufficient existing or proposed authority to protect the environment. The plan is then submitted to the EPA.<sup>148</sup> If the EPA determines that the plan conforms to the requirements of the FWPCA and regulations promulgated pursuant to that Act, and is consistent with contiguous water quality management plans, it will approve the proposed plan.<sup>149</sup> If the plan fails to meet any of these conditions, the EPA may disapprove or conditionally approve the plan and must notify the state that corrections will be needed for full approval.<sup>150</sup> Since the federal EPA has neither the power nor the authority to impose land use controls or delegate such power to state management agencies,<sup>151</sup> state legislatures must review the proposed section 208 plan and enact enabling legislation authorizing new regulatory methods and procedures. Because of the politically controversial land use control aspects of section 208, some states may resist preparing or authorizing plans that satisfy the federal requirements or may simply fail to fully implement such plans.<sup>152</sup> The EPA can deal with state resistance in one of the two ways: It may reject a state plan that fails to meet the statutory requirements and then halt construction grant funds for municipal treatment facilities within the state, pending completion of an adequate plan;<sup>153</sup> or, if a plan has already been approved, EPA can withdraw that approval and withhold grant funding if the state management agency fails to fully enforce the plan.<sup>154</sup> In addition to EPA sanctions the FWPCA authorizes citizen suits to require proper EPA enforcement of the Act.<sup>155</sup> If the EPA approved an inadequate section 208 plan or failed to suspend construction grants, a citizen could bring suit against the EPA to compel proper state preparation or implementation of the areawide waste management treatment plan.<sup>156</sup>

### III. ALTERNATIVE ADMINISTRATIVE STRUCTURES FOR IMPLEMENTING THE SECTION 208 PLAN

#### A. Basic Regulatory Approaches

In developing a system of environmental regulation capable of applying Best Management Practice (BMP) requirements to agricultural lands, three major implementation approaches might be considered: money sub-

---

147. *Id.* § 131.20(f).

148. *Id.* § 131.20(i).

149. *Id.* § 131.21(a).

150. *Id.* § 131.21(b).

151. *Id.* § 131.11(n)(2); Federgerman, *The 1972 Water Pollution Control Act: Unforeseen Implications for Land Use Planning*, 8 URB. LAW. 140, 150 & n.38 (1976); *Land Use Implications*, *supra* note 6, at 1061-62.

152. *Land Use Implications*, *supra* note 6, at 1075 & n.148.

153. 40 C.F.R. § 130.31(c) (1976).

154. *Id.* § 130.15(e).

155. 33 U.S.C. § 1365 (Supp. V 1975).

156. *Land Use Implications*, *supra* note 6, at 1077-78.



sidies, effluent fees, and direct regulation. Under the first approach, money subsidies in the form of a cash payment or a tax benefit<sup>157</sup> could be granted to agricultural land users for voluntary reductions of the quantity of pollutants discharged or for application of controls designed to achieve such reductions.<sup>158</sup> However, the subsidy approach has several major drawbacks. It cannot be effective if polluters fail to respond to the program and do not voluntarily adopt pollution control practices.<sup>159</sup> Furthermore, since pollution controls are paid for out of public funds, inefficient waste abatement may result because the polluter has no personal incentive to reduce waste discharge in the least-cost manner.<sup>160</sup> The subsidy approach has also been characterized as inequitable<sup>161</sup> and inefficient because the persons causing pollution damage do not pay the costs of preventing it.

A more efficient approach to environmental regulation is to charge polluters with effluent fees based upon the quantity of waste released by pollution creating activities.<sup>162</sup> If the effluent fees exceed the cost of prevention efforts, a polluter will have a strong incentive to reduce the amount of waste output by applying BMPs. Waste discharge will be decreased to the level at which the cost to the polluter of further reduction efforts exceeds the cost of effluent fees avoided by such reduction. Under this approach the polluter would bear the costs directly and select the means of control. Regulation through effluent fees has several advantages over the other two implementation approaches. Pollution abatement decisions are decentralized so that more site specific and economical means of control can be chosen than may be possible under a centralized system of direct regulation.<sup>163</sup> Because the polluter must pay for them, the more efficient, least-cost methods of effective control are more likely to be selected. The major difficulty with an effluent fee system, however, is quantifying the value of environmental damage caused by different amounts of waste discharge.<sup>164</sup> Since these values provide the theoretical basis for the schedule of fees applied to polluters<sup>165</sup> they must be as accurate as possible before effluent fees can achieve results superior to other approaches.

The third implementation approach is a system of mandatory or direct regulations, imposed on the land user, that would require the application of BMPs to agricultural nonpoint pollution sources.<sup>166</sup> Traditionally, direct regulation has been the pollution control approach adopted in environ-

---

157. Note, *Economic Incentives for Pollution Abatement: Applying Theory to Practice*, 12 ARIZ. L. REV. 511, 517 (1970). Subsidies in the form of tax incentives to encourage pollution abatement are in use at both the state and federal levels, but direct cash payments to polluters have not yet been fully utilized. *Id.*

158. *Id.*

159. *Id.* at 519-20.

160. *Id.* at 519.

161. *Id.*

162. *Id.* at 521-22.

163. *Id.* at 522-23.

164. *Id.* at 522.

165. *Id.*

166. *Id.* at 515.

mental legislation.<sup>167</sup> The basic scheme involves the creation of minimum standards that the regulated polluter must meet.<sup>168</sup> This system has been criticized because it can fail to give the polluter any incentive to take additional water quality improvement measures beyond the minimum legal requirement.<sup>169</sup> The direct regulatory approach can also be ineffective by failing to properly measure and balance abatement costs and environmental damage when it lacks sufficient information about particular sources and cannot develop alternative abatement measures on a source-by-source or river-by-river basis.<sup>170</sup> The direct regulatory approach—utilizing discharge standards with sanctions for violations—may be preferred in those situations in which the costs of abatement are predictable or limited, the magnitude of the environmental harm is uncertain or potentially quite large, development of new abatement technology is not needed, and costs between sources are uniform,<sup>171</sup> because these factors allow proper cost measurement and balancing. Since nonpoint agricultural water pollution does have many predictable abatement costs,<sup>172</sup> large and uncertain environmental harm,<sup>173</sup> and no need for further technology development,<sup>174</sup> it can be persuasively argued that BMP implementation under the section 208 plan through direct regulation is required. Agricultural nonpoint pollution does not, however, have uniform abatement costs between sources,<sup>175</sup> and on that basis direct regulation would be undesirable if it ignored these cost differences. Since the FWPCA mandates the direct regulation approach for implementing the section 208 plan,<sup>176</sup> it is important that the plan's control system be capable of considering the variable abatement costs found at different source locations when formulating and applying BMP requirements so that cost differences between sources are not ignored.

### *B. Rigid, Statutory or Flexible, Discretionary BMP Implementation*

With the direct regulation approach to section 208 nonpoint pollution abatement control methods and practices must be selected, the application

167. L. COATE & P. BONNER, *REGIONAL ENVIRONMENTAL MANAGEMENT* 201 (1975); Note, *Economic Incentives for Pollution Abatement: Applying Theory to Practice*, 12 ARIZ. L. REV. 511, 516 (1970).

168. Note, *Economic Incentives for Pollution Abatement: Applying Theory to Practice*, 12 ARIZ. L. REV. 511, 516 (1970). A proposed scheme for the Iowa section 208 plan involves a comprehensive survey and registration of all nonpoint sources with BMPs applied via a permit system for all land users. See text accompanying notes 213-17 *infra*.

169. Note, *Economic Incentives for Pollution Abatement: Applying Theory to Practice*, 12 ARIZ. L. REV. 511, 516 (1970).

170. *Id.* at 517.

171. Dewees, *Economic Considerations in the Selection of Pollution Control Legislation*, 10 OSGOOD HALL L.J. 627, 646 (1972).

172. See notes 61-71 *supra* and accompanying text.

173. See text accompanying notes 46-53 *supra*.

174. See notes 61-71 *supra* and accompanying text.

175. See text accompanying notes 54-56 *supra*.

176. See 33 U.S.C. § 1288(a)-(b) (Supp. V 1975).

amounts of these BMPs must be determined, and the resulting requirements applied to nonpoint sources. Two alternative implementation schemes, based upon different water quality control philosophies,<sup>177</sup> could be adopted for formulating and applying these controls. If water quality is to be based upon "ambient standards," general water quality is monitored and discharge sources are regulated only as necessary to maintain general water quality at levels adequate to preserve designated water uses.<sup>178</sup> Under such a system BMPs could be tailored to require the level of control necessary to attain the water quality goal. A major problem with this system is the difficulty involved in identifying which discharge sources cause discernable water quality damage so that controls can be applied to the responsible party.<sup>179</sup> Alternatively, water quality regulation could rely on effluent limitations that impose controls directly on the discharge sources without focusing on general water quality.<sup>180</sup> Under this system, BMPs would be applied to agricultural lands in amounts sufficient to prevent the discharge of pollutants from nonpoint sources, regardless of the quality of the receiving waters.<sup>181</sup> An effluent limitation system could either establish general control methods, at fixed levels, that are calculated to prevent waste discharge and apply evenly to all nonpoint sources, or the system could tailor BMPs to the physical conditions of each source location as necessary to ensure that no more than the maximum allowable quantities of pollutants are discharged from the source.

While section 208 does not expressly indicate whether an ambient or effluent system should be used for the areawide waste treatment management plan, the general thrust of the FWPCA,<sup>182</sup> the zero discharge goal<sup>183</sup> and non-degradation policy of the FWPCA,<sup>184</sup> and the pollution source identification problems of the ambient system that are especially difficult for nonpoint source situations, all strongly indicate that effluent limitations will be the required system for EPA approval of proposed state plans. If so, a choice must be made between rigid, statutory provisions enacted by the legislature in section 208 enabling legislation and flexible, discretionary rulemaking by the managing agency as alternative administrative processes for implementing BMP requirements.

### 1. Rigid, Statutory BMP Implementation

There are several advantages to using rigid, statutory controls.<sup>185</sup> First, the administrative costs of implementation are relatively low because the

---

177. See note 79 *supra*.

178. See note 79 *supra*.

179. S. REP. NO. 92-414, 92d Cong., 1st Sess. 7-10 (1971).

180. See note 79 *supra*.

181. See note 79 *supra*.

182. 33 U.S.C. § 1251 (Supp. V 1975); see Hines, *supra* note 14, at 541.

183. 33 U.S.C. § 1251(a)(1) (Supp. V 1975); 40 C.F.R. § 130.17(c)(1) (1976).

184. See note 79 *supra*.

185. Iowa's Surface Mining Reclamation Act is an example of the rigid, statutory approach to nonpoint source water pollution. See generally IOWA CODE §§ 83A.1-83A.30 (1975) (amended 1976). Water runoff pollution from surface mined lands, like agricultural nonpoint

managing agency does not have to use personnel and funds in the development of abatement methods or in the application of specific controls to particular pollution sources.<sup>186</sup> Second, since the managing agency cannot legally deviate from the methods and application levels fixed by statute, the rigid controls may have a greater certainty of enforcement than would discretionary controls. Finally, fixed controls are uniformly applied to all pollution sources, and it can be argued that uniform treatment of all dischargers is more equitable than flexible regulation that varies with the particular conditions of the source.

