Enforcement of Philadelphia's 1969 Air Management Code: The First Three Years

James D. Keeney
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More than a hundred spectators in the Philadelphia City Council chambers cheered on October 10, 1969, as the Council unanimously adopted a new Air Management Code for the City. In typical political phraseology, but also with considerable foundation, the new Code was described as "the toughest air control bill in the nation."

A forerunner of similar codes in Illinois, New York, and elsewhere, the new Code adopted in Philadelphia gave sweeping new powers to the City's already existing Air Pollution Control Board (APCB). Overall, the Code's provisions were not very different...
from those which are now being required of states and cities throughout the nation by the United States Environmental Protection Agency. Thus the Philadelphia experience in enforcing its model Code over a three-year period is of considerable interest.

I. HISTORICAL BACKGROUND

The Philadelphia Air Management Code, signed by the Mayor on October 20, 1969, was adopted only after heavy political pressure had been applied in favor of its enactment by a citizens' lobby, by Pennsylvania's Air Pollution Commission (APC) and by the National Air Pollution Control Administration (NAPCA). In 1954, the City adopted an air pollution control ordinance, quite progressive for its time, which led to a substantial reduction of smoke and soot in the years following its adoption. Eventually, however, the momentum of this earlier effort was lost, and the Philadelphia effort stagnated.

The first public indication that the Philadelphia program had slipped seriously came in 1966 when the APC warned that it would refuse to recertify Philadelphia's air pollution control program unless the City's antiquated particulate regulations were amended. This was a serious threat to the City, since local air pollution control programs were only allowed to operate in Pennsylvania so long as they were certified as effectively enforcing standards at least as stringent as those of the Commonwealth itself. The City's position regarding the particulate regulation was that an entirely new air code should be considered in preference to lesser, piecemeal revision of the 1954 legislation and that a broader approach to air pollution control should be attempted. Accordingly, officials of Philadelphia and surrounding communities cooperated in order to secure a United States Public Health Service grant to study air pollution problems throughout the Delaware Valley. One of the results of the fifteen-month, $277,000 study was to increase the pressure on Philadelphia officials to take effective action
in the area of air pollution control. The findings of the study, released late in 1967, showed Philadelphia to be overwhelmingly the worst source of air pollution in the region, belching far more noxious gases, fumes, and smoke into the air of neighboring communities than it received from them, and that, if only it would undertake a serious antipollution campaign, air quality throughout the region would be greatly improved.13

At the same time, NAPCA officials were prodding local Philadelphia authorities to act quickly on their own initiative and thereby avoid the embarrassment of having a federal air pollution control conference called under the provisions of the Clean Air Act of 196514—a distinct possibility, since federal officials had criticized the region as “almost devoid of any local leadership, political or otherwise, that shows real promise of cleaning up the air in a reasonable time.”15 Then Republican mayoralty candidate, now District Attorney, Arlen Specter, characterized the Air Pollution Control Section of the Philadelphia Department of Health as being “almost in the basement of the municipal bureaucracy.”16

In April 1968, the APC gave the City final notice that its air pollution control program would be decertified if new particulate regulations were not promulgated immediately.17 When the City’s APCB failed to respond to this eleventh-hour call to action, the Commonwealth’s APC formally re-assumed jurisdiction over the City’s air pollution control program.18

Thus the City administration was under strong pressure from state and federal governments, surrounding communities, and opposition politicians to take dramatic steps to reverse the clearly deteriorating situation. Finally succumbing to this pressure in the summer of 1968, the City contracted with Dr. P. Walton Purdom, a recognized air pollution control expert, to draft a new and comprehensive Air Management Code.19 Purdom’s draft was approved by the Philadelphia APCB in October 1968, and by the City’s Law Department

16. A. Specter, Air Pollution in Philadelphia 25 (1967) (mimeograph on file in office of former Philadelphia City Councilman, David Cohen, 1420 Walnut Street, Phila., Pa.). The bureaucratic structure, according to Specter, was: (1) Mayor; (2) Commissioner of Public Health; (3) Deputy Commissioner for Community Health Services; (4) Director of the Division of Environmental Health; and (5) Acting Chief of the Air Pollution Control Section.
17. Sussman Interview, supra note 10.
18. Id.
19. Purdom Interview, supra note 8.
in March 1969. In July, the City Council's Health and Welfare Committee held hearings on the draft Code, and in October the Air Management Code was finally adopted.

We have described Philadelphia's reluctance to deal with its air pollution problems and the impact of state and federal pressure in some detail to draw an analogy between this relatively typical, large American city which adopted a surprisingly tough air pollution control code, almost despite itself, and the many states which are now being forced to enact similar codes in the context of similar incentives and much stronger federal pressures made possible by the Clean Air amendments of 1970. It is the major purpose of this Article to provide some practical introduction to the problems and potentials of codes enacted in such circumstances.

II. THE CODE'S PROVISIONS

The Air Pollution Control Board was given broad power under the new Code to establish ambient air quality objectives and to promulgate regulations limiting the discharge of airborne pollutants. It was empowered to establish air quality objectives for designated areas of the City, and to enforce them by promulgating its own land use restrictions (even preventing usages otherwise allowed by the zoning board), by banning some types of enterprise from the City entirely, and by restricting motor vehicle traffic in certain areas. Most properly, the scope of this authority was given broad interpretation by the APCB, as evidenced in its first ten-year plan for air management. The plan set forth an impressive list of regulations, either already adopted or planned for adoption under Code authority. These included emission standards for particulates, sulfur dioxide, asbestos, toxic

20. Id.
21. Id.
22. AIR MANAGEMENT CODE at 1.
24. AIR MANAGEMENT CODE § 3-302.
25. Id. The Board was also required to adopt, within one year, a ten-year air resources management plan, to revise it every two years thereafter, to hold general public hearings once a year, and to classify sources of air pollution as a basis for promulgating its emission control regulations. Id.
29. No regulation was adopted until July 1971, but spraying of asbestos had nevertheless been prohibited. See notes 76–95 and accompanying text infra. [Presently, no spray material containing asbestos as a component part shall
and radioactive contaminants, hydrocarbons, carbon monoxide, odor, and photochemically reactive oxidants, plus an incinerator regulation, a licensing scheme, an air pollution emergency procedure, and a schedule for dealing with the important problem of transportation.

The new Code also endowed the Department of Public Health's Bureau of Air Management Services (AMS) with a number of new tools commensurate with its increased enforcement responsibilities. The enforcement tools included new powers of inspection, increased penalties, authority to issue administrative orders, and power to block the issuance or secure the revocation of certain construction permits issued by the Department of Licenses and Inspection (L&I). The Code also empowered AMS to control L&I's issuance and revocation of operating licenses for equipment creating air pollution, and to secure the sealing of such equipment upon permit or license revocation. Most importantly, any continuing violation of the Code, or regulations issued under it, was declared to constitute a "nuisance per se," and AMS was


33. A proposed Air Management Reg. VI, dealing with odors, was considered and rejected by the APCB in June 1972. Interview with Robert W. King, Assistant Director, AMS Compliance & Enforcement Division, in Philadelphia, Nov. 13, 1972 [hereinafter cited as 1972 King Interview].


35. City of Philadelphia, Air Pollution Control Board, Regulation Relating to Control of Incinerators, Apr. 8, 1969.


38. The plan called for studies, to be completed by July 1971, "documenting the magnitude of the air pollution problem from transportation sources . . . ." Ten Year Plan, supra note 26, at 12. One year later, evaluation of the study data was to be completed, and by July 1973, appropriate regulations were to be adopted. By 1975 the planners euphorically predicted that "automotive pollution will be reduced to acceptable levels." Id.

39. AIR MANAGEMENT CODE § 3-301. The Code actually delegates enforcement powers to the Department of Public Health; for simplicity, we shall refer to the delegation as if it had been made directly to AMS. Id. § 3-301 (11).

40. Id. §§ 3-103(5).

41. Id. §§ 3-305.

42. Id. § 3-303.

43. Id. §§ 3-303(1)(c)-(e). But see id. § 3-306(2)(c)(1).

44. Id. § 3-103(1).
authorized to seek injunctive relief against such a violation without having to prove the existence of any harmful effects on the public.46

Additionally, AMS was given authority to approve or reject proposed schedules for delayed compliance with particular regulations.47 The Bureau of Air Management Services was also directed to establish a City-wide network of monitoring stations48 and to publicize information regarding the quality of the City's air.49 Further, AMS was given the power to declare air pollution warnings, alerts, and emergencies,50 and was specifically required to conduct research on air pollution,51 institute training programs for air pollution control equipment operators,52 and to investigate all complaints of air pollution received from the public.53

III. The First Three Years: The Enforcement Tools in Operational Context

In the first three years of its existence, the 1969 Code has proven to be generally well conceived. The principal enforcement problems have resulted from limitations imposed by state law, the Philadelphia Home Rule Charter, and a failure to insure that the Philadelphia Police Department would assume responsibility for inspection of motor vehicle exhausts. Nevertheless, each of the Code's new enforcement tools, either alone or in combination with others, has proven valuable in controlling particular sources of air pollution. This Article will now focus on the importance of matching particular remedies with particular types of violations.