Statutory rigidity in determining BMP requirements can, however, lead to problems in effectively abating nonpoint agricultural pollution because fixed, statutory requirements cannot meet the varying needs of different nonpoint sources. A number of variable physical conditions at the nonpoint source location determine the type and degree of control that should be applied to prevent water pollution from agricultural lands.<sup>187</sup> For example, both the grade and length of slopes will influence water runoff rates and thus determine if contour tillage methods would be sufficient to prevent soil erosion or if terrace construction would be necessary.<sup>188</sup> The soil types present at a particular location will influence erosion rates and the degree of erosion control needed.<sup>189</sup> Variations in precipitation volume or intensity will affect the runoff levels of chemical fertilizers and pesticides and thereby determine the need for restrictions on the application of such chemicals.<sup>190</sup>

Since these factors vary among different nonpoint source locations, the control techniques and the degree to which they are applied should also vary.<sup>191</sup> Thus, row crop farming on relatively flat land may require few BMP restrictions while rolling land with easily eroded soil may require

---

pollution, varies with the particular physical conditions of each mining site, is environmentally harmful to surface waters, and can be controlled by land management and runoff prevention techniques. See generally Cardil, *Strip Mining and the 1971 West Virginia Surface Mining and Reclamation Act*, 75 W. VA. L. REV. 319, 326-28 (1972); Reitze, *Old King Coal and the Merry Rapiers of Appalachia*, 22 CASE W. RES. L. REV. 650, 652-55, 701-05 (1971); Comment, *A Proposal for Increased Administrative Discretion in the Formulation of Iowa's Surface Mining Reclamation Requirements*, 62 IOWA L. REV. 522, 523-25 (1976). The Iowa statute establishes mandatory land reclamation techniques at fixed levels and applies them in the same manner to all surface mining sites in the state. See IOWA CODE § 83A.17, .19 (1975) (amended 1976).

186. See Krier, *The Irrational National Air Quality Standards: Macro- and Micro-Mistakes*, 22 U.C.L.A. L. REV. 323, 329-36 (1974).

187. See text accompanying notes 54-56 *supra*.

188. METHODS AND PRACTICES, *supra* note 1, at 7; Interview with Dan Lindquist, Iowa Dep't of Environmental Quality water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

189. METHODS AND PRACTICES, *supra* note 1, at 7; Interview with Dan Lindquist, Iowa Dep't of Environmental Quality water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

190. METHODS AND PRACTICES, *supra* note 1, at 7; Interview with Dan Lindquist, Iowa Dep't of Environmental Quality water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

191. 40 C.F.R. § 131.11(j)(1) (1976); See APPROVED WORK PLAN, *supra* note 36, at 84; Donley & Hall, *Section 208 and Section 303 Water Quality Planning and Management: Where Is It Now?*, 6 ENV'T L. REP. (ELI) 50,115, 50,117 (1976).

extensive terracing or even prohibition of row crop use. In light of such variables, each nonpoint source should be individually analyzed to determine the particular conditions and the controls required to prevent pollution at that source location.<sup>192</sup> If statutory BMPs were applied inflexibly to all nonpoint sources, the controls would be greater than necessary to abate the pollution in some situations while insufficient to prevent agricultural pollutants from entering surface waters in others.

Economic inefficiency in the regulation process is another significant consequence of a rigid, statutory approach to BMP implementation because agricultural row-crop land use creates certain costs not borne by the private land user.<sup>143</sup> These costs are primarily the costs of environmental damage that are caused by nonpoint water pollution and imposed upon the general public rather than included in the private costs of producing the agricultural commodities grown on the land.<sup>194</sup> Because these "external" costs are shifted to persons other than the producer, the market price producers must receive to cover the costs of producing agricultural commodities is lower than the price that would reflect the total "real" costs created by the farming operation.<sup>195</sup> Since the cost of production and the resulting price to consumers is understated, the quantity of agricultural commodities produced and consumed increases.<sup>196</sup> Ideally, these external costs should be shifted back to the agricultural producer and ultimately to the consumer so that food producers properly bear all production costs and reduce output to the point necessary to achieve an economically efficient level of production.<sup>197</sup> The internalization of external costs can be

---

192. See 40 C.F.R. § 131.1(c) (1976); Currie, *Rulemaking Under the Illinois Pollution Law*, 42 U. CHI. L. REV. 457, 459-60 (1975).

193. See generally J. SENECA & M. TAUSSIG, ENVIRONMENTAL ECONOMICS 49-50 (1974); Brooks, *Strip Mine Reclamation and Economic Analysis*, 6 NAT. RESOURCES J. 13, 33 (1966); Dewees, *supra* note 171, at 628-29; Note, *Economic Incentives for Pollution Abatement: Applying Theory to Practice*, 12 ARIZ. L. REV. 511, 513 (1970).

194. See J. SENECA & M. TAUSSIG, *supra* note 193, at 49-50; Brooks, *supra* note 193, at 33; Dewees, *supra* note 171, at 628-29; Note, *Economic Incentives for Pollution Abatement: Applying Theory to Practice*, 12 ARIZ. L. REV. 511, 513 (1970). Environmental costs include lost recreational use of streams and lakes, destruction of aquatic wildlife, and increased domestic water treatment costs. See text accompanying notes 46-51 *supra*.

195. See J. SENECA & M. TAUSSIG, *supra* note 193, at 49-50; Dewees, *supra* note 171, at 628-29; Morton, *Strip-Mining Reform—Some Political and Economic Ideas*, 2 ENV'T'L AFF. 294, 296-97 (1972); Reitze, *Old King Coal and the Merry Rapists of Appalachia*, 22 CASE W. RES. L. REV. 650, 660 (1971).

196. See generally C. FERGUSON, MICROECONOMIC THEORY 479 (3d ed. 1972); D. WATSON, PRICE THEORY AND ITS USES 151-52, 292 (2d ed. 1968); Reitze, *Old King Coal and the Merry Rapists of Appalachia*, 22 CASE W. RES. L. REV. 650, 660 (1971).

197. See Brooks, *supra* note 193, at 33-34. Note, *Economic Incentives for Pollution Abatement: Applying Theory to Practice*, 12 ARIZ. L. REV. 511, 513 (1970).

The efficient level of production is at the level of output where the price of a unit of an agricultural commodity equals the marginal cost of the last unit produced. See C. FERGUSON, MICROECONOMIC THEORY 479 (3d ed. 1972). Marginal cost is the resultant increase in total production costs caused by an increase in the level of food commodity produced. The marginal cost of the last unit produced is the increase in total cost when production is increased by that last unit. For example, if production is increased from five units to six units and total cost increases from \$20.00 to \$23.00, the marginal cost of the last unit produced, the sixth, is \$3.00. See D. WATSON, PRICE THEORY AND ITS USES 151-52 (2d ed. 1968). Production

accomplished by requiring the agricultural producer to prevent environmental damage through the application of BMPs.<sup>198</sup> The resulting rise in private production cost and market price would reduce the quantity of food produced and consumed.<sup>199</sup> If, however, BMPs are inappropriate for

---

at a level of output when the marginal cost of the last unit produced equals the price received per unit satisfies one of the efficiency conditions for a Pareto Optimal solution. The value of resources (land, labor, capital, management) consumed in the production of a good represents the cost of production. Therefore, at the efficient level of production, the price paid by society per unit is equal to the marginal value of the resources consumed in the production of the last unit. See C. FERGUSON, MICROECONOMIC THEORY 479 (3d ed. 1972).

Production above the efficient level results in the marginal cost exceeding the price and in the over-consumption of resources that have a value greater than the value of the goods produced, as measured by the price of the good. Production above the efficient level results in a net loss of value. To remedy this situation, production should be reduced to the point where value lost from consumption of resources in producing the last unit just equals the value gained by creating that unit, since for all units produced above the efficient level the value gained from the output is less than the value lost to the consumption of resources, i.e., the price per unit is less than its marginal cost. As production is decreased the resources not consumed are released for use in other industries where they can be more productive. See *id.*

Production below the efficient level results in the failure to produce additional units that would have a value in excess of the value lost to resource consumption in the production, the price per unit being greater than its marginal cost. Output should be increased to the efficient level to optimize the total value created and more resources should be consumed in the industry because they add a positive gain in value created for society. See *id.* at 292. If the agricultural land user fails to bear all the costs of production, that land user's private marginal cost is decreased below the total, which is the actual marginal cost. The land user will produce at the point where the price equals the lower private marginal cost since that is the only cost constraint the farmer must bear. The level of production is above the efficient level since price is less than the total, actual marginal cost. Alternatively, if extra, unnecessary costs are imposed upon the farmer, then the private marginal cost is forced above the actual marginal cost. That level of production is below the efficient level since price is above the actual marginal cost. See *id.* It should be noted that Pareto Optimal efficiency cannot be achieved if all environmental damage is prevented. Complete prevention of environmental harm, at the loss of food production, fails to consider the economic value of the lost agricultural commodities. The true economically efficient point is some level of production between the output attained with no environmental damage and the output attained if no environmental controls were imposed. To require zero environmental damage will result in production below the efficient level as the farmer's private marginal cost would be greater than the actual marginal cost. If the legislative requirement, however, is that all environmental harm be prevented, then the economic efficiency analysis is still valid as a means of determining regulatory effectiveness because ineffective controls can result in even greater inefficiency. See generally J. HENDERSON & R. QUANDT, MICROECONOMIC THEORY 272-75 (2d ed. 1971). If the legislature wished to achieve the Pareto Optimal solution, it should not use any mandatory control process to regulate nonpoint source water pollution. Instead, it should use a system of effluent charges so that land users can equate actual total marginal cost to price. See text accompanying notes 162-64 *supra*. Since the Act requires a direct regulation system, the resultant loss in efficiency must be accepted, but it still should be minimized as much as possible by efficient control implementation. The efficiency analysis does not attempt to reconcile the economic theory of second best. See generally J. HENDERSON & R. QUANDT, MICROECONOMIC THEORY 272-75, 286-88 (2d ed. 1971).

198. See C. FERGUSON, MICROECONOMIC ANALYSIS 479 (3d ed. 1972); D. WATSON, PRICE THEORY AND ITS USES 151-52, 292 (2d ed. 1968); Dewees, *supra* note 171, at 628-29; Morton, *Strip-Mining Reform—Some Political and Economic Ideas*, 2 ENV'TL AFF. 294, 296-97 (1972).

199. C. FERGUSON, MICROECONOMIC THEORY 479 (3d ed. 1972); D. WATSON, PRICE THEORY AND ITS USES 292 (2d ed. 1968); Brooks, *supra* note 193, at 33-34. If it is politically determined that reductions in agricultural production and increases in food prices are undesirable, government compensation to land users for the cost of BMP application could be employed to prevent such results while still abating nonpoint pollution. See text accompanying notes 290-94 *infra*.

the needs of a particular site, too little control may be applied, environmental damage could occur, and economic efficiency will not be achieved.<sup>200</sup> Conversely, excessive application of pollution control techniques above the abatement needs of a source location will produce unnecessary costs in excess of the levels needed to prevent environmental harm, once again leading to economic inefficiency.<sup>201</sup>

A legislature's lack of experience and time for the formulation of abatement methods and application amounts is the second problem with rigid, statutory determination of environmental controls. The relevant considerations that affect BMP requirements are technically complex. Competent evaluation of these factors requires not only expertise in vari-

---

200. See generally C. FERGUSON, *MICROECONOMIC THEORY* 479 (3d ed. 1972); D. WATSON, *PRICE THEORY AND ITS USES* 292 (2d ed. 1968). Insufficient controls will fail to prevent environmental damage, thus failing to shift the external costs from the public to the private land user that created those costs. If too little of the external cost is shifted to the private producer, the price of a unit of agricultural commodity will be less than the marginal cost of the last unit produced. Too much of the commodity is produced and economic efficiency is lost. See generally *id.*; note 197 *supra*.

201. See generally C. FERGUSON, *MICROECONOMIC THEORY* 479 (3d ed. 1972); D. WATSON, *PRICE THEORY AND ITS USES* 292 (2d ed. 1968). BMPs that are too strong for the needs of a nonpoint source location will shift extra costs onto the production process, even though production did not create those costs. The environmental harm may be prevented, but the unnecessary costs imposed upon the land user will cause the price of a unit of agricultural commodity to exceed the marginal cost of the last unit produced. Too little of the commodity will be produced and economic efficiency will be lost. See generally *id.*; note 197 *supra*. The price of agricultural commodities should include costs sufficient to achieve an efficient level of production, but should not be required to cover more costs than are necessary to prevent environmental damage. This is particularly true because food scarcity is an increasingly serious world problem. Unnecessary costs only decrease the production and increase the price of food. In cost-benefit analysis terms, reduced environmental damage creates the benefits on nonpoint pollution abatement while the expense of applying BMPs, food production decreases, and food cost increases comprise the costs. See generally J. SENECA & M. TAUSSIG, *supra* note 193, at 16-19; Brooks, *supra* note 193, at 30-32; Dewees, *supra* note 174, at 628-29; Note, *Economic Incentives for Pollution Abatement: Applying Theory to Practice*, 12 ARIZ. L. REV. 511, 513 (1970). Environmental protection benefits and costs necessary to achieve such protection must be jointly considered in evaluating nonpoint sources pollution control, simply because net benefits—total benefits less total costs—determine the overall effectiveness of those controls. See Krier, *The Irrational National Air Quality Standards: Macro- and Micro-Mistakes*, 22 U.C.L.A. L. REV. 323, 325-26 (1974). As an example, if soil erosion can cause environmental harm resulting in damage valued at \$10,000 at a particular source location, then the prevention of such harm is a benefit of \$10,000. If terracing efforts require earth moving expenditures and reduced food production valued at the rate of \$1000 for every row of terraces, then the more terracing required, the greater the cost of BMP efforts necessary to prevent environmental harm. Suppose at this site the slope and soil conditions combine to necessitate four rows of terraces to prevent soil erosion pollution. If statutory requirements fixed the number of terrace rows at three for all sources, then the BMPs would be inadequate for this particular source. A certain amount of environmental harm would occur, and the benefits of abatement efforts would be reduced. If the damage amounted to \$2000, the benefits would be reduced to \$8000 while the BMP cost would be \$3000. Net benefits—total benefit less total cost—would be \$5000. If the necessary four rows of terracing had been applied, the benefits would have been the full \$10,000 and the cost \$4000, giving a net benefit of \$6000. Alternatively, if the source conditions had been such that only two rows of terraces were necessary to prevent the environmental harm, applying the fixed three-row requirement would achieve the full benefits of \$10,000, but at a cost of \$3000, giving net benefits of \$7000. Had the lesser, adequate two rows of terraces been applied, the cost would have been only \$2000 while the benefit would remain \$10,000, giving a net benefit of \$8000. See generally Brooks, *supra* note 193, at 30-32.

ous scientific and technological fields, but also continuous attention. Legislatures cannot be expected to possess the expertise or have the time for in-depth examination and analysis of the various factors affecting nonpoint source water pollution.<sup>202</sup>

A third problem with the rigid, statutory approach to abatement controls is that while land users would be required to take certain steps toward abatement, they would not be obligated to assure that those efforts were effective in preventing environmental harm.<sup>203</sup> For example, a farmer may be required to construct terraces in a certain situation. If this fails to prevent soil erosion, the farmer would not be liable for any environmental damage caused by the resulting pollution because the farmer's efforts fulfilled the minimum legal requirement. Moreover, to reduce costs the land user may, in fact, intentionally restrict preventive efforts to the bare legal minimum or fail to ensure that conscientious efforts are made in the application of BMPs.<sup>204</sup> Thus, rigid, statutory regulation fails to provide incentives to the land user for successful abatement efforts.

Finally, because statutory pollution controls require revision by legislative amendment, they are difficult to change.<sup>205</sup> If immediate changes in BMP requirements become necessary they may still have to await a formal convening of the legislature or may be delayed in the legislative process long enough to allow serious environmental damage to occur.

## 2. Flexible, Discretionary BMP Implementation

### a. Proposed Means for Achieving Regulatory Flexibility

A more effective alternative to rigid, statutory requirements for implementing the section 208 plan is the development of flexible, discretionary BMPs through agency promulgated regulations that provide variable control methods and application levels established for differing nonpoint source categories. A system of differentiated regulations could incorporate a category approach, dividing the total problem into manageable parts and devising effluent abatement measures for each part.<sup>206</sup> Each pollution-causing activity, as identified by categorization, could be planned for independently with the highest feasible abatement levels determined for each activity.<sup>207</sup> Agricultural activities causing nonpoint source pollution could be sub-categorized on the basis of soil types, slope gradients, rainfall,

---

202. See Currie, *Rulemaking Under the Illinois Pollution Law*, 42 U. CHI. L. REV. 457, 458 (1975).

203. Comment, *A Proposal for Increased Administrative Discretion in the Formulation of Iowa's Surface Mining Reclamation Requirements*, 62 IOWA L. REV. 522, 533-34 (1976).

204. See Reitze, *Old King Coal and the Merry Rapists of Appalachia*, 22 CASE W. RES. L. REV. 650, 717 (1971); Note, *Economic Incentives for Pollution Abatement: Applying Theory to Practice*, 12 ARIZ. L. REV. 511, 516 (1970).

205. Amendments must go through the involved and time-consuming process of committee assignment, hearings, report drafting, floor debates, possible additional alterations, possible conference committee procedures, and executive approval. L. WRAY, *HOW A BILL BECOMES A LAW* 7-16 (14th ed. 1976).

206. GUIDELINES, *supra* note 3, at 7-9.

207. *Id.* at 7-10.



degree of surface disturbance, and other specific conditions.<sup>208</sup> Because a greater variety of feasible management control options and potentially higher achievement levels of pollution abatement are more often available with new as opposed to existing nonpoint sources, a further differentiation could be made on the basis of existing and new nonpoint sources.<sup>209</sup> Once each sub-category classification was fixed, a maximum quantity or load of pollutant, which the particular nonpoint source could not exceed, could be allocated to each class.<sup>210</sup> Finally, BMPs for each sub-category would be selected.<sup>211</sup> For each nonpoint source sub-category, a number of control options could be developed and combined to form alternative BMP requirements that could, in light of cost and effectiveness, be varied in application when necessary to meet the effluent load limitation goal.<sup>212</sup>

The development of flexible BMP requirements within differentiated, sub-categorized regulations must be accompanied by some means of applying those regulations directly to agricultural nonpoint sources. Application of BMPs to particular sources could be achieved by a permit system similar to the National Pollution Discharge Elimination System (NPDES) currently used to regulate point sources of water pollution.<sup>213</sup> After a general survey and recording of agricultural land use activity, all agricultural land users could be required to obtain a permit to engage in pollution creating activity from the managing agency. As a prerequisite, the permit could require the land user to apply specified BMPs to the nonpoint sources covered by the permit. These specified permit conditions would be established on the basis of the agency's differentiated BMP regulations and tailored, in light of particular source conditions, to achieve the effluent limitation goals of the relevant source category. A similar permit system operating under the NPDES program indicates that the permit system can offer a number of benefits: the permit application procedures identify dischargers and the types of pollutants being discharged;<sup>214</sup> the permit gives the discharger notice of its cleanup obligations<sup>215</sup> and it specifies an enforceable schedule of compliance;<sup>216</sup> finally, the existence of a permit can facilitate enforcement by identifying and disposing of issues that can arise in enforcement proceedings.<sup>217</sup> In addition to differentiating regulations and tailoring of

---

208. *Id.* at 7-11.

209. *Id.* at 7-10.

210. *Id.* These effluent limitations could be allocated to sub-category sources in proportion to the surface area of the source, assigning each category a base allowance of pollutant discharge or loading limit according to the uncontrollable loading from each source type. Alternatively, a best technology approach, defining the load constraint on the basis of abatement efficiency of the best abatement techniques for agricultural nonpoint source types, could be employed. *Id.* at 7-12. To the extent that the allowable load would be assigned to existing sources, with little or no allowance for pollution from new sources, it would be necessary to establish load constraints for new sources on the basis of best technology. *Id.* at 7-13.

211. *Id.* at 7-19.

212. *Id.*

213. See text accompanying notes 19-22 *supra*.

214. *NRDC v. Train*, 7 E.R.C. 1881, 1885 (D.D.C. 1975).

215. *Id.*

216. *Id.*

217. *Id.*

permit conditions, an agency procedure for granting variances based on extraordinary circumstances could also provide flexible BMP application to nonpoint water pollution sources.

An example of an environment regulatory agency with extensive discretionary authority to develop and apply pollution controls is the Iowa Department of Environmental Quality.<sup>218</sup> Under its broad regulatory powers and in accordance with EPA requirements, DEQ can establish air<sup>219</sup> and water<sup>220</sup> quality standards that must be maintained in the state and determine air emission<sup>221</sup> and water effluent<sup>222</sup> controls for pollutant sources. While EPA determines the ends of pollution regulation through air and water quality standards, the Department has discretion to set the means necessary to accomplish those ends—the emission and effluent controls. For the section 208 plan, an implementation scheme could be developed that granted authority to the managing agency to apply its discretion in formulating both the objectives of control efforts—fixed effluent limitations on the discharge of pollutant wastes—and the flexible controls necessary to achieve those objectives. If the section 208 plan adopts an effluent limitation approach<sup>223</sup> to nonpoint pollution abatement, then a discretionary ends-means system would be applicable. On the other hand, if an ambient standards approach<sup>224</sup> is employed, the managing agency could have discretion to establish both the end result water quality standards and the BMP means to achieve those standards.