A. Sulfur Content of Fuels

An exception to the Code's general enabling philosophy is a specific statutory provision directly requiring a three-step reduction in the sulfur content of fuel oil.54 Powers of inspection and the credible threat of substantial penalties have made enforcement of the sulfur provision relatively easy. Hundreds of samples have been taken from the storage

46. Id. § 3-103(2).
47. Id. § 3-301(17).
48. Id. § 3-301(5).
49. Id. § 3-301(21).
50. Id. § 3-301(15).
51. Id. § 3-301(18).
52. Id. § 3-301(19).
53. Id. § 3-301(4).
54. Id. § 3-207. The first stage of reduction, effective May 1, 1970, has apparently resulted in a 40 per cent decrease in sulfur dioxide emissions within the city. 20 AIR POLL. CONTROL ASS'N J. 698 (1970). The average sulfur content of heavy residual fuels has been reduced, from approximately 1.5 to 2.0 per cent in 1966, to a current maximum of 1.0 per cent. Letter from Edward F. Wilson, Assistant Commissioner of Public Health for AMS, to the author, July 13, 1971 [hereinafter cited as Wilson Letter]. See note 59 infra.
tanks and tank trucks of refineries, suppliers, and fuel users in the City. Such sampling is easy, inexpensive, and yields virtually irrefutable evidence when analyzed. Moreover, the Code's penalty provisions are also well adapted to this method of enforcement. Once the discovery of a single supplier or consumer violation has been traced to the original source and then to each supplier and consumer, fines can be levied against all parties. In the case of multiple violations, the total amounts can be quite substantial, since each sale, delivery, or day of use constitutes a separate violation, and each violation can result in a $300 fine or imprisonment for 90 days.

On April 10, 1970, the APCB strengthened the Code's sulfur control provision by adopting a regulation limiting the sulfur content of bituminous and anthracite coal. The first two stages of reduction pursuant to this regulation presented few enforcement problems. Since the regulation makes mere delivery for use in Philadelphia a punishable offense, AMS was able to concentrate enforcement efforts at the source — railroads and ocean freight lines were contacted, informed of the new regulation, and inspected to insure their compliance. Since coal can be easily sampled and analyzed, enforcement has been as easy as enforcement of the fuel oil controls.

For these first two stages, then, the regulatory problems have been similar for coal and oil. The third stage of coal regulation, originally scheduled to become effective October 1, 1972, but later postponed in part until October 1, 1975, is expected to pose a more difficult enforcement problem. Presently, the sulfur content of both anthracite and bituminous coal must not exceed 0.3 per cent by weight.

55. Wilson Letter, supra note 54.
56. Interview with Norman Childs, Executive Director, Delaware Valley Citizens Council for Clean Air, in Philadelphia, July 6, 1971 [hereinafter cited as Childs Interview].
57. Air Management Code § 3-207(1)(a) provides that “[n]o fuel merchant shall . . . sell . . . for use in Philadelphia, and no person shall use commercial fuel oils which contain sulfur in excess of the percentages by weight set forth in [an accompanying] table.” Section 3-103(5) provides penalties for violation of the Code's provisions, and violation of any requirement is considered a separate violation for each day the violation continues. Id. § 3-103(5)(d).
59. On May 1, 1970, the allowable sulfur content of bituminous coal was reduced to 2.0 per cent by weight, and that of anthracite to 0.7 per cent. Id. After July 1, 1971, bituminous coal was not allowed to contain more than 1 per cent sulfur by weight. Id. Levels were further reduced on Oct. 1, 1972. Neither anthracite nor bituminous coal may now contain more than 0.3 per cent sulfur by weight. Id.
60. Id. § III(A).
61. Interview with Robert W. King, Assistant Director, AMS Compliance & Enforcement Division, in Philadelphia, July 18, 1971 [hereinafter cited as 1971 King Interview].
62. Id.
coal of such low sulfur content is presently available, the third stage of sulfur reduction will have the practical effect of eliminating the sale of coal in Philadelphia. At least some of the estimated 30,000 present residential coal users are expected to react to this personal crisis by using private vehicles to import coal from neighboring jurisdictions where no such ban will be in effect. Thus, effective enforcement will require AMS to canvass the city, block-by-block, in search of the remaining coal users and to seal their coal-burning equipment. The powers of investigation, summary prosecution, and sealing of equipment appear to be ideally suited to this enforcement task.

B. Asbestos Fireproofing

In this second context, inspection and the Code's summary penalties have proven almost totally useless; however, power to prevent the issuance of general construction permits has proven to be a very effective enforcement tool.

64. APC Monitor 3 (May 1971). The APC Monitor is a monthly AMS report to the APCB.
65. Id.
66. 1971 King Interview, supra note 61.
67. Id. The Philadelphia Gas Works lists 175,000 domestic non-gas users in the City. Although the gas company has no means of separating oil and electricity users from coal users, it has provided AMS with a list of 30,000 addresses in areas of the City where coal is believed to be the predominant fuel. AMS believes that the majority of coal users are included in this group and, therefore, intends to concentrate its enforcement efforts on these addresses. See APC Monitor 3 (May 1971).
68. AIR MANAGEMENT CODE § 3-301(4).
69. Id. § 3-301(3).
70. Id. § 3-103(1).
71. This entire scenario illustrates an important limitation on the delegation of power to apolitical bodies to adopt air pollution regulations. Whatever its intentions, the APCB has no means for alleviating the hardship which its coal regulations will impose on many of the City's poorer residents who heat their modest homes with coal. Unlike a city council or legislature, the APCB has no power to create a loan program, grant conversion subsidies, or even offer tax relief to home owners who must make the costly switch from coal to gas or oil furnaces. It should be noted, however, that the most recent amendments to the regulations postpone such hardship:

Anthracite Coal used for heating purposes at the time of adoption of this Regulation in buildings used exclusively for dwelling purposes and containing fewer than three (3) dwelling units . . . shall not exceed 0.7 per cent by weight after May 1, 1970, and 0.3 per cent by weight after October 1, 1975. No new coal burning facilities shall be installed after the adoption of this regulation that do not comply with [the more strict requirement as of October 1, 1972, set forth above].

72. AIR MANAGEMENT CODE § 3-303. The Dept of Licenses and Inspections (L & I) is charged with the duty:

'[T]o transmit to the Department of Public Health for its recommendation all applications, plans, and specifications for the construction, reconstruction, conversion, or alteration of any installation, equipment, or appurtenances and any equipment pertaining thereto that may produce air pollutions [sic] or an air pollution nuisance . . .

Id. § 3-303(1)(a). L & I also has the authority "to issue permits for applications which have been approved by the Department of Health," id. § 3-303(1)(b), thus
The extremely hazardous and toxic qualities of the familiar mineral, asbestos, have only recently become apparent. The mineral has been identified as a carcinogen, the inhalation of which also correlates positively with the incidence of virtually all respiratory diseases. In October 1969, AMS learned that asbestos was commonly being sprayed on high-rise construction sites by Philadelphia building contractors with almost no concern for public or worker safety. One particularly dangerous operation involved the construction of a downtown skyscraper from which particles of asbestos fell like snow intermittently for many months.

On November 5, 1969, AMS ruled that use of an asbestos spraying machine required an air management permit. By the spring of 1970, only one permit had been issued and it required total containment clearly implying that no authority exists for L & I to issue permits for applications that are not approved by AMS. This inference is strengthened by L & I’s duty:

[T]o revoke permits and licenses upon certification by the Department of Health that the installation or operation does not comply with the provisions of the application, that [it] produces air pollution or emissions of air contaminants in excess of the standards established by [the Code] and ... regulations, that orders for correction or abatement have not been effected, or that the installation or operation does not comply with [the Code] and the regulations.

Id. § 3-303(1)(e).


74. Unless otherwise indicated, the primary source of information for this section has been the prosecution files of AMS, which were on file with Levy Anderson, the Philadelphia City Solicitor during the summer of 1971. Information has also been gleaned from numerous unpublished and unpaginated memoranda, reports, and papers.

75. AMS inspectors wrote violations against the contractors for the Central Penn National Bank Building, 5 Penn Center, Philadelphia, on Sept. 8, 9, 16, 22 & 24, 1969. See note 74 supra.

76. This “ruling” was apparently never formally promulgated. Rather, AMS personnel simply began to inform contractors that permits were required. The Code offers some support for this “ruling:”

No person shall build, erect, install, alter, or replace any article, machine, equipment device, or other contrivance or appurtenances, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce or control the issuance of air contaminants, until an air management permit has been obtained for such installation and construction.

AIR MANAGEMENT CODE § 3-306(1)(a) (emphasis added).

More drastic action might have been taken. In particular, AMS might have sought to enjoin the spraying on the basis that it violated the prohibition against “the escape of air contaminants to the atmosphere ... which result in or cause air pollution ...” Id. § 3-201(a)(3). The Code defines “air pollution” as:

The presence in the atmosphere of one or more air contaminants or combinations thereof in such quantities and of such duration that they are or may tend to be injurious to human, plant, or animal life, or property, or that interfere with the comfortable enjoyment of life or property or the conduct of business or other human activities.