#### b. *Advantages of Regulatory Flexibility*

Granting regulatory agencies administrative discretion to determine pollution abatement requirements has several advantages, regardless of whether an ambient standards or effluent approach is adopted by the section 208 plan. First, the managing agency would be able to formulate and apply controls in a flexible manner by adapting them to the needs of each nonpoint source location.<sup>225</sup> The agency by use of its expertise could anticipate the many possible combinations of physical conditions that influence abatement needs at different sources<sup>226</sup> and the correct type and amount of control would be applied to avoid the economic inefficiency of

---

218. IOWA CODE § 455B.2 (1975); see text accompanying notes 72-80 *supra*. The DEQ is empowered to make regulations and revise them to effectuate its regulatory duties. IOWA CODE § 455B.5(4) (1975).

219. IOWA CODE § 455B.12 (1975).

220. *Id.* § 455B.32.

221. *Id.* § 455B.12(2).

222. *Id.* § 455B.32(3),(5),(8).

223. See note 79 *supra*.

224. See note 79 *supra*.

225. APPROVED WORK PLAN, *supra* note 36, at 84. Donley & Hall, *Section 208 and Section 303 Water Quality Planning and Management: Where Is It Now?*, 6 ENV'T'L L. REP. (ELI) 50,115, 50,117 (1976).

226. 40 C.F.R. § 131.11(j)(1) (1976); see Dietrich, *Mined Land Reclamation in the Western United States*, 16 ROCKY MTN. L. INST. 143, 203 (1971); Hard Minerals Comm. of the Natural Resources Section of the Am. Bar Ass'n, *Mined-Land Reclamation in the Western United States—A Brief Look*, 4 NAT. RES. LAW. 545, 551-53 (1971).

abatement methods that are too lax or too stringent.<sup>227</sup> Economic efficiency would result from the optimal type and level of BMPs because the external costs created by agricultural land users would be internalized—agricultural commodity producers and consumers would bear the full cost of their activity, the efficient level of food would be produced, and the net benefits of nonpoint pollution regulation would be maximized.<sup>228</sup>

Greater expertise and continuous attention to the formulation of pollution abatement requirements support a second important reason for granting regulatory agencies discretion in this area.<sup>229</sup> Since the managing agency must employ a full time staff and seek consultation with other governmental bodies<sup>230</sup> in its enforcement efforts, it is more efficient to use this expertise in developing BMP controls than to attempt to duplicate it in the legislature. Thus, an agency is better equipped than a legislature to implement BMPs because it has access to expertise not available to a legislature.

Third, flexible, discretionary implementation of BMP controls could reduce the tendency of agricultural land users to fulfill only minimal legal requirements. The agency, with its discretionary power, could require the land user to satisfy such efforts as would be necessary to achieve the effluent limitation discharge goal. Normally, a profit maximizing farmer, desiring to avoid further BMP requirements and the attendant costs that could be imposed if the agency discovered that initial efforts had failed, would have an incentive for successful results the first time. Thus, the effectiveness of BMPs would be improved and extra costs of additional efforts could be avoided.

Finally, implementation of BMP controls by a flexible, discretionary process of agency rulemaking and variance granting would allow general revisions to be made in a less cumbersome manner than that of the legislative process. In addition, if initial abatement requirements proved inadequate to prevent nonpoint source pollution, the situation could be quickly remedied because the managing agency would have authority to establish new regulations to correct the problem.<sup>231</sup>

### *c. Disadvantages of Regulatory Flexibility*

In weighing the merits of a flexible, discretionary system, consideration must also be given to a number of objections to the delegation of discretionary authority. One problem is the usurpation of the legislature's policy-making authority.<sup>232</sup> Through its discretionary power in formulating environmental controls, the agency could conceivably expand the scope

227. Brooks, *supra* note 193, at 33. See notes 192-201 *supra* and accompanying text.

228. Brooks, *supra* note 193, at 33; Dewees, *supra* note 171, at 628-29.

229. Currie, *Rulemaking Under the Illinois Pollution Law*, 42 U. CHI. L. REV 457, 458 (1975).

230. See IOWA CODE § 455B.3 (1975).

231. See 40 C.F.R. § 130.1(c) (1976); GUIDELINES, *supra* note 3, at 9-2.

232. I F. COOPER, STATE ADMINISTRATIVE LAW 37-38 (1965).

of the regulatory program beyond what was intended by the legislature.<sup>233</sup> Unchecked administrative discretion would thus allow the agency to substitute its judgment in place of the legislature's in order to formulate public policy.<sup>234</sup> This potential usurpation problem, however, can be dealt with by providing statutory standards in the enabling legislation. If the particular regulatory system establishes agency discretion to formulate both the end water quality standards<sup>235</sup> and the BMP means to achieve the ends, similar to the powers of the Iowa DEQ, the agency's enabling statute granting such authority can still contain a statement of the program's purpose that can be used by the courts to review agency action and to strike down any agency expansion beyond or in contravention of the legislative intent.<sup>236</sup>

Another objection to a flexible, discretionary regulatory system is that such an approach can be administratively complex and costly.<sup>237</sup> Specific tailoring of BMPs to the conditions of different source locations requires extensive time and resource inputs.<sup>238</sup> In particularly complex situations, extensive implementation efforts may be incapable of determining the optimal amount of control needed to prevent pollution discharge.<sup>239</sup> In developing the section 208 plan, the benefits of a flexible implementation system should be balanced against the potential loss of administrative efficiency.<sup>240</sup> Greater administrative costs would be incurred in a discretionary control system, but these costs may well be offset by the benefits and cost savings that can be derived from flexible, economically efficient, substantively effective BMP implementation.

A final problem with administrative discretion is the agency's relative isolation and potential unresponsiveness to the public. Agency administrators and staff are appointed, not elected, to their positions.<sup>241</sup> Of course, some isolation is desirable to prevent undue political influence, but it should not allow the agency to disregard legitimate public needs. Arguably, the attitudes of agency personnel could have a great impact upon the regulatory process<sup>242</sup> and could result in two types of discretionary abuse. The agency could perceive agricultural land users in an adversary role, placing absolute priority on environmental values to the exclusion of the economic interest of the farming industry.<sup>243</sup> The BMPs imposed upon the land user could therefore become too strict and cause excessive costs.

---

233. *Id.* at 41-42.

234. *Id.* at 42.

235. See text accompanying notes 76-78 *supra*.

236. See note 247 *infra*.

237. Currie, *Rulemaking Under the Illinois Pollution Law*, 42 U. CHI. L. REV. 457, 492 (1975).

238. *Id.*; Currie, *Rulemaking Under the Illinois Pollution Law*, 42 U. CHI. L. REV. 457, 492 (1975).

239. See GUIDELINES, *supra* note 3, at 7-15.

240. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 738 (1975).

241. See, e.g., IOWA CODE §§ 455A.4, .9(1); 455B.2; 467A.4(2) (1975).

242. Schneider, *Strip Mining in Kentucky*, 59 KY. L.J. 652, 653 (1971).

243. See *Peabody Coal Co. v. Pollution Control Bd.*, 36 Ill. App. 3d 5, 9, 344 N.E.2d 279, 282-83 (1976).

Conversely, the agency could become "captured" by the industry and perceive its role to be primarily one of advancing agricultural production interests.<sup>244</sup> In order to further this role, the agency could become lax in its formulation and enforcement of controls and fail to prevent agricultural nonpoint source water pollution.<sup>245</sup> In either situation the agency would be unresponsive to the needs of land users or the public because of a lack of direct citizen pressures and input in its discretionary implementation of BMP requirements.<sup>246</sup> In addition, this isolation would be supported by judicial policy, since courts generally do not substitute their own judgment for that of a regulatory agency in the formulation of substantive rules that have the force of law.<sup>247</sup>

Any possible abuses flowing from the agency's isolation and potential unresponsiveness can be significantly reduced in several ways. First, procedural safeguards can be imposed to make an agency more responsive to public needs. In Iowa, unless expressly exempted, a nonpoint pollution regulation program would be subject to the Iowa Administrative Procedure Act, which requires that agency adoption of regulations be conducted subject to certain procedures designed to protect against abuses of discretion.<sup>248</sup> These procedures provide for: public notice,<sup>249</sup> submission of public views in writing,<sup>250</sup> oral presentations,<sup>251</sup> agency statements in support of its actions,<sup>252</sup> public initiation of rule changes,<sup>253</sup> and judicial review.<sup>254</sup> Additional procedural safeguards can be applied to discretionary implementation of environmental controls by provisions in an agency's enabling statutes or by procedural rules established by the agency itself.<sup>255</sup> These additional devices can provide extra protection from agency abuses of discretion, but they can also greatly slow down and complicate the

244. See Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 847 (1975).

245. See Larsen, *Federal Regulation of Strip Mining*, 2 ENV'T'L AFF. 533, 556 (1972); Schneider, *Strip Mining in Kentucky*, 59 KY. L.J. 652, 653 (1971).

246. See Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 847 (1975).

247. IOWA CODE § 17A.19(8) (1975); 1 F. COOPER, *STATE ADMINISTRATIVE LAW* 257-60 (1965). In *Perez v. Webb*, 533 S.W.2d 650 (Mo. Ct. App. 1976), a Missouri Court of Appeals enunciated the standard for judicial review of discretionary action by regulatory agencies:

The scope of judicial review of such matters is strictly limited. The reviewing court cannot determine the weight of the evidence nor substitute its discretion for that of the administrative body. Generally, its function is to determine primarily whether the decision was supported by competent and substantial evidence upon the whole record; whether the administrative act was arbitrary, capricious or unreasonable; and, whether an abuse of discretion appears.

*Id.* at 654.

248. IOWA CODE § 17A.4 (1975). See text accompanying notes 341-53 *infra*.

249. IOWA CODE § 17A.4(1)(a) (1975).

250. *Id.* § 17A.4(1)(b).

251. *Id.*

252. *Id.*

253. *Id.* § 17A.7.

254. *Id.* § 17A.19.

255. *Id.* § 17A.1(2) (1975).

administrative process.<sup>256</sup> At some point the benefits of additional protection become smaller than the costs of resulting administrative complexity and delay.<sup>257</sup> In proper amounts, however, procedural safeguard provisions found in the IAPA or the enabling statutes can ensure that the agency will remain responsive to the problems and interests of the agricultural land users and the general public.<sup>258</sup>

A second factor that, in certain situations, can protect against agency unresponsiveness and abuses of discretion in implementing pollution controls is judicial review. When an agency adopts legislative rules having the force of law, a court may review such rules on a limited basis. The court cannot substitute its judgment for that of the agency, but may only determine if such a rule exceeds the agency's delegated authority, if proper procedures were followed in making the rule, and if it is an arbitrary, capricious, or unreasonable rule.<sup>259</sup> If the agency has set, for example, effluent limitation objectives by regulation, the court could use those objectives as a basis for examining agency action under the arbitrary, capricious, or unreasonable criterion of judicial review. If the BMP requirements were found to be in excess of what was necessary to achieve the effluent discharge limitation as set by the agency, the BMPs could be held unreasonable and thus invalid.<sup>260</sup> Conversely, if the controls were excessively lax and failed to prevent environmental damage, they could also be held unreasonable and void.<sup>261</sup> By using the established standards of an ends-means system to evaluate BMP requirements, courts could ensure that the agency would remain responsive to the needs of the public and not abuse its discretionary powers.

Since contravention of legislative intent, increased administrative costs, and agency unresponsiveness to public needs are problems for which corrective measures exist, they should not present insurmountable barriers to a discretionary approach to the implementation of BMP requirements. These potential disadvantages appear to be outweighed by the increased economic efficiency, expanded expertise, land user incentives, and revision capability of a flexible, discretionary control system that could be incorporated into the section 208 areawide waste treatment management plan.

### 3. *Additional Considerations in Choosing Between Rigid and Flexible BMP Implementation*

Because rigid and flexible controls involve both advantages and disadvantages a number of additional factors should be considered in evaluating

---

256. Hamilton, *Rulemaking On a Record by the Food and Drug Administration*, 50 TEX. L. REV. 1132, 1153-56 (1972).

257. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 738 (1975).

258. *See id.* at 846.

259. 1 F. COOPER, STATE ADMINISTRATIVE LAW 257-60 (1965); Stewart, *The Reformation of American Administrative Law*, 88 HARV. L. REV. 1667, 1700-01 (1975).

260. *See* note 247 *supra* and accompanying text.

261. *See* note 247 *supra* and accompanying text.

the issue of rigid, statutory determination versus flexible, discretionary formulation of BMP requirements. First, technical factors that influence the effectiveness of regulation should be considered.<sup>262</sup> For example, fixed requirements would be inadequate to prevent nonpoint pollution on those agricultural lands that physical conditions make particularly susceptible to pollution runoff.<sup>263</sup> If the first priority of BMPs is to effectively abate waste runoff,<sup>264</sup> then such controls should be varied to ensure effective results at all source locations. In addition, to address the different constituent substances and phenomena that determine the quality of surface waters<sup>265</sup> as separate problems that will vary in the measures needed for correction, flexible, selective control methods and levels may be necessary. For these reasons a flexible system of agency formulated BMP requirements may more adequately meet the technical constraints of effective regulation.

A second important consideration relevant to the selection of a rigid or flexible control system is the public response of various agricultural and environmental interest groups.<sup>266</sup> Public acceptance and support will be vital to a successful section 208 plan<sup>267</sup> as well as a major determinant of the legislative response to the proposed enabling legislation submitted for approval at the end of the section 208 planning process. Public reaction is likely to vary between interest groups. Initial responses from agricultural land users, who have been involved in the citizen participation program of the Iowa planning effort,<sup>268</sup> have favored flexible, discretionary controls.<sup>269</sup> The land users, as regulated parties, are concerned about the unnecessary regulation and excess costs that could result from rigid, statutory requirements.<sup>270</sup> Environmental interests, on the other hand, may prefer statutory controls because of the potential, under a flexible and discretionary system, for agency favoritism of the polluting industry with resultant failure to protect water quality.

A third consideration to weigh in the choice between statutory or discretionary control is the extent to which the system adopted is capable of considering and reconciling competing interests. In formulating and applying BMP requirements, the managing agency should consider the human<sup>271</sup> and economic interests as well as the technical and environmen-

262. APPROVED WORK PLAN, *supra* note 36, at 84; GUIDELINES, *supra* note 3, at 6-5, 7-6.

263. See text accompanying notes 187-92 *supra*.

264. See GUIDELINES, *supra* note 3, at 7-4.

265. See generally WATER QUALITY REPORT, *supra* note 1, at II, 9-27.

266. See 40 C.F.R. § 131.20(a)(1) (1976); APPROVED WORK PLAN, *supra* note 36, at 84, 87; GUIDELINES, *supra* note 3, at 4-1, 6-1.

267. See 40 C.F.R. § 131.20(a)(1) (1976); APPROVED WORK PLAN, *supra* note 36, at 84, 87; GUIDELINES, *supra* note 3, at 4-1, 6-1.

268. See note 120 *supra* and accompanying text.

269. Interview with Dan Lindquist, Iowa Dep't of Soil Conservation water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

270. *Id.*

271. [Resource managers] are basically concerned with management of people's behavior relative to natural resources, rather than with natural resources per se . . . . [They] usually recognize that the great preponderance of their time is spent on problems affecting the population at large.

D. HENNING, ENVIRONMENTAL POLICY AND ADMINISTRATION 3 (1974).

tal constraints.<sup>272</sup> The managing agency should try to balance all competing interests<sup>273</sup> even though in many cases it could not expect to completely satisfy every affected party. The flexible, discretionary formulation of BMP requirements can meet this need to balance and reconcile competing interests because, with proper procedural safeguards, the agency can receive input from all interests and can be responsive to their legitimate needs.<sup>274</sup> It could be argued that statutory BMP requirements would also allow for input from all interested groups because the requirements are enacted by the popularly elected legislature. The rigidity of such a system, however, denies it sufficient response capability to reconcile the dynamic and important needs of interest groups.

A fourth consideration relevant to the issue of rigid versus flexible controls for the section 208 plan is the potential reaction of the courts to the delegation of extensive discretionary authority to the managing agency. In order to avoid a possible abuse of agency discretion, the Iowa Supreme Court has generally required a showing of several elements. First, the regulatory field must be an area in which discretion is of sufficient necessity to warrant the possibility of abuse.<sup>275</sup> If the agency operates with marked expertise, the court has been more willing to approve grants of administrative discretion.<sup>276</sup> Second, some legislative standards must be present in the enabling statute to prevent the agency from exceeding legislative intent.<sup>277</sup> Third, although the legislative standards requirement has not been completely abandoned,<sup>278</sup> the court has shifted its emphasis from legislative standards to procedural safeguards as the primary means of preventing possible abuses of discretion.<sup>279</sup> The court has noted with approval the trend in other states to rely upon procedural safeguards<sup>280</sup> to control abuses of administrative discretion.<sup>281</sup> A discretionary section 208 control system would probably be favored by the court because: (1) it could be subject to legislative standards in the managing agency's enabling statute; (2) would be applied to a dynamic, complex field that requires flexibility, expertise, and considerable administrative time; and (3) would be subject to the procedural safeguards of the Iowa Administrative Procedure Act or

272. "Nonpoint source control strategies should be formulated with attention to discovering the most cost-effective and practical strategy with the least harmful environment impact." Phillips, *Developments in Water Quality and Land Use Planning: Problems in the Application of The Federal Water Pollution Control Act Amendments of 1972*, 10 URB. L. ANN. 43, 81 (1975).

273. Stewart, *supra* note 259, at 1683, 1759.

274. See text accompanying notes 301-15 *infra*.

275. Cf. Grant v. Fritz, 201 N.W.2d 188, 193-94 (Iowa 1972) (The regulation of bank locations); Iron Worker's Local 67 v. Hart, 191 N.W.2d 758, 772-73 (Iowa 1971) (supervision by Civil Rights Commission of Employment practices).

276. See Grant v. Fritz, 201 N.W.2d at 193.

277. See State v. Rivera, 260 Iowa 320, 323, 325, 149 N.W.2d 127, 130-31 (1967).

278. Elk Run Tel. Co. v. General Tel. Co., 160 N.W.2d 311, 315-16 (Iowa 1968).

279. *Id.* at 315-17.

280. *Id.*

281. *Id.* at 317.



other procedural requirements established by the enabling statute or by the managing agency itself.<sup>282</sup>

On balance, for implementing the section 208 areawide waste treatment management plan, flexible, discretionary formulation and application of BMPs would be superior to a rigid, statutorily prescribed set of controls. The advantages of economic efficiency, expert and continuous administration, polluter incentives for successful abatement, and rapid adjustment to changing conditions all strongly support such an approach. Most of the potential problems associated with administrative discretion can be reduced by the presence of procedural safeguards, general legislative standards, and provisions for meaningful judicial review. When the advantages of flexible control implementation are combined with its ability to meet the technical constraints of effective regulation, the positive reaction by regulated land users, the capability of such a system to consider all competing interests, and the potential for a favorable response from the Iowa Supreme Court, the flexible, discretionary implementation of BMP requirements appears to be a desirable element in the administrative framework of the section 208 plan.

### C. *Voluntary or Mandatory Controls*

Under a flexible, discretionary implementation system, section 208 Best Management Practices (BMPs) could be applied through a voluntary compliance program or imposed as mandatory requirements. With a voluntary system the managing agency could establish BMP guidelines, notify land users of water quality problems created by agricultural activity, and negotiate with the land user to reach a settlement about the appropriate action needed to abate nonpoint source pollution. Since BMP application can result in large construction expenditures, a voluntary compliance program would almost certainly require government compensation for BMP costs before any appreciable land user response could be expected. Iowa presently has this type of program for soil erosion control. The Soil Conservation Districts under the Department of Soil Conservation are empowered to cooperate and enter into agreements with owners and occupiers of land within the district to furnish financial and technical aid for erosion control operations, subject to conditions set by the district commissioners.<sup>283</sup> The effectiveness of the voluntary approach is depend-

---

282. An example of the Iowa Supreme Court's acceptance of a discretionary environmental regulatory program is found in *State ex rel. Iowa Air Pollution Control Comm'n v. City of Winterset*, 219 N.W.2d 549, 552 (Iowa 1974). In that case the court upheld the administrative discretion of the Iowa Department of Environmental Quality to establish air pollution control regulations and air quality standards. *Id.* Various other courts have upheld such discretion when the regulatory area warranted flexible control implementation. *See, e.g.*, *American Power & Light Co. v. SEC*, 329 U.S. 90, 105, 149-50 (1946); *Department of Natural Resources v. Linchester Sand & Gravel Corp.*, 274 Md. 211, 219-20, 229, 334 A.2d 514, 520-21, 525-26 (1975); *Ward v. Scott*, 11 N.J. 117, 127, 93 A.2d 385, 389 (1952).

283. IOWA CODE § 467A.7(4) (1975). This program differs from the much more recently enacted mandatory authority of the Soil Conservation Districts. *See* text accompanying notes 84-88 *supra*.

ent upon the maintenance of mutual respect between the agency staff and the land user who is violating water quality standards.<sup>284</sup> If the agency, through bureaucratic red tape or insensitivity, engenders the resentment of the violator, voluntary compliance will be diminished.<sup>285</sup>

There are several reasons for seeking a voluntary solution to violations of pollution standards. Most land users would respond to a cooperative, non-antagonistic approach without continued agency monitoring and enforcement efforts, to cure future violations.<sup>286</sup> Gaining compliance by cooperation can avoid protracted legal proceedings that deplete limited agency resources.<sup>287</sup> Moreover, if an emergency arises in which time is critical, voluntary cooperation is often the quickest method of abating the violation.<sup>288</sup> Finally, voluntary compliance may be justified because courts may be unwilling to sanction violators, notwithstanding compelling statutory language.<sup>289</sup>

Enforcement by voluntary cooperation, however, has several undesirable consequences, the most obvious of these is that some violators will not respond until compelled to do so.<sup>290</sup> Another related problem is that voluntary programs with financial subsidies and little agency control over abatement efforts can result in inefficient pollution regulation if the land user does not apply effective controls or least-cost methods.<sup>291</sup> Even if receipt of the subsidy is conditioned upon the application of the agency's controls, application is dependent on negotiated settlements wherein compromise to secure agreement may reduce the appropriateness and efficiency of the controls selected. A final problem with voluntary implementation is that pollution discharge may continue for a lengthy period before land users finally comply.<sup>292</sup> Some critics argue that a purely voluntary program, if not sufficient to achieve present soil erosion control goals, certainly cannot meet the future demands for water pollution control.<sup>293</sup>

It can therefore be argued that, because of the potential for ineffective regulation under a voluntary program, a mandatory system should be developed for controlling agricultural nonpoint pollution.<sup>294</sup> This type of mandatory scheme could have provisions for government compensation of BMP costs or could require land users to bear the costs. If compensation is

---

284. Project, *Water Pollution Control in Texas*, 48 TEX. L. REV. 1029, 1075 (1970).

285. *Id.*

286. *Id.* at 1074.