Id. § 3-102(4).

An additional alternative strategy might have employed the regulation which prohibits “discharge into the atmosphere [of] any toxic ... air contaminant . . . .” City of Philadelphia, Air Pollution Control Board, Air Management Reg. II, § III, Apr. 10, 1970.
of the asbestos on the construction premises, with no visible emissions of the toxic mineral allowed. However, such permit terms were wholly unrealistic, and multiple violations occurred. The contractor, the Venzie Corporation, repeatedly claimed that particular violations were the result of uncontrollable factors, such as bad weather or employee carelessness, and clearly was not deterred by the threat of a few $300 fines. Moreover, AMS did not think it appropriate to resort to summary prosecution, since the fines were so clearly trivial in comparison to the grave and immediate hazard to public health and safety posed by the continued spraying.

AMS turned instead, therefore, to its more powerful remedy—a suit for injunction. In March 1970, a suit was filed against the contractor, alleging violation of the terms of its asbestos spraying permit. On April 2, the general contractor agreed to a stipulation, approved by the court of common pleas, providing for particular housekeeping and containment procedures; but as early as April 30, an AMS inspector, who will remain anonymous, noted that the terms of the stipulation were being violated. A number of additional violations were observed throughout May and June, and AMS began to consider re-opening the case.

A dramatic development occurred to radically alter the situation when, on June 22, Philadelphia’s District Attorney secured an indictment of the contractor on a criminal nuisance theory and proceeded to try the case personally at a preliminary hearing on July 1. All work stopped on the construction site the day the indictment was announced, and local newspapers gave the story front page headlines. However, the ultimate outcome was no more satisfactory than the result of AMS’ earlier enforcement efforts. On July 21, the defendant

77. See note 74 supra.
78. Id.
79. Air Management Code § 3-103(2) (b).
83. At the hearing, police detectives testified to observations made June 18 and 19. A medical expert testified to observation of the same conditions on June 22 and to the health hazard involved. Judge Dandridge of the Philadelphia Municipal Court then ruled that a prima facie case existed and that the action should be brought to trial. The firm’s counsel waived a grand jury hearing in order to expedite disposition of the case. This information is based on contemporaneous memoranda of AMS personnel, since no official record of the proceedings was transcribed.
84. See, e.g., Evening Bulletin (Phila.), June 22, 1970, at 1, col. 3. The initial reaction to the District Attorney’s intervention resulted primarily from his personal handling of the case which served to make the threat of criminal imprisonment at least mildly credible. But see Kovel, A Case for Civil Penalties: Air Pollution Control, 46 J. Urban L. 153 (1969).
was allowed to plead nolo contendere to the criminal indictment, and the court ordered the firm to pay a penalty of $750 and to abide by a slightly altered version of the April 2 stipulation. 85

The Venzie case was mooted shortly thereafter when construction of the building was completed, but a second and similar case, City v. Frank H. Wilson Co., 86 arose at about the same time, involving the spraying of asbestos, without a permit, at the construction site of the Martin Luther King High School. Moving quickly, AMS requested the Philadelphia Law Department to seek an ex parte preliminary injunction to halt spraying operations at the new site. By August 10, 1970, a consent decree was obtained, requiring the contractor to apply for a permit. 87 When the contractor, nevertheless, continued to spray asbestos, AMS petitioned the court to prohibit all asbestos spraying and related operations because of violation of the August 10 decree. The court, however, chose instead to appoint a Master to oversee spraying operations. 88

This decision was not only a rebuff 89 to AMS; it was a reversion to the common law nuisance concept of balancing the rights of the polluter against those of the public — an approach plainly inconsistent with the Code's affirmation that "no one has any right to discharge air contaminants to the atmosphere . . . ." 90 Nevertheless, AMS did not attempt to appeal the ruling, but instead vigorously reported violations of AMS permit conditions to the Master. 91 The Master, a medical doctor, had the power to halt construction operations entirely, but never did so despite her finding that violations were indeed occurring. 92 Instead, she concluded: that the decree's requirement of "100% containment" was unrealistic; that "if the building was to be completed

85. Additional conditions included a set of specific rules for housekeeping and disposal, requiring, for example, that asbestos be vacuumed up immediately after each application rather than merely when each floor was completed and that no worker be permitted to leave for the day before all asbestos had been cleaned up. City v. Venzie Corp., No. 4158 (C.P. Phila., filed July 21, 1970).
89. Adding insult to injury, the court ordered AMS to pay half the fee of the court-appointed Master. City v. Frank H. Wilson Co., No. 4476 (C.P. Phila., order of Sept. 23, 1970).
90. AIR MANAGEMENT CODE § 3–101(1)(c).
91. Violations were found on Aug. 21, 24–28 & 31, and on Sept. 4, 8, 9, 25 & 28. The Master was notified by William Reilly, Director, AMS Compliance & Enforcement Division, on Aug. 25, 27 & 31, Sept. 10, and Oct. 1, 1970. Sturgis Interview, supra note 88.
92. Id.
they would have to go ahead and spray;' and that the only practical alternatives were to ignore the danger or else ban the use of asbestos entirely — an action which she was unwilling to take. However, the work was completed by October, thus making further proceedings moot.

With extraordinary ingenuity, AMS temporarily solved the problem of judicial refusal to enjoin asbestos spraying absolutely by the simple maneuver of refusing to approve construction permit applications forwarded for approval or disapproval by the Department of Licenses and Inspections, whenever the applicants proposed to spray asbestos fireproofing. Whether this practice would have been upheld on judicial review is unclear. Before the question arose, however, the Department of Public Health adopted a regulation which absolutely banned the spraying of asbestos within Philadelphia. Moreover, a substitute for asbestos spray fireproofing has recently been discovered.

Assuming the validity of the AMS power to block construction permits, the asbestos cases demonstrate the unique efficacy of that power in a context in which summary fines, injunctions, and even dramatic criminal prosecutions were of little utility. Nevertheless, judicial hesitancy to order immediate shut-downs of dangerous commercial polluters remains a substantial problem. In May 1971, for example, AMS filed a request for a preliminary injunction in the Philadelphia Court of Common Pleas, urging immediate restraint of a firm which allegedly was emitting, at intermittent intervals, large quantities of highly toxic chlorine gas into the air. The seriousness of the allegation is apparent: chlorine gas had been used during World War I as a lethal agent and had been subsequently banned by the Geneva Convention. Despite the urgency of the problem, however, the court took under advisement the request for a preliminary injunction and failed to rule on it for two months. Fortunately, however, the

93. Id.
94. Interview with Frederick Voigt, Assistant City Solicitor, in Philadelphia, June 30, 1971 [hereinafter cited as Voigt Interview]; 1971 King Interview, supra note 61. See AIR MANAGEMENT CODE § 3-301(9).
95. The Department of Health has apparently been granted the power to block construction permits in some instances. See note 72 supra.
96. See note 29 supra. It was felt that a Department of Public Health regulation was more appropriate than an APCB regulation because matters of occupational health, as well as ambient air quality, were involved.
97. 1971 King Interview, supra note 61.
pendency of the action did put sufficient pressure on the firm to cause it to take necessary remedial measures, so that the court's intervention ultimately became unnecessary.\textsuperscript{109}

C. Incinerators

1. Private

In a third context, powers of inspection, licensing, summary prosecution, and sealing of equipment have been effectively used in combination.

A regulation applying to small incinerators\textsuperscript{101} was promulgated in the spring of 1969 pursuant to the Air Pollution Control Ordinance of March 9, 1954\textsuperscript{102} (apparently in anticipation of the 1969 Air Management Code's adoption a few months later). During the months immediately preceding the May 19, 1971 deadline for compliance with this regulation, AMS made a vigorous effort to insure general compliance.\textsuperscript{103}

As a result of inspections, education, and credible threats of daily $300 fines for continued operation of nonconforming units after the deadline, no fewer than 931 incinerators were closed down or sealed before May 19, 1971, and 272 of those remaining in operation were known to be equipped with the necessary controls to meet the regulation's requirements.\textsuperscript{104} Only 291 units were in violation; of these, 168 were privately owned, and AMS announced its intention to write notices of violation each day, and to refer all such violations for summary prosecution until the units were either shut down or properly controlled.\textsuperscript{105} By September 1971, 25 of these incinerators had been upgraded and all of the others, plus 94 not found earlier, had been

\textsuperscript{109} 1971 King Interview, supra note 61.

\textsuperscript{101} City of Philadelphia, Air Pollution Control Board, Regulation Relating to Control of Incinerators, \textit{as amended}, Apr. 8, 1969. Large incinerators, with changing rates between 500 and 10,000 pounds per hour, were required to conform to the regulation a year earlier, on May 19, 1970. \textit{Id.} § 5A(d-1)(e). Incinerators with changing rates in excess of 10,000 pounds per hour were given until May 19, 1973, to comply. \textit{Id.} § 5A(d-1)(g). Since virtually the only incinerators of this size were operated by the City itself, this provision understandably has been rather cynically regarded as allowing the City to delay for five years, while all other operators were required to comply in one or two. This impression has hardly been dispelled by a recent AMS report which notes that "a bond issue \textit{is} to be included in the 1973 Capital Budget for $25,000,000. Due to the complexity of the proposed installation, completion is not expected until January 1976." City of Philadelphia, Dept of Public Health, Bureau of Air Management Services, 15 Major Air Pollution Problems: Status Reports, Oct. 28, 1971 [hereinafter cited as Major Pollution Problems].