287. *Id.*

288. *Id.*

289. *Id.* at 1075.

290. *Id.* For example, the voluntary programs of the Soil Conservation Districts in Iowa encourage land user participation through cost-sharing incentives and instructions for soil management techniques. Hines, *supra* note 47, at 755-56. Financial assistance is conditioned upon acceptance and performance of an approved soil conservation program. *Id.* at 756. This voluntary approach has produced improvements in the control of erosion, but after thirty years of operation, erosion is still a serious problem. See text accompanying notes 39-40 *supra*.

291. See text accompanying notes 163-64 *supra*.

292. Project, *Water Pollution Control in Texas*, 48 TEX. L. REV. 1029, 1075 (1970).

293. Hines, *supra* note 47, at 756.

294. *Id.*

paid and the types and levels of BMP application are determined by the managing agency, so that effective, least-cost controls are required, the inefficiencies of a subsidy program can be avoided.<sup>295</sup> Under this type of mandatory, compensated scheme the abatement costs necessary to achieve water quality goals are borne by the general public, not by the land user. Nevertheless, economic efficiency is still achieved because the total benefits of pollution abatement are obtained at the least necessary total cost, thereby maximizing net benefits.<sup>296</sup> The presence of BMP cost compensation would reduce land user resistance to the section 208 plan and make enforcement much easier. If compensation is not provided, the section 208 plan may be less costly to the general taxpayer,<sup>297</sup> but the need for greater enforcement efforts would increase the administrative costs of monitoring and legal proceedings that also must be paid from tax revenues.<sup>298</sup>

The choice between voluntary and mandatory control systems should be considered in light of public and EPA reaction. The regulated land users would probably favor voluntary compliance since that approach least restricts their private property rights. If mandatory requirements were adopted, however, land users would be expected to prefer a BMP cost compensation program because it can protect their profit margins. Environmental groups would be expected to prefer mandatory controls because they can give greater assurance of effective abatement of agricultural nonpoint water pollution.<sup>299</sup>

A mandatory control system for BMP application would be preferable to voluntary compliance as an administrative implementation method for the section 208 plan. This is primarily because of the increased certainty of effective, comprehensive control of nonpoint pollution. A cost compensation plan would be desirable if it were determined politically that general taxpayers should bear the cost of abating nonpoint pollution from agricultural land use sources. This determination will be an issue of social equity but will not affect the economic efficiency of the section 208 plan as long as BMPs are developed and applied in amounts that maximize net benefits by effectively abating pollution at the least necessary cost. Compensation of

---

295. See text accompanying notes 163-64 *supra*.

296. See note 201 *supra*.

297. The agricultural land users would bear the costs of pollution abatement and such costs would increase the the production costs and prices of agricultural commodities. See notes 194-201 *supra* and accompanying text.

298. Interview with Dan Lindquist, Iowa Dep't of Soil Conservation water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

299. The EPA regulations concerning required elements of the section 208 plan do not expressly indicate whether BMP application may be through voluntary compliance or must be by mandatory requirements. The EPA does specify that section 208 must contain regulatory programs that provide for the abatement of all pollution sources. 40 C.F.R. § 131.11(n) (1976). Whether a voluntary program, having a history of ineffective control, would satisfy the EPA requirements and be approved is certainly not assured. A land-user compensation program should not prevent a mandatory system of controls from meeting the EPA requirements for the section 208 plan, although at the present time, no provisions exist for EPA funding of such a compensation program. Interview with Dan Lindquist, Iowa Dep't of Soil Conservation water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

land users is also desirable to the extent that it can reduce resistance to the section 208 plan, thereby decreasing administrative enforcement costs and increasing effective pollution abatement.

#### D. Public Participation

##### 1. The Rulemaking Process

If a flexible, mandatory control system is established for implementing the section 208 plan, the issue arises whether the public should participate in the formulation and application of Best Management Practice (BMP) requirements. In implementing the plan, the agency must consider economic, technical, and human factors. Arguably, society as a whole should be a party to these decisions,<sup>300</sup> otherwise, discretionary administrative determinations can fail to reflect societal values, be inefficient in achieving desired results, and be unjust toward persons affected by the regulatory program.<sup>301</sup> It should be noted, however, that public participation in rulemaking is intended only to facilitate communication of information and views by interested persons for consideration by the agency<sup>302</sup>, not to transfer the actual decisionmaking power to the interested public. The discretionary decisionmaking process can derive a number of benefits from active public participation. First, citizen input can be an effective means of making administrative agencies responsive to all interests affected by environmental regulation decisions.<sup>303</sup> In many instances regulatory agencies are directly controlled by the same business firms that the agencies are created to control.<sup>304</sup> There are several explanations for agency bias toward the regulated industry. The agency will be held responsible if the industry suffers serious economic dislocation; thus, to avoid adverse political consequences, administrators may pursue conservative policies.<sup>305</sup> The regulatory bureaucracy may in fact eliminate actual and potential competition by seeking to elaborate and perfect its controls over the industry, and inadvertently reinforce the position and power of established firms.<sup>306</sup> The financial and personnel resources of the agency are often limited in comparison to those of the regulated firm and a continued adversary posture can quickly consume such resources.<sup>307</sup> Hence, the agency must compromise if it wishes to accomplish anything of significance.<sup>308</sup> Limited resources also

---

300. See D. HENNING, ENVIRONMENTAL POLICY AND ADMINISTRATION 3 (1974); Emond, *Participation and the Environment: A Strategy for Democratizing Canada's Environmental Protection Laws*, 13 OSGOODE HALL L.J. 783, 795 (1975).

301. Emond, *supra* note 300, at 791.

302. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 847 (1975).

303. See text accompanying notes 271-72 *supra*.

304. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 847 (1975); Stewart, *supra* note 259, at 1713.

305. Stewart, *supra* note 259, at 1685-86.

306. *Id.*

307. *Id.* at 1686.

308. *Id.*

cause agencies to rely on the regulated industry for information, policy development, and political support.<sup>309</sup> Agency personnel respond favorably to those who provide them attention, information, and positive feedback about their functions<sup>310</sup> and, more often than not, it is the regulated interests that provide such input for the agency. In contrast, the individual member of an unorganized group has too small an interest to justify or motivate representation of that interest to the agency.<sup>311</sup> The administration of government suffers when important social interests cannot be regularly heard concerning administrative actions that affect them.<sup>312</sup>

Broadened public participation can help to correct this agency bias in favor of regulated interests.<sup>313</sup> Increased public involvement can provide administrators with an inducement to respond to the articulated needs of those who provide input for the decisionmaking process.<sup>314</sup> The agency personnel have an opportunity to receive facts and opinions from the public and can become aware of commonly felt needs and desires.<sup>315</sup> The opportunity for a concerned public to participate in agency decisionmaking can "prod the agenc[y]" and require officials satisfied with the status quo to reexamine their positions.<sup>316</sup> The solution to the problem of bureaucratic bias in favor of the regulated group is to restructure decisionmaking procedures and enforcement efforts "to ensure that all affected and interested persons share equally in the decision [process]."<sup>317</sup>

A second benefit of broad public participation is the resulting increase in information flowing to the administrative agency that is necessary for consideration in formulating fair and intelligent environmental controls.<sup>318</sup> Since an agency's accumulated knowledge and expertise are rarely sufficient to provide all the needed data upon which rulemaking decisions should be based, agency communication with interested parties, who are often in a better position to provide much of the specific information on the subject of proposed regulations,<sup>319</sup> is essential.<sup>320</sup> Agency staffs are required to formulate a position that blends a number of interests and policies, and as a result they cannot be relied upon to forcefully present the discrete views of different interest groups.<sup>321</sup> To consider separate, unblended viewpoints, an agency should receive direct input and presenta-

---

309. *Id.*

310. Cramton, *The Why, Where and How of Broadened Public Participation in the Administrative Process*, 60 GEO. L.J. 525, 529-30 (1972).

311. Stewart, *supra* note 259, at 1686.

312. Cramton, *supra* note 310, at 530.

313. *Id.*

314. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 846 (1975).

315. *Id.*

316. *Id.* at 847.

317. Emond, *supra* note 300, at 803.

318. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 845-46 (1975).

319. *Id.*

320. *Id.*

321. Cramton, *supra* note 310, at 527-28.

tions by the interests holding such views. Public participation in agency hearings also affords the opportunity, through the use of questions directed to participants, for exploring the weaknesses of opposing positions and for probing the soundness of presentations.<sup>322</sup>

A third advantage to citizen involvement in agency rule making could result from increased public acceptance and support for agency actions. If interested parties are given an opportunity to influence the decisionmaker, public representation will increase,<sup>323</sup> and decisions will obtain legitimacy.<sup>324</sup> Dissenters may be less likely to withhold support from a rule if they have had an adequate opportunity to present their objections prior to its promulgation.<sup>325</sup> Citizen participation can also increase public support for agency actions by heightening general awareness of the justifications for the regulatory policy.<sup>326</sup> In the area of environmental concerns, greater emphasis on the public's education is certainly needed<sup>327</sup> and general citizen participation could aid in meeting that need. In formulating BMP requirements through rulemaking, the managing agency will decide issues of policy, make normative judgments on the degree of control and protection desirable in light of all relevant interests, and determine issues of fact—positive determinations of actual conditions and relationships between control techniques and specified goals. In either policy or factual decisions, the input of various facts, viewpoints, and data can ensure agency responsiveness, provide information, and increase public support.

## 2. Contested Case Proceedings

Broadened public participation can also provide benefits in the BMP application process as well. If a regulated party sought a variance from or was in violation of BMP requirements, the IAPA would require a contested case hearing before any agency action.<sup>328</sup> In such a proceeding other parties with an interest in the result, a downstream water user for example, could possess factual information relevant to the agency's decision and should have an opportunity to participate, perhaps by right of intervention.<sup>329</sup> To the extent that interested persons could be adversely affected by the result of agency contested case proceedings, were not adequately represented by the actual parties, and could not initiate an independent proceeding to protect their interests, they would have a justifiable claim to

---

322. Currie, *Rulemaking Under the Illinois Pollution Law*, 42 U. CHI. L. REV. 457, 470-71 (1975).

323. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 847 (1975).

324. Emond, *supra* note 300, at 785.

325. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 847 (1975).

326. Currie, *Rulemaking Under the Illinois Pollution Law*, 42 U. CHI. L. REV. 457, 471 (1975).

327. D. HENNING, ENVIRONMENTAL POLICY AND ADMINISTRATION, 175-76 (1974).

328. See notes 49-100 *supra* and accompanying text.

329. Another example of interested party involvement in enforcement efforts is the citizen suit provision of the FWPCA. 33 U.S.C. § 1365 (Supp. V 1975).

intervene, present evidence, and make arguments related to the adjudicated issues of fact.<sup>330</sup> Another agency proceeding wherein public participation could be of benefit would be in permit granting procedures.<sup>331</sup> If the section 208 plan required agricultural land users to obtain a permit to operate, such land users could be granted an agency hearing to adjudicate factual issues related to the BMP permit conditions. As in variance proceedings or violation enforcement hearings, this permit process could involve determinations that affect other persons' interests and could benefit from citizen involvement. A current water pollution regulation permit system, the NPDES program, recognizes the value of citizen participation, and the relevant EPA regulations provide for interested persons, who are not direct parties, to participate in permit hearings for point source dischargers.<sup>332</sup> Similarly, citizen involvement could be beneficial in formulating and applying BMP requirements to nonpoint sources.

### 3. Advantages and Disadvantages of Public Participation

Broad public involvement in the agency decision process also has several major disadvantages. The first of these is the extra cost of administrative procedures and personnel needed to facilitate participation, and a second is the delay in policy implementation caused by citizen input proceedings.<sup>333</sup> The resource and delay costs incurred may undermine the effective discharge of an agency's responsibilities.<sup>334</sup> Also, if too many procedural requirements are imposed on the agency, the decisionmaking process could be driven underground.<sup>335</sup> Administrators may enforce their own private rules about various matters rather than undergo formal establishment of such rules through ponderous procedures.<sup>336</sup> A third disadvan-

---

330. See also *Office of Communication of United Church of Christ v. FCC*, 359 F.2d 994 (D.C. Cir. 1966). In that case the court discussed the right of consumers of television services to intervene in an FCC proceeding on renewal of a television station license, and declared that:

unless the listeners—the broadcast consumers—can be heard, there may be no one to bring programming deficiencies or offensive over-commercialization to the attention of the Commission in an effective manner . . . . In order to safeguard the public interest in broadcasting, therefore, we hold that some participation must be allowed in license renewal hearings.

*Id.* at 1004-05. See also *National Welfare Rights Organization v. Finch*, 429 F.2d 725 (D.C. Cir. 1970). That court granted to a voluntary association of welfare recipients the right of intervention into HEW hearings concerning the conformity to federal standards of state welfare programs. The court reasoned that the association would have standing for judicial review and that therefore it had a right of intervention. See *id.* at 732-39.

331. See text accompanying notes 213-214 *supra*.

332. 40 C.F.R. § 124.36 (1976).

333. Emond, *supra* note 300, at 786.

334. Stewart, *supra* note 259, at 1772.

335. R. LORCH, *DEMOCRATIC PROCESS AND ADMINISTRATIVE LAW* 97 (1969).

336. *Id.* Such resource and delay costs may, however, be relatively minor when compared with the delays and expenses associated with prolonged opposition to an unacceptable policy that is more likely to occur if the public is excluded from the decisionmaking process. Participation can result in better substantive decisions and regulatory effectiveness. The slower initial decision can be more economical in the long run because better results can be obtained and protracted delays from litigation can be avoided. Emond, *supra* note 300, at 786.

tage of increased public participation is that irrelevant and unreliable material, information, or arguments can be presented to the agency.<sup>337</sup> Also, by increasing the range of interests and the complexity of the issues and by developing a larger record, expanded public participation may make it impossible to use general rules in making agency decisions and thus reinforce the discretionary nature of such decisions.<sup>338</sup>

The presence of both advantages and disadvantages indicates the necessity, in determining the degree of public participation available in implementing the section 208 plan, for balancing the benefits of citizen involvement against the need for effective, efficient administration of environmental policies.<sup>339</sup> The flexibility and capacity of agencies to properly and adequately perform their lawful functions must be preserved.<sup>340</sup> Consequently, procedural requirements for public participation "that unduly fetter agency action or frustrate its purposes, are unwise."<sup>341</sup> The costs and benefits of public participation must be weighed, and if costs exceed benefits, no useful purpose is served.<sup>342</sup> In striking the balance, though, society's interests in involving affected members of the public in administrative rulemaking "is not so slight that it should be set aside solely on the basis of minor inconvenience or expense to government."<sup>343</sup> Recognizing this value of citizen involvement, EPA regulations require that states incorporate broad public participation into the section 208 plan, informing and involving citizens in plan management.<sup>344</sup> The scope and particular procedures of any participation program, however, are left to state development.

#### 4. *Public Participation Under the IAPA*

The Iowa Administrative Procedure Act contains several public participation provisions that would apply to any state administered section 208 plan. Advance published notice of all rulemaking must be made in the Iowa Administrative Code.<sup>345</sup> The notice should apprise the involved parties of information sufficient to enable such persons to ascertain the nature and scope of the proceedings and the means by which they can participate.<sup>346</sup> The IAPA requires that all interested persons be granted an opportunity to submit for agency consideration data, views, or arguments relevant to the proposed rules.<sup>347</sup> The norm for public participation in

---

337. Emond, *supra* note 300, at 786.

338. See Stewart, *supra* note 259, at 1777-78.

339. See Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 848 (1975).

340. *Id.* at 738.

341. *Id.* at 848.

342. Emond, *supra* note 300, at 827.

343. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 848 (1975).

344. 40 C.F.R. § 130.1(d)(3) (1976).

345. IOWA CODE § 17A.4 (1975).

346. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 851 (1975).

347. IOWA CODE § 17A.4(1)(b) (1975).



rulemaking is the submission of written materials,<sup>348</sup> however oral presentations must be allowed if a timely request is made by twenty-five interested persons.<sup>349</sup> This oral hearing is not a formal proceeding with rights of confrontation, cross examination, or official record.<sup>350</sup> Instead, it is an informal presentation of data and arguments intended to express views more effectively than is possible with submission of written materials.<sup>351</sup> Consequently, in making rules an agency is not limited to the information presented by interested persons nor to any formal record,<sup>352</sup> but may use its own expertise and relevant information from any source.<sup>353</sup> To help assure that the agency fully considers all written and oral submissions for a proposed rule on their merits, any interested person can request the agency to issue a concise statement listing the reasons for and against the rule and explaining why the agency overruled the considerations that were urged against the rule.<sup>354</sup> The IAPA also permits a citizen to petition for the issuance, amendment, or repeal of a rule.<sup>355</sup> This provision allows citizens to prod an agency into action and requires that administrators at least consider public needs and wants.<sup>356</sup> The IAPA provides for general public involvement in agency rulemaking processes that would develop section 208 BMP requirements, but participation is not mandated in agency hearings of individual contested cases wherein BMPs would be applied to particular nonpoint source locations and which could benefit from citizen involvement.

These IAPA procedures are only minimum standards<sup>357</sup> that section 208 plan enabling statutes or the managing agency could augment with other provisions. The agency could be required to formulate BMP controls by formal proceedings with confrontation, cross-examination, and rules based solely on the record; extend public involvement to contested case proceedings; or develop institutional support mechanisms for diffuse interests that desire to participate but lack adequate resources.

Formal procedures for agency rulemaking "on the record" can result in excessive costs and delays<sup>358</sup> and may place an undue burden on efficient, effective agency administration. In addition, public interest groups can, in all probability, make a greater contribution in informal rulemaking

---

348. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 852 (1975).

349. IOWA CODE § 17A.4(1)(b) (1975).

350. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 853 (1975).

351. *Id.*

352. *Id.*

353. *Id.*

354. IOWA CODE § 17A.4(1)(b) (1975).

355. *Id.* § 17A.7.

356. Bonfield, *The Iowa Administrative Procedure Act: Background, Construction, Applicability, Public Access to Agency Law, The Rulemaking Process*, 60 IOWA L. REV. 731, 847 (1975).

357. IOWA CODE § 17A.1(2) (1975).

358. See Hamilton, *Rulemaking on a Record by the Food and Drug Administration*, 50 TEX. L. REV. 1132, 1156 (1972).

procedures because the groups are better able to speak about general propositions than to engage in trial-type proceedings.<sup>359</sup> Thus, effective public participation in agency rulemaking may be best served by keeping informal any procedures created beyond the IAPA minimum requirements. In contrast to formal agency proceedings, extending public involvement to contested cases, involving enforcement, variance, or permit proceedings, may be desirable to the extent that the application of BMP requirements to particular source locations could benefit from increased information about the total affects of applying such controls.

Although procedural requirements in rulemaking or contested case proceedings can provide avenues for public input, effective participation requires more than the submission of general arguments.<sup>360</sup> The significant issues in agency proceedings often involve complicated questions of fact, policy, and law.<sup>361</sup> To make a meaningful impact on the decisionmaking process, public interests must prepare factual investigations, presentations of exhibits, and expert testimony.<sup>362</sup> This is an expensive process and can greatly inhibit active participation of those persons and groups that have limited financial and human resources.<sup>363</sup> To truly expand effective public participation, it may be necessary to aid interested parties in surmounting the cost barriers through government subsidization of such items as transcript costs,<sup>364</sup> expert witness fees,<sup>365</sup> and attorney's fees.<sup>366</sup>

Another way to increase public interest impact on agency decisions is to establish advisory committees that include persons affected by agency action as a part of the decisionmaking structure.<sup>367</sup> These committees are charged with preparing proposed rules and are effective to the extent they are capable of representing public interest and are diligent in participating in the formulation of regulations.<sup>368</sup> Such groups may be ineffective if they divide into opposing factions or develop a conflict of loyalty between their constituent interest and the general needs of the administrative task.<sup>369</sup> If the section 208 plan is to fully benefit from public participation, provisions beyond the IAPA minimum that extend citizen involvement to the applica-

---

359. Cramton, *supra* note 310, at 535-36.

360. *Id.* at 526.

361. *Id.*

362. *Id.*

363. *Id.* at 526-27; Stewart, *supra* note 259, at 1764.

364. Cramton, *supra* note 310, at 539.

365. *Id.* at 540.

366. *Id.* at 541-42. There is a tendency to favor public participation without worrying about the attendant details, but it is the details of institutional devices and funding that are most important. *Id.* at 531. Possible institutional arrangements that could provide cost support for increased public participation include: "public advocacy" government agencies that represent otherwise inadequately represented persons in regulatory proceedings, increased damage remedies that allow recovery of legal expenses, regulatory agency provision for legal and technical aid to parties appearing before it, and an expanded system of general legal services for those who cannot afford them. *Id.* at 541-45.

367. See generally A. LEISERSON, ADMINISTRATIVE REGULATION 100 (1942).

368. K. DAVIS, 1 ADMINISTRATIVE LAW TREATISE § 6.03, at 366 (1958).

369. A. LEISERSON, ADMINISTRATIVE REGULATION 130-32 (1942).

tion as well as development of BMPs and provide cost support for public interests may be needed.