\textsuperscript{102} See note 7 and accompanying text supra.


\textsuperscript{104} \textit{Id.}

\textsuperscript{105} \textit{Id.}
shut down. By mid-1972, a total of 7200 incinerators had been licensed, and all known private incinerators were in compliance.\textsuperscript{106}

2. Public

The enforcement strategy against small incinerators was not applied, however, to units operated by the Philadelphia School District and the Philadelphia Housing Authority because AMS personnel recognized that the strategy was unlikely to yield the desired results against such polluters.\textsuperscript{107} Assuming that AMS had legal standing to enforce a City ordinance against these agencies, and assuming further that the ordinance applied to their actions and was not susceptible to the defense of sovereign immunity — all interesting questions, the strategy nevertheless would have had severe practical limitations if applied to these institutions. The publicity aspect of summary fines was likely to backfire, particularly with respect to the School District, a tax-supported operation perennially short of funds. Sealing of equipment was equally impracticable; indeed, sealing of incinerators in high-rise public housing projects could have lead to rapid accumulation of trash and garbage which would have posed an equally great threat to health.

AMS therefore did not attempt to use these weapons against the School District or the Housing Authority, but instead embarked upon a vigorous campaign of rational persuasion, buttressed by political pressure. Facilities were aggressively inspected, letters were written, and school board members were invited to discuss the situation directly with the highest AMS officials.\textsuperscript{108}

The results of this effort were somewhat less impressive than those of the more direct strategy aimed at private incinerators, but they were, nevertheless, substantial. Even though neither the School District nor the Housing Authority met the May 19 deadline,\textsuperscript{109} both agencies did submit plans for delayed compliance,\textsuperscript{110} and both eventually met these schedules as agreed.\textsuperscript{111}

Thus, in the context of incinerator regulation, the enforcement powers of inspection, licensing, sealing of unlicensed equipment, and


\textsuperscript{107} 1971 King Interview, supra note 61.

\textsuperscript{108} AMS reported in May 1971 that "members of AMS met with School Board representatives to impress upon them that the School Board, like all other incinerator operators, must meet the requirements of the Incinerator Regulations . . . [or] be shut down by the end of May . . . ." APC Monitor 2 (May 1971).

\textsuperscript{109} 1971 Annual Report, supra note 103, at 4-5.

\textsuperscript{110} Id.

\textsuperscript{111} 1972 King Interview, supra note 33.
summary prosecution have been effective against most privately owned units, but not against those which are publicly owned.

D. The "Top 15"

The full panoply of AMS enforcement powers has been applied against Philadelphia's fifteen major air polluters with varying degrees of success. These fifteen prominent polluters were somewhat arbitrarily identified by AMS as the primary focus of its regulatory efforts shortly after the 1969 Code was adopted.

1. Image-conscious Corporations

Among the top seven polluters, four are enormous private corporations with substantial involvement in consumer marketing, and a

112. The original "Top 15" were:
1. Philadelphia Electric Company
2. Atlantic Refinery
3. Gulf Refinery
4. City of Philadelphia (6 incinerators & sewage treatment)
5. Allied Chemical Corporation
6. Philadelphia Coke Company
7. Rohm & Haas Company
8. George Sall Metals Company
9. Franklin Smelting Company
10. Enterprise Rendering Company
11. Grey Iron Foundry Industry (6 plants)
12. National Lead Company
13. Celotex Corporation
14. General Smelting Company
15. ESB Incorporated (smelting)


By October 1970, Enterprise Rendering and General Smelting had ceased all operations in Philadelphia, and ESB Smelting had ceased lead smelting operations. The "Rendering Industry" (6 plants), the federal government, and Crown Cork & Seal Company were substituted respectively for positions 10, 14, and 15 on the revised list. Major Pollution Problems, supra note 101.

Identification posed a problem because there were no current inventory sources of existing polluters. AMS was forced to rely partly on a 1966 emission inventory and partly on the volume of complaints received from the public against particular firms. City personnel, who prefer to remain anonymous, report that at least a few of the choices were ultimately made on an arbitrary basis. Nevertheless, the listing is generally accepted as being substantially correct.

114. The decision to make such a list public was a bold innovation among air pollution control agencies, since similar lists utilized elsewhere had proved to be "political dynamite." Interview with Edward F. Wilson, Assistant Commissioner of Public Health for AMS, in Philadelphia, Feb. 18, 1972 [hereinafter cited as Wilson Interview].

Before the Code was adopted, emissions by most of these major polluters were within the prescribed limits; regulations adopted pursuant to the 1954 Air Pollution Control Ordinance applied only to such nuisance-type emissions as open burning (which remained lawful under certain conditions), sand blasting, laundry lint filters, rendering plant odors, paint spraying, nighttime operation of incinerators, and dense smokestack emissions. See City of Philadelphia, Air Pollution Control Board, Regulations, revised, July 27, 1966.

The 1969 Code changed the situation fundamentally by adopting the philosophy that "elimination of air contaminants is essential . . . for sustaining life in an urban area" and by providing means to reach this goal. AIR MANAGEMENT CODE § 3-101(1)(d).
fifth is a large public utility, also heavily dependent on public goodwill. Against these five, a “carrot and stick” enforcement strategy was remarkably effective. The stick consisted primarily of publicity and the threat of publicity; the carrot was the willingness of AMS to work realistically with polluters toward adoption of reasonable schedules for delayed compliance, involving step-by-step deadlines flexible enough to allow for unforeseen problems. Moreover, it was AMS policy not to prosecute for emissions which the polluter had agreed to correct in accordance with an accepted compliance schedule, provided the deadlines were being met. By the fall of 1971, Philadelphia Electric Company, the number one polluter, had reduced its 1969 sulfur dioxide emissions by 61 per cent and its 1969 particulate emissions by 86 per cent, and was in full compliance with all AMS regulations. AMS had accepted schedules for delayed compliance, calling for substantial expenditures, from Atlantic Richfield Corporation and Gulf Oil Corporation. Rohm & Haas Company had converted its power plant operations from coal to low sulfur oil, had reduced sulfuric acid production, and had undertaken engineering studies to evaluate the company’s status with reference to a proposed hydrocarbon regulation. Allied Chemical Corporation had made major process changes, including the discontinuance of certain products, and was actively studying other complex, noxious odor problems. Public complaints against the firm fell from 91 in 1970 to 32 in 1971, and violations fell from twenty to four.

City personnel believed the major ingredient in these enforcement successes was the publicity and nuisance value of summary prosecutions. They stressed that, unlike other forms of legal action which can be protracted beyond comprehension by procedural objections, discovery techniques, and the like, a summons to Philadelphia Municipal Court had to be answered directly, and there was almost no docket delay. Moreover, unlike an injunctive proceeding in which a firm is ordered to make improvements, a summary conviction would result in the firm’s unambiguous branding as an evil-doer. Both publicity potential and nuisance value were enhanced when an officer or supervisory employee was personally named, along with his firm, in the

118. Major Pollution Problems, supra note 101.
119. Id.
120. Voigt Interview, supra note 94; 1971 King Interview, supra note 61.
complaint. Such persons had a tendency to appear in court with a num-
ber of their subordinates and two or three experienced attorneys.121

2. *Image-indifferent Corporations*

In the case of firms less dependent upon public goodwill, publicity
alone clearly was inadequate to secure compliance. In such cases,
AMS found summary proceedings useful only for their nuisance value
and supplemented them with administrative orders and suits for in-
junctive relief. In four cases, firms were forced to shut down their
operations for various reasons and the inability to withstand this
combination of AMS pressure played a significant role in the cessation
of their operations.122 In many of the remaining cases, compliance was
partly or totally secured after an administrative order had been issued
or after an injunction had been sought, or both. With a number of
polluters, the final outcome remains in doubt, since several orders have
been appealed to the L&I Review Board; in other cases, injunctions
and negotiations conducted under the shadow of injunctive relief are
presently pending.123 Moreover, AMS has apparently deferred serious
enforcement efforts in some cases, pending final adoption of APCB
regulations controlling odors.124

The difficulties experienced by AMS in enforcing the 1969 Code
against image-indifferent and non-consumer-oriented violators are well
illustrated by the case of an automobile wrecking yard which was
finally brought into compliance only after a vigorous enforcement
effort requiring a period of more than two years.

The Bailis Scrap Iron Company was a comparatively easy target
for enforcement efforts. Its incinerator (a metal box large enough to
hold two junk automobile bodies, stacked one atop the other, and used
for burning out their upholstery) was in outrageous disrepair, and
as a result, the company apparently violated AMS regulations almost
every time it used the facility. The firm came to AMS' attention in
1968 when several complaints were received from neighboring resi-
dents; despite vigorous enforcement efforts, however, little could be
accomplished until the Air Management Code was adopted. To secure
the proper upgrading of the scrap yard's decrepit incinerator, AMS
utilized a strategy of persuasion or, if necessary, summary prosecution.
The persuasion phase lasted for several months, during which time

121. 1971 King Interview, *infra* note 61.
122. In addition to the three firms mentioned previously (*see* note 112 *infra*),
a fourth, Schneider-Bowman Company, ceased operating its gray iron cupola in
123. 1972 King Interview, *infra* note 33.
124. *Id.*
several office conferences were held, numerous inspection visits were made, and letters were exchanged. These tactics caused the scrap yard's owner to abandon his contention that each violation was a unique and explainable incident, requiring no substantial changes in future behavior nor more than minor repairs. However, he merely abandoned this first position in favor of a strategy of delay. Agreeing that basic repairs might be necessary, he, nevertheless, said that he would have to study the situation carefully before committing his firm to any major expenditures.

The second phase of AMS enforcement efforts was designed to make delay more costly. The agency began referring violation notices for summary prosecution. This strategy, however, proved wholly ineffective. Months went by and fines were levied, but Bailis made no effort to repair its incinerator.

Finally, the enforcement agency escalated its enforcement campaign to the ultimate level, and sought an injunction. This third phase, of course, had an immediate effect. The firm began extensive repairs ten days after the complaint was signed, and by the time of the hearing on the complaint, the defendant had agreed to a consent order incorporating every provision sought by AMS.

The important factor in this case, however, is not that the injunction worked, but that summary prosecution did not. Many future cases will present far more complex situations in which an injunction may be inappropriate. Injunctions are not well-suited to serve as the everyday "popgun" of the enforcement arsenal. They require too much effort and expense and are too dangerous, since the court may order a remedy which allows the defendant to continue polluting while immunizing him from other enforcement action. If the fines imposed on Bailis had negligible effect on this relatively small firm, it seems unlikely that the same strategy will be any more effective on larger firms, for which the same fines would represent an even smaller percentage of the cost of the required improvements.

3. Government-operated Installations

A third group of major polluters consisted of installations operated by the City and the federal government. These included refuse incinerators, sewage treatment plants, and a naval firefighting school which periodically burned substantial quantities of oil in the open air. Against the City installations, in particular, AMS efforts to secure

emission reductions through persuasion made only modest headway. Unfortunately, no other enforcement tools appeared available against public polluters.\textsuperscript{127}

\section*{E. Motor Vehicles}

In a fifth enforcement context, the enforcement powers of inspection and summary prosecution have been rendered ineffective by inappropriate delegation.

In 1956, the APCB adopted a regulation,\textsuperscript{128} which continued in force under the new Code\textsuperscript{129} and which prohibited visible emissions from motor vehicles.\textsuperscript{130} Before the 1969 Code was adopted, AMS had attempted to enforce the vehicular emissions regulation in a curious and cumbersome fashion.\textsuperscript{131} City policemen had been authorized to stop smoky vehicles and issue their operators “citations,” copies of which were then forwarded to AMS. The air pollution control unit then obtained the addresses of the owners of the vehicles and sent out “notices of violation.”\textsuperscript{132} Each notice letter demanded that the owner repair his vehicle and inform AMS as soon as the repair was completed; summary legal action was threatened in the event that the owner failed to reply.\textsuperscript{133} Due to lack of manpower and the low priority accorded this effort, however, no further action was ever taken on these cases.\textsuperscript{134}

\begin{itemize}
  \item \textsuperscript{127} See notes 151–58 and accompanying text \textit{infra}.
  \item \textsuperscript{128} City of Philadelphia, Air Pollution Control Board, Regulations Relating to Motor Vehicles, July 27, 1966. New regulations have recently been enacted. City of Philadelphia, Air Pollution Control Board, Air Management Reg. IX, July 18, 1972. \textit{See note 142 infra}.
  \item \textsuperscript{129} City of Philadelphia, Air Pollution Control Board, Air Management Reg. I, § VI, Apr. 10, 1970, provides that “[a]ll existing regulations of the Air Pollution Control Board not in conflict with these regulations shall remain in force.” The only possible conflict is with Air Management Regulation II, which generally limits emissions from any source. City of Philadelphia, Air Pollution Control Board, Air Management Reg. II, § I, Apr. 10, 1970.
  \item \textsuperscript{130} The regulation provided:
    \begin{itemize}
      \item No motor vehicle shall emit visible fumes, gases, mists, smokes, or vapors, other than water in any form
      \item (a) while stationary, or
      \item (b) while in motion, except for the first one hundred yards after starting.
    \end{itemize}
    Persons maintaining or operating motor vehicles for commercial purposes shall conduct periodic visual and odor tests of the motor exhaust both in the shop and on the street. Motors shall be maintained in such manner and drivers so instructed and trained in operating techniques that air pollution from the motors is minimized.
  \item \textsuperscript{131} 1971 King Interview, \textit{supra} note 61. \textit{See Air Pollution Control Progress} 1-2 (Feb. 1968).
  \item \textsuperscript{132} More than 25,000 of these letters were sent during the seven-year period from 1961 to 1968, an average of 300 per month. \textit{Air Pollution Control Progress} 1-2 (Feb. 1968).
  \item \textsuperscript{133} This was actually an empty threat since no penalties were provided for violation of the 1954 Code. The City’s only alternative would have been a suit for injunction to restrain a continuing violation. \textit{Philadelphia, Pa., Code} § 3–103 (1954).
  \item \textsuperscript{134} Wilson Interview, \textit{supra} note 114.
\end{itemize}
Notwithstanding the lack of follow-up, the enforcement system did result in the repair of several hundred vehicles each year.\textsuperscript{135} Perhaps more importantly, it demonstrated the willingness and ability of the Philadelphia police to enforce air pollution regulations against motor vehicles. In one month of particularly vigorous enforcement, the police wrote more than 1600 citations.\textsuperscript{136}

About the time of the Code's adoption, AMS quietly abandoned its attempts to enforce the vehicular emissions regulation in the belief that its cumbersome enforcement method was simply too ineffective to be worth the effort. Undoubtedly, the bureau also found embarrassing the data generated by the system, since it appeared to show that the program was a failure.\textsuperscript{137}

After lengthy consideration, AMS selected a more direct method of enforcing the regulation, which, though likely to be even less effective, promised at least to yield better statistics and avoided the bureaucratically unpleasant prospect of giving up an area of enforcement responsibility. The new method involved the assignment of AMS inspectors to work in teams with policemen.\textsuperscript{138} The policeman in each case stopped the offending vehicle; the AMS inspector took Polaroid photographs of the emission and wrote the violation notice. The inspector later assisted in prosecuting the case in municipal court.

The difficulty with this system was that the modest number of AMS inspectors available for the task could not possibly have discovered more than a negligible fraction of existing violations.\textsuperscript{139} Moreover, unlike most other air pollution enforcement tasks, identification of "visible emissions" required no particular expertise; assignment of highly qualified, specialized personnel to this task seems both unnecessary and wasteful.

AMS personnel argued, however, that any attempt to delegate this entire enforcement responsibility to the police department would have encountered two obstacles. First, the legality of such a delegation was questioned. Second, AMS feared that policemen would not be reliable as witnesses, and therefore, summary prosecution cases

\textsuperscript{135} In the typical month of September 1966, 247 vehicles were cited, 142 letters were sent out by AMS, and 88 motorists reported that they had repaired their vehicles. During 1968, there were 7713 citations, and 1978 motorists claimed repairs. For 1969, 6098 citations were issued, and 1027 repairs were claimed. This data is filed with the City of Philadelphia, Dep't of Public Health, AMS Compliance & Enforcement Division.

\textsuperscript{136} AIR POLLUTION CONTROL PROGRESS 2 (Feb. 1968).

\textsuperscript{137} Typically, a very high percentage of responses was received early in the year, but increasingly few responses were received as each year went on, so that by the end of the year, the percentage of repairs made was only about ten per cent of the letters sent out. APC MONITOR (Jan. 1968 through Dec. 1969).

\textsuperscript{138} Evening Bulletin (Phila.), Aug. 12, 1971, at 4, col. 3.

\textsuperscript{139} 1971 King Interview, supra note 61.
would be lost and the Bureau's continuing effort to secure judicial cooperation would be undermined. The second of these considerations is difficult to evaluate, but there are reasons to doubt that the feared results would occur. The first alleged obstacle appears to be little more than a makeweight.

A more serious objection made by AMS was that even if the present visible emission regulation could be enforced more appropriately by police, future motor vehicle regulations are likely to be more sophisticated and expert enforcement is more likely to be needed. In the event of such a development, it is difficult to see what would prevent AMS from re-assuming all or part of the enforcement responsibility at that time. It is suggested that the agency's fears are more illusory than real.

140. Prosecutions could be handled in a manner analogous to the practice in Philadelphia Traffic Court, where summary proceedings on the basis of affidavits are common practice; policemen would appear as witnesses in cases which are appealed and in which a trial de novo is required. In the vast majority of traffic cases, the defendant loses and no appeal is taken. Experience of the Philadelphia Traffic Court, which relies almost entirely on police witnesses, indicates that unavailability of policemen and inadequacy of police testimony account for far fewer prosecutorial failures than might be expected. Interview with John Patrick Walsh, President Judge, Philadelphia Traffic Court, in Philadelphia, Oct. 16, 1972. During the 1972 fiscal year, a total of 245 visible exhaust emission cases were prosecuted in Philadelphia Municipal Court, with 207 cases resulting in the party being found guilty. A total of $7220 in fines, plus $1333 in costs, or an average total of $41 per violator, was assessed. 1972 Annual Report, supra note 106, at 18.

141. The intention of City Council is clearly that “all City of Philadelphia agencies shall cooperate in the implementation of this Title.” AIR MANAGEMENT CODE § 3-101(3)(a). Moreover, the Philadelphia Police Department is authorized to enforce all City ordinances, the scope of which would include the Air Management Code. HOME RULE CHARTER § 5-201.

142. The most recent regulation relating to control of visible emissions from mobile sources provides:

A. No person shall permit, cause, suffer, or allow the discharge into the atmosphere of a visible emission of air contaminants except uncombined water from a gasoline powered motor vehicle at any time, except for three (3) consecutive seconds after starting the engine.

D. No person shall permit, cause, suffer, or allow the discharge into the atmosphere of a visible emission of air contaminants except uncombined water in excess of 20 percent opacity from a motor vehicle at any time.

E. Persons certified by the Department may make observations to determine compliance with . . . Part D of this Regulation without direct reference to standards.


143. The Code itself explicitly provides that “[t]he Department of Public Health — AMS shall be responsible for the administration and enforcement of this Title and all regulations adopted hereunder.” AIR MANAGEMENT CODE § 3-103(3). It seems, therefore, that AMS could not irrevocably delegate this duty even if it wanted to. So long as AMS maintains reasonable supervision, there is nothing to suggest that it could not allow another department to assist with the enforcement of particular regulations. Indeed, the Code’s intent plainly is that all departments shall assist to the degree requested. Id. § 3-103(3)(a). See note 141 supra.

144. Indeed, in recent months, after preliminary drafts of this article were circulated, the agency’s attitude has begun to change. In June 1972, AMS announced that it was “exploring the possibility of turning the entire operation over to the Police Department.” 1972 Annual Report, supra note 106, at 18.
IV. ANALYSIS OF ENFORCEMENT PROBLEMS

A. Governmental Immunity

We have noted that the Philadelphia School District, the Philadelphia Housing Authority, and the local United States Naval Base have been slow to comply with particular AMS regulations. To this list, the Philadelphia Water Department and the Southeastern Pennsylvania Transportation Authority (SEPTA) could also be added.

The failure of such public polluters to limit their emissions jeopardizes the City's air management program in two ways. Not only is there a direct and substantial deleterious effect on the quality of the air, but when the City attempts to prosecute a polluter for an offense of which the City itself or another public polluter is also guilty, the support of the public and the judiciary for effective compliance and enforcement is seriously undermined.

Perhaps with these factors in mind, City Council, in adopting the Code, declared its intent to be that:

(a) all City of Philadelphia agencies shall cooperate in the implementation of this Title;

(b) wherever permitted by law, the provisions of this Title shall apply to all governmental jurisdictions and their agencies in the operation of facilities located within the City of Philadelphia;

(c) the Department of Public Health of the City of Philadelphia shall cooperate with other governmental jurisdictions in the control and elimination of air pollution.

145. See notes 107-11 & 127 and accompanying text supra.

146. The Water Department’s program for abatement of offensive odor emissions from the City’s three sewage treatment plants consisted of a few temporary measures and a promise to develop comprehensive control plans in the distant future. Such plans “are to be developed in conjunction with projected plant expansion programs... scheduled [for] 1975... and 1976... and... 1977.” Major Pollution Problems, supra note 101, at 5.

147. SEPTA was the subject of a criminal complaint filed on October 7, 1971. As of that date, AMS files contained 80 violations by SEPTA, and the latter had failed to submit an improvement plan satisfactory to AMS. The Philadelphia District Attorney indicated that the main objective of the court action was “to obtain a court-ordered abatement program from SEPTA, setting down specific remedies to the problem.” Phila. Inquirer, Oct. 8, 1971, at 25, col. 8. Again, as in the asbestos case, suit was grounded on a criminal nuisance theory. See note 82 and accompanying text supra.

148. Philadelphia’s municipal refuse incinerators alone are estimated to emit 2.3 tons of sulfur dioxide, 16.5 tons of particulates, 3.0 tons of nitric oxide, 31.4 tons of organic compounds, and 53.0 tons of carbon monoxide into the City’s air each day. This data, compiled in 1966, is filed with the City of Philadelphia, Dep’t of Health, AMS Laboratory.

149. A Philadelphia prosecutor reports that defendants in numerous summary prosecutions have raised the example of City incinertors as relevant in mitigation of their own penalties and even as a defense, and that at least one judge has been persuaded, in light of the City’s “hypocrisy,” to dismiss entirely actions against such private polluters. Voigt Interview, supra note 94.

150. AIR MANAGEMENT CODE § 3-101(3).
Unfortunately, these well-intended provisions do little to solve the problems which they identify. Similarly, it is not likely that solutions will be found in future ordinances, since the problems are largely beyond the jurisdiction of City Council.

Three classes of public polluters may be distinguished, each of which presents its own difficulties. Governmental units, such as federal installations and school districts, form a class which is most clearly immune from AMS regulatory authority. Fortunately, however, the President has ordered all federal government installations to comply with pollution laws applicable to the jurisdictions of their situs. In the event that local federal installations fail to comply with this order, however, it is unclear whether AMS has standing to complain. In the face of state and school district violations, AMS can do little more than attempt to persuade the officials involved or to threaten them with adverse publicity. Surprisingly, this combination of tactics appears thus far to have had a strong impact on the members of the Board of the Philadelphia School District, who, despite continuing financial difficulties, have now complied with all applicable regulations. Since the School District's compliance was belated, however, it is clear that such tactics are generally less effective than the strategy applied to similarly-situated private polluters.

A second class of public polluters consists of authorities chartered by the state to perform various public functions within the City of Philadelphia. These include the Philadelphia Housing Authority and SEPTA. To the degree that each of these authorities performs bona fide public, quasi-governmental functions, they would appear to be immune to civil tort suit as well as to criminal liability. Such authorities are almost certainly immune to summary prosecution, and it is

151. Since the Code defines air pollution to be a nuisance, violation of the Code may amount to a tort, but even so, the principle of sovereign immunity would seem to apply. A school district may not be sued without its own or the legislature's statutory consent. In re Sykesville Borough, 91 Pa. Super. 335 (1927). Moreover, it is generally not liable for its torts. Michael v. Lancaster School Dist., 391 Pa. 209, 137 A.2d 456 (1958).

152. Exec. Order No. 11507, 3 C.F.R. 889 (Supp. 1972). Compliance with these requirements at existing federal facilities is to be "completed or underway by December 31, 1972." Id. § 5, at 891.

153. Federal facilities are required to abide by emission standards duly adopted pursuant to the Clean Air Act, as amended, or "more stringent requirements" where "deemed advisable" by "the respective Secretary, in consultation with appropriate Federal, State, interstate and local agencies . . . ." Id. §§ 4(a)(1), 4(b), at 890-91.

154. Wilson Interview, supra note 114.

155. A housing authority, which is an agent and instrumentality of the federal government, has been held not to be subject to either state or municipal building regulations. United States v. Philadelphia, 56 F. Supp. 862 (E.D. Pa. 1944), aff'd, 147 F.2d 291 (3d Cir.), cert. denied, 325 U.S. 870 (1945). This principle would also apply to a housing authority explicitly designated an agency of the Commonwealth (see Pa. Stat. tit. 35, § 1550 (Supp. 1972)), with reference to any municipal ordinance based on the police power of the municipality to protect the health and safety of its citizens.
not clear whether they could be enjoined from violation of a City ordinance. If they could, there is little to distinguish them from the first class. Indeed, AMS' enforcement strategy apparently has been the same for both classes, and has had similar results.

A third class consists of other departments of City government. The Streets Department and the Water Department are of particular importance. The Philadelphia Home Rule Charter appears to prevent any department in City government from issuing an order against any other department.\textsuperscript{156} Moreover, it is obviously absurd for one department to prosecute another for a penalty. Nor can the City sue to enjoin itself from violating its own ordinances. The only method by which AMS can secure compliance by other departments involves the application of bureaucratic pressures within City government itself. As a mere bureau,\textsuperscript{157} AMS is not well equipped to insure that its concerns receive the high priority they deserve. Notwithstanding this handicap and the lack of enforcement alternatives, the agency seems to have made some progress; but it is quite clear, however, that AMS has no means whatsoever, beyond its powers of rational and bureaucratic persuasion, by which to insure that other City agencies comply with the Code. Against this class of polluters, AMS even lacks the weapon of publicity, since its exercise would be politically untenable.\textsuperscript{158}

The general problems of sovereign immunity and administrative law raised by these observations are mentioned because air pollution, by its very nature, tends to require more stringent regulation in cities than elsewhere. Furthermore, cities are likely to continue enacting

\textsuperscript{156} The Charter provides:
Coordination of Work. The several departments ... shall devise a practical and working basis for cooperation and coordination of work ... . . . . The head of any department or any board or commission may empower or require an employee of another department, board or commission, subject to the consent of the head of such department or of such board or commission, to perform any duty which he or it might require of the employees of his or its department, board or commission. HOME RULE CHARTER § 8-401 (emphasis added).

\textsuperscript{157} Drafters of the Code had originally intended to create a new Department of Air Management to administer the new statute. The City Solicitor, however, ruled that the Home Rule Charter prevented City Council from establishing any new departments by ordinance, and that, therefore, a Charter amendment, involving a public referendum, would have been required. See HOME RULE CHARTER § 1-102(2). Drafters and Council alike agreed that this process would have been simply too cumbersome to be justified by the modest advantage sought, and therefore, a Bureau of Air Management Services was instead created within the existing Department of Public Health. Wilson Interview, supra note 114.

\textsuperscript{158} The City's Managing Director, appointed by the Mayor, HOME RULE CHARTER § 3-204, appoints the heads of the Police, Fire, Health, Streets, Licenses and Inspections, Recreation, Welfare, Water, Public Property, and Records Departments, with approval of the Mayor. Id. § 3-206. He also exercises supervisory power over all activities of these departments. Id. § 5-100. Therefore, any criticism by a bureau of the Health Department of any other department would amount to a criticism of the Managing Director and the Mayor — an allegation which would little become another of the Mayor's direct subordinates.
ordinances such as Philadelphia's Air Management Code, requiring more stringent limitation of emissions than those required by county, state, and federal law. And since city, state, and federal instrumentalities are substantial air polluters almost everywhere, it is important that they conform to local regulations.

One possible response to these problems is to create, whenever possible, overlapping jurisdictions to deal with public polluters. The Governor of Pennsylvania could issue a proclamation similar to the President's Executive Order, the City of Philadelphia could once again be placed within the jurisdiction of state air pollution laws, or citizens' groups could be given standing to sue public polluters for their failure to conform to either local or state regulations.

Another approach, not inconsistent with the first, is that taken by the 1970 amendments to the Clean Air Act of 1967. This legislation gives federal authorities power to intercede and to take over all or part of any state's air pollution control program whenever the state fails to pass adequate laws or to enforce them with adequate vigor. Both past history and present reflection suggest that full exercise of such take-over power would be unwise. When the Commonwealth of Pennsylvania's APC re-assumed control over Philadelphia's air pollution control program in 1968, it quickly discovered that it lacked the resources, data, and experience to carry the burden of routine enforce-

159. See note 152 and accompanying text supra.
160. At present, Philadelphia County and Allegheny County are exempt from state control. Section 12(b) of the Air Pollution Control Act provides:

[T]he Administrative procedures for the abatement . . . of air pollution set forth in this act shall not apply to any political subdivision of the Commonwealth which has an approved air pollution control agency.


Recent amendments to the Act provide for intervention by the Pennsylvania Department of Environmental Resources: (1) whenever a violation of air pollution control standards, rules, or regulations continues to exist after notification to the local air pollution control agency involved; and (2) whenever the Department finds that violations of the air pollution control standards, rules, or regulations "are so widespread that such violations appear to result from a failure of the local control agency involved to enforce" those standards, rules, or regulations. Act No. 245, §§ 12(c), (d) (Oct. 26, 1972). In addition, the Department may refuse, suspend, or rescind approval, of any local agency if it finds such agency "unable or unwilling so to conduct an air pollution control program as to abate or reduce air pollution problems within its jurisdiction in an effective manner."

161. The recent amendments to Pennsylvania's Air Pollution Control Act accomplish this result. Every "department, board, bureau or agency of the Commonwealth, political subdivision, municipality, district, authority or any other legal entity whatsoever" is prohibited from polluting. Act No. 245, § 3(3) (Oct. 26, 1972). While public entities are generally exempted from the summary penalty and misdemeanor provisions (see id. §§ 9(a), (b)), they are not exempt from sections providing for civil penalties or injunctive relief. Id. §§ 9.1, 10. Moreover, all Commonwealth residents are given standing to sue on behalf of the Commonwealth to restrain violations of the act, without any showing of individual harm, whenever the Attorney General fails to proceed after thirty-days notice. Id. § 10(f).

163. The Administrator of the Environmental Protection Agency may either issue administrative orders or bring civil actions for damages against individual polluters. Id. § 1857c-8(a) (2).
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ment in the City.\textsuperscript{164} The federal bureaucracy would seem even less likely to exercise successfully the responsibility for such routine enforcement activity.\textsuperscript{165} On the other hand, occasional federal intervention in cases involving city incinerators, public transportation systems, and school districts, would seem to be quite appropriate. In such cases, the federal bureaucracy has the advantage of being removed from local politics, and the further advantage of access to the very potent weapons of delaying and withholding various federal subsidies. These federal enforcement tools, indeed, are virtually tailored for use against public polluters.

One additional enforcement agency is also helping to secure the compliance of public polluters. The Philadelphia District Attorney has filed actions against both SEPTA (for its buses) and the City (for its incinerators).\textsuperscript{166} Since the District Attorney has no technical staff, however, his intervention is necessarily of limited scope. However, his ability to focus public concern on important issues which might otherwise escape attention and, therefore, be dealt with too casually by public officials, provides some additional and necessary pressure.\textsuperscript{167}

B. Reviewability of Administrative Orders

The administrative order is potentially a valuable enforcement tool. It would be most useful as an alternative to summary prosecution of petty violators and to injunctions against major polluters where complex technical issues are involved. Prior to the issuance of each order, factual issues could be determined by administrative process,

\begin{footnotes}
\item[164] During the period from May 1968 until May 1970, during which the Commonwealth had jurisdiction over Philadelphia's air pollution problems, it did virtually nothing about them. The only exception to the Commonwealth's ostrich stance was a single suit against the City for failure to control access to City dumps. The City's negligence in this regard had resulted in numerous fires started by vandals and scavengers, the smoke from which contributed to air pollution. Phila. Inquirer, Oct. 2, 1970, at 39, col. 1.
\item[165] See note 163 supra.
\item[166] See note 147 supra. The suit against the City was filed in November 1971.
\item[167] See text accompanying notes 79-85 supra.
\item[168] AMS is given broad authority to issue orders under the Air Management Code:

(1) . . . [Whenever AMS] determines that the Air Management Code or the regulations adopted under it require any action or forebearance from any action to be effected by order, it shall make an order requiring such action or forebearance.

(2) All such orders shall be in writing . . . except that where . . . [AMS] finds willfulness or a menace to public health requiring immediate corrective action such orders may be oral in the first instance.

(4) While an appeal from an order . . . is pending, compliance with such order shall not be required unless . . . [AMS] finds, and certifies in writing in such order, that immediate compliance is necessary to protect the public health. AIR MANAGEMENT CODE § 3-305.
\end{footnotes}
with the scope of judicial review thus limited to whether there existed evidence adequate to support the agency findings, and whether the proceedings were fundamentally fair to the parties.\footnote{169}

Despite these potential values, AMS has failed to exercise its specific authority to issue administrative orders in more than a handful of cases.\footnote{170} For all practical purposes, the power lies dormant. The explanation for this curious state of affairs emerges from an analysis of provisions in the Code and the Home Rule Charter relating to appeals from such orders.

The 1969 Air Management Code provides that orders issued by AMS may be appealed formally to the Commissioner of Public Health, as a matter of right.\footnote{171} The City Solicitor has interpreted this provision to require a formal hearing with stenographic transcription of the proceedings.\footnote{172} Standards for the Commissioner's review are clearly defined in the Code, as is the scope of the hearing.\footnote{173} This appeal is surely not required to meet the demands of due process, but does provide an additional safeguard against arbitrary action at a moderate administrative cost, and is therefore not objectionable.\footnote{174}

\footnote{169} Cf. PA. STAT. tit. 17, § 211.403 (Supp. 1972).
\footnote{170} Only three orders were issued during the 1970-71 fiscal year. Interview with Robert W. King, Assistant Director, AMS Compliance & Enforcement Division, in Philadelphia, Oct. 25, 1971 [hereinafter cited as King Interview]. The official policy of AMS is to issue orders only in cases of "persistent" open burning, smoke emission, dust problems, odor emissions, or use of high sulfur fuels. "However, where Air Management Services is of the opinion that an order will not result in compliance, injunctive action will be taken." Enforcement Procedures, supra note 115, at 3. The thrust of the statement seems to be that orders are to be issued only in cases where it is expected that injunctive action will be unnecessary; if it is anticipated that an order is likely to be ignored or appealed, no order is to issue but injunctive action is to be initiated instead. This interpretation of AMS policy is supported by the paucity of orders actually issued as compared to injunctions initiated. Ten injunctive actions were initiated during the 1970-71 fiscal year. 1971 Annual Report, supra note 103, at 5. For most of 1972, AMS was temporarily forced to abandon this policy. The agency issued orders even in cases where AMS expected the polluters to appeal them due to the Pennsylvania Commonwealth Court's decision in Philadelphia v. Franklin Smelting & Ref. Co., 3 Pa. Comm. 626, 284 A.2d 339 (1971). The court held that an equitable injunction could not be granted to abate air pollution in a case where AMS had neither issued an order to the polluter nor pleaded that irreparable harm would occur unless the injunction were granted. In September 1972, AMS secured an amendment to the Air Management Code which apparently allows the agency to avoid the court's result in future cases. Philadelphia, Pa., Ordinance Amending Title 3 of Philadelphia Code, Sept. 14, 1972. By this time, nine orders had been issued. 1972 Annual Report, supra note 106, at 13-15.
\footnote{171} The Code provides:

The Health Commissioner, or his designee, shall administratively hear objections to orders of the Department where error is alleged. Consideration of such objections shall be limited to adequacy of notice, matters of fact, existence of violation, and reasonableness of the time specified for compliance. The Health Commissioner may sustain, modify, or revoke any order where error is found to exist.

\footnote{172} AIR MANAGEMENT CODE § 3-301 (22).
\footnote{173} King Interview, supra note 170.
\footnote{174} The provision for oral argument is hardly necessary or desirable:
The major difficulty arises from the existence of a second, superfluous layer of administrative review required by the Home Rule Charter, which provides that "any . . . order or other action [taken] as a result of any City inspection, affecting [any person] directly . . ." shall be appealable to the L&I Review Board.\textsuperscript{175} This provision apparently applies to almost every conceivable type of order which might properly be made by AMS, including license revocation, permit revocation, sealing of equipment, abatement, and cease and desist orders, since each of these depends upon an inspection and each appears to affect its subject directly.

The existence of this second layer of administrative review seriously undercuts the effectiveness of the order as an AMS enforcement tool for two reasons. First, it offers the polluter an opportunity to create substantial delay, at almost no cost to himself. The Board meets infrequently and has a backlog of almost one year.\textsuperscript{176} Its decisions are binding on AMS, but not on the polluter.\textsuperscript{177} More importantly, L&I review places ultimate administrative responsibility for amendment and enforcement of the order in the hands of a board whose members have no particular expertise appropriate to this specialized task and who are unlikely even to be sympathetic to the AMS position.\textsuperscript{178} These concerns become even more important when it is realized that the primary values of administrative orders are in speeding up compliance by petty violators, and in insuring the issuing agency the optimum possible footing in court actions required to secure the compliance of large polluters.\textsuperscript{179} If the Code's provisions for issuance of administrative orders are to become workable and fulfill the important functions for which they were intended, the Home Rule Charter will have to be amended so as to exempt AMS orders from L&I review.

The essential and underlying principle of the leading cases . . . is that the parties to the proceeding are not to be adjudged on evidence undisclosed to them, but that they are entitled to hear such evidence so that they may rebut or explain it. It does not follow, however, that . . . such evidence must necessarily be presented at open hearing . . . [Where the issues are scientific or technical and involve matters of judgment and interpretation, material] is best presented, not by transitory oral utterances of witnesses, but in the form of written documents and reports, which the adjudicating tribunal should be given ample opportunity to analyze and appraise for relevancy and cogency.


175. \textit{HOME RULE CHARTER} § 5-1005.
176. Voigt Interview, \textit{supra} note 94.
177. Wilson Interview, \textit{supra} note 114.
178. Traditionally, the Mayor has appointed carpenters, plumbers, contractors, and other non-environmentally skilled persons.
179. \textit{See} text accompanying notes 168–69 \textit{supra}.
C. The Remedy Dilemma

We have discussed the usefulness of modest summary penalties in several contexts. However, we have also noted that such penalties appear to have no substantial effect against image-indifferent polluters, and that, in cases involving toxic emissions such as asbestos, they appear to be so trivial that their imposition is useless or even counterproductive.

In both of these latter situations, AMS enforcement options have been severely limited. Truly decisive enforcement action is required in these contexts, but AMS has only two alternatives and neither of them is adequate. The alternatives are to seek: (1) to shut down the firm completely until it can prove its ability to operate in compliance with AMS regulations, or (2) to impose a particular compliance plan upon the firm, the violation of which will be easy to prove and will result in a shut-down or a fine or both. Either of these strategies can be pursued in the first instance by issuance of an appropriate administrative order. If an order is ignored, either strategy can be pursued by seeking a judicial enforcement order or an injunction. Even assuming that the present obstacle to the effectiveness of administrative orders is likely to be eliminated, neither strategy is likely to be effective against image-indifferent polluters, even where toxic emissions are involved.

Consider the case of a large, image-indifferent firm engaged in a complex manufacturing enterprise involving numerous pollutant emission sources. Proper solution of the pollution problems might require hundreds or even thousands of process changes, new installations, and operating-procedure adjustments. Whole divisions might have to be re-located or abandoned and millions of dollars might be in-

180. See, e.g., notes 54-67, 100-05 & 115-21 and accompanying text supra.
181. See notes 122-25 and accompanying text supra.
182. See text accompanying notes 76-78 supra.
183. AIR MANAGEMENT CODE § 3-103(2) (b).
184. Id. § 3-301(17).
185. Id. § 3-301(3).
187. See notes 175-79 supra.
188. See notes 122-26 and accompanying text supra.
190. In 1970, the Rohm & Haas Company faced a difficult decision regarding its sulphuric acid plant — it could either install $700,000 to $800,000 worth of pollution control equipment or shut down the unit and move operations elsewhere. Greater Philadelphia Chamber of Commerce, Rolling With Anti-Pollution Punches, DELAWARE VALLEY BUSINESS FORTNIGHT 4 (Feb. 9, 1970). Production was terminated in 1971. The issue was finally resolved when the plant's two production units were dismantled in mid-1972. Interview with L. E. Westkaemper, Plant Manager, Rohm & Haas Co., in Philadelphia, Nov. 13, 1972.
involved. Without the active and bona fide cooperation of such a firm, it would be extremely difficult for AMS to devise an adequate plan to deal with such complex problems in a reasonable fashion. Nor does it seem proper for a governmental agency to take on the task; rather, the burden should rest with the firm itself. Moreover, if the polluter has not been involved in the development of the plan, it is all too easy for it to make spurious but plausible arguments that the agency's plan is unworkable or prohibitively expensive.

On the other hand, a reviewing court is unlikely to accept an order or injunctive complaint which merely demands that the polluter cease and desist from further pollution — without explaining how such a result can be achieved, short of a total and permanent shut-down. In the absence of an administrative order to which the trial court may properly defer, a request for an injunction may present a very difficult factual issue, quite beyond the court's competence to assess. In the Wilson asbestos case, for example, AMS had the burden of proving not only that asbestos was toxic (since there was no regulation declaring it to be so), but also that the asbestos was not being totally contained. The court in appointing a doctor of medicine as Master, in effect admitted its own incompetence to make either decision de novo. A court of equity, therefore, is likely to shrink from the imposition of the drastic shut-down remedy whenever possible. Instead, it can be expected to accept almost any plan proffered by the defendant which would allow the firm's continued operation but, nevertheless, insure some reduction in the level of pollution — provided, of course, that the firm piously intoned, for the record, that its plan would bring its operations wholly into conformity with the law's demands. That such a judicial hesitancy is likely to be true, even where toxic emissions are involved, is also demonstrated by the Wilson case in which the court

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191. The plan approved by AMS for Atlantic Richfield's Breeze Point Refinery called for an expenditure of more than $10 million over a four-year period. Evening Bulletin (Phila.), May 12, 1971, at 4, col. 3.

192. Recognizing this problem, the Code's drafters sought to bolster the position of AMS by adding an advisory committee provision to the Code. Air Management Code § 3-301(23). The rationale of this provision is that, whenever a polluter claims compliance is impossible, AMS need not "be reasonable" and give him the benefit of the doubt. Instead, the agency may remain firm in its position, challenge the polluter to invoke the provision, and thereby cause a neutral advisory committee of experts to be appointed to decide the issue. The Code's drafters hoped that such a committee could "take the heat for AMS" and that, if it agreed with the agency's position, its prestigious support would improve the agency's position before a reviewing court. Purdom Interview, supra note 8.

In practice, the advisory committee provision has not worked well, mainly because the Code makes no provision for paying the experts, even though their tasks are difficult, time-consuming, and sometimes unpopular. Id. By July 1971, the provision had been invoked only once, although two additional requests had been received. Wilson Letter, supra note 54.

193. See notes 86–93 and accompanying text supra.

194. Id.
continued to seek a less drastic remedy even after AMS had shown a violation of an earlier compromise order. 195

Thus, whether AMS seeks to shut down the polluter or, merely by the threat of such action, to force it to devise a plan for future operation in compliance with Air Management Regulations, the outcome of the shut-down strategy is likely to be failure, or at least substantial delay in securing compliance. The polluter need only proffer the vaguest and most limited of plans in order to escape the drastic remedy urged by the agency and, likewise, the sanctions which might flow from ignoring an AMS order to formulate a workable plan. 196

To prevent the polluter's escape, AMS must maintain control over the final decision as to the character of the plan which is required in the particular case and must not leave this decision to the judiciary. The role of the judiciary must be confined to consideration of whether the agency properly approved a particular plan, whether