##### 5. *Additional Considerations for Increasing Public Participation*

Several general factors should be considered in evaluating the need for public participation in implementing BMP requirements. First, public reaction to citizen involvement should be examined. The agricultural land users presently involved in the Iowa planning effort participation program have expressed a desire for continued participation in the section 208 plan as it is implemented.<sup>370</sup> The general feeling expressed is that access to the decisionmaking process is necessary to ensure that BMPs are tailored to the needs of particular source locations, and thus avoid unnecessary controls and costs.<sup>371</sup> To the extent that land users do not organize into various interest groups, public participation, especially in informal proceedings, would aid these regulated parties in communicating their views and needs to the managing agency. Environmental interests would also be expected to support broad public participation for two reasons. First, citizen involvement could greatly facilitate communication to the agency of information and arguments necessary to implement BMP controls sufficient to prevent environmental harm. Second, participation by environmental groups could offset undue industry influence on the agency that could develop if the agricultural land users organize.<sup>372</sup>

A second consideration relevant to the degree of desirable public participation is the effect it could have on the managing agency's ability to consider and reconcile all competing interests.<sup>373</sup> Through citizen input all viewpoints could be communicated to the agency,<sup>374</sup> various interests could be made more aware of the need and justification for the agency's decision,<sup>375</sup> and disappointed groups could better accept the legitimacy of the result if they were allowed to participate in its determination.<sup>376</sup> Finally, the Iowa Supreme Court should react favorably to broad citizen participation because public involvement could act as an effective procedural safeguard for the protection of public and individual interests from abuses of agency discretion.<sup>377</sup>

Broad public participation would be a desirable feature of the administrative structure currently being developed to implement BMPs under the section 208 plan. The formulation and application of such controls would benefit from public input of viewpoints and information. Public participation can ensure that the managing agency considers and responds to all

---

370. Interview with Dan Lindquist, Iowa Dep't of Soil Conservation water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

371. *Id.*

372. See text accompanying notes 313-17 *supra*.

373. See text accompanying notes 271-72 *supra*.

374. See text accompanying notes 318-22 *supra*.

375. See text accompanying notes 323-27 *supra*.

376. See text accompanying notes 323-27 *supra*.

377. See text accompanying notes 276-82 *supra*.

legitimate needs and concerns without bias. Citizen participation can increase public awareness of regulatory needs and can increase public acceptance and support of the section 208 plan. Additional provisions above the IAPA minimum may be desirable to extend public involvement to agency BMP application in contested case proceedings and to ensure that diffuse, resource-poor interests are not excluded from participation by cost barriers. If cost barriers can be avoided and citizen input extended, the benefits of public participation, the expected positive responses of most interests as well as the courts, and the enhanced agency capability to consider all competing interests provide strong arguments in favor of public participation in implementing Iowa's section 208 plan.

### *E. Local or State Level Implementation*

Developing an administrative structure for the section 208 plan requires the selection of local, statewide, or intermediate level governmental bodies to serve as the managing agency. If a local level authority structure is adopted, the existing state body most likely to be designated as managing agency is the Department of Soil Conservation.<sup>378</sup> The DSC's Soil Conservation Districts are designed to function as local level control implementing groups, aware of and making decisions based upon the variable conditions of particular lands in the district.<sup>379</sup> This close proximity to and awareness of local needs allows controls to be tailored specifically to such conditions and can result in economically efficient regulation.<sup>380</sup> The Soil Conservation District system can provide local level implementation and draw upon a statewide support organization for technical expertise in soil erosion control and for financial assistance.<sup>381</sup> The DSC and Soil Conservation Districts could, however, have several problems in implementing a section 208 program. First, the district's authority and control end at the local level, and the scope of water pollution problems, unlike soil erosion, extends beyond the local area.<sup>382</sup> Pollution can have broad spillover effects throughout the water course basin. The local authority may be unable to affect sufficient control beyond its jurisdictional area, for example, on nonpoint pollution sources further upstream, to achieve desired water quality goals. A second problem with local level enforcement authority can arise from the institutional structure of the districts themselves.<sup>383</sup> Although the district commission may possess coercive powers, it may be strongly influenced by local interests that persuade the commission not to exercise its authority. As members of the local community and neighbors of regulated parties, district commissioners may hesitate to force compliance in the face of traditional agrarian values of laissez faire freedom from

---

378. See text accompanying notes 81-97 *supra*.

379. See IOWA CODE § 467A.44 (1975).

380. See text accompanying notes 225-28 *supra*.

381. See text accompanying notes 81-97 *supra*.

382. See Hines, *supra* note 47, at 756-57.

383. *Id.* at 736.

government limitations.<sup>384</sup> A third problem resulting from DSC management of the section 208 plan is that the Department has no expertise in the development or monitoring of water quality standards.<sup>385</sup> These potential problems related to local level implementation raise serious questions about the Soil Conservation Districts' effectiveness as the section 208 management agency and an alternative authority structure may be preferable.

If a centralized, statewide level of implementation authority is established for the section 208 plan, the Department of Environmental Quality is a prime candidate for designation as the managing agency.<sup>386</sup> The DEQ has an established structure with expertise in water quality standards and monitoring procedures. It has past experience with the EPA, which will be overseeing the state's implementation of the section 208 plan. The DEQ could take a more comprehensive approach to implementation because it can apply controls in all parts of the state, coordinating regulation in all parts of a water quality problem area. Being a central authority, DEQ would be less subject to local interest influence and more likely to enforce authorized mandatory controls. The DEQ's major disadvantage stems from its centralized structure, which makes it more remote from local, individual source conditions. This remoteness could reduce DEQ's sensitivity to local needs.<sup>387</sup>

Since both local level implementation and centralized statewide authority can result in reduced regulatory effectiveness, neither existing unit of government seems suitable for developing and applying controls for water pollution caused by agricultural nonpoint sources.<sup>388</sup> One possible resource management body that could be created to avoid the problems of local or statewide implementation is a watershed or river basin authority.<sup>389</sup> The concept underlying this proposal is that maximum effectiveness in management of a hydrologically defined area is achieved through comprehensive and coordinated planning and regulation of all facets of the water and water-related land resources.<sup>390</sup> Arguably, these intermediate level agencies would be the ideal units to develop and enforce BMP requirements<sup>391</sup> since they could exert authority in all parts of the water quality problem area—the entire watershed. These agencies would be removed from the local level and less subject to the influence of local interests. However, they would not be too remote from particular source locations and should be sufficiently aware of specific physical conditions and needs to make effective regulation decisions. Although the Conservancy Districts established under the DSC presently lack authority for implementing mandatory BMPs, they are an example of an existing agency

---

384. *Id.* at 756.

385. Interview with Dan Lindquist, Iowa Dep't of Soil Conservation water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

386. See text accompanying notes 72-79 *supra*.

387. See text accompanying notes 187-94 *supra*.

388. Hines, *supra* note 47, at 756.

389. *Id.* at 756-57.

390. *Id.* at 757.

391. *Id.*

structure organized at an intermediate, river basin level.<sup>392</sup> A new intermediate level agency structure could be developed, but this would be costly and require extensive organization and start up time that could delay effective implementation of the section 208 plan. Alternatively, a joint administrative effort by both the DEQ and DSC, organized at the river basin or watershed level, could avoid extensive development costs and delays and could combine the DSC's expertise in soil erosion control with the DEQ's expertise in water quality and experience with EPA oversight of environmental programs. The increased benefits and reduced organizational costs of a combined operation indicate that joint DEQ-DSC administration of a river basin authority structure should be considered in developing the section 208 plan.

In determining the managing agency's authority level structure, several general aspects of nonpoint source pollution regulation should also be considered. First, the technical nature of nonpoint water pollution abatement supports the establishment of intermediate river basin authorities that can consider particular source location needs and also apply comprehensive regulation to the entire problem area. Second, the need for considering and reconciling all competing interests indicates that statewide or river basin authority would be preferred because these structures may be less subject to influences from purely local interests. Third, public reaction should be considered. Iowa agricultural land users have indicated a preference for local level implementation of BMP requirements.<sup>393</sup> They express the concern that statewide, centralized agencies cannot appreciate and respond to particular local needs and conditions.<sup>394</sup> Environmentalists would probably prefer a centralized authority structure that would reduce local interest influence on the agency decisionmakers and give greater assurance of enforcement.

The intermediate level river basin or watershed authority appears to be the preferred administrative structure for implementing BMP requirements. It can provide comprehensive regulation for all of the hydrologically defined problem area. An intermediate level authority is also capable of considering particular source conditions and would be less subject to undue influence. It is the best system for meeting the technical needs of nonpoint pollution abatement and can consider all relevant competing interests. An intermediate level authority should also be acceptable to both agricultural land users and environmental interest groups because it is capable of reducing each group's concern about statewide or local level enforcement. In Iowa, a basic framework for such an administrative structure currently exists in the DSC Conservancy Districts, though it presently lacks sufficient authority to implement mandatory controls. To take advantage of existing regulatory expertise in the DSC and DEQ and to avoid the

---

392. See text accompanying notes 89-97 *supra*.

393. Interview with Dan Lindquist, Iowa Dep't of Soil Conservation water quality program chief, in Des Moines, Iowa (Jan. 28, 1977) (on file with the *Iowa Law Review*).

394. *Id.*

costs and delays of creating a new agency, a jointly administered program with sufficient authority at the river basin level would be an effective administrative structure for implementing the section 208 plan.

#### V. CONCLUSION

In developing administrative structures and processes for the section 208 areawide waste treatment management plan, serious consideration should be given to a program of flexible, discretionary BMP implementation, applied by a system of mandatory requirements, with extensive public participation in agency decisionmaking, and managed by intermediate-level, river basin authorities. A flexible, discretionary program, capable of tailoring controls to the conditions of particular nonpoint pollution sources, can be economically efficient, can apply expertise and continuous attention to the administrative task, would be able to respond quickly to changing circumstances, and should have broad support from agricultural land users. A compulsory system is necessary to ensure adequate control of all nonpoint sources since voluntary compliance could not be certain of eliciting sufficient response from the regulated land users. Public participation can help to prevent agency unresponsiveness to public needs, would increase the flow of information to the agency for use in its implementation decisions, could generate public acceptance and support of the section 208 program, and should be preferred by both agricultural and environmental interests. The river basin authority structure can avoid several of the problems encountered by local or statewide bodies because it would have comprehensive authority in all parts of the pollution problem area and could consider local conditions and needs, yet it should not be subject to undue local interest influence.

As discussed previously,<sup>395</sup> the environmental problems caused by agricultural nonpoint water pollution are serious and require preventive regulation of agricultural land users. At the same time the demands of society for food commodities are increasing. To reconcile these conflicting interests the regulatory process must consider the needs of all interested groups, and in implementing BMP requirements, it must balance the competing interests. The proposed administrative structures and processes discussed in this Note offer one means by which the section 208 areawide waste treatment management plan can strike an efficient balance between important environmental concerns and the necessity of agricultural commodity production.

---

395. See text accompanying notes 47-53 *supra*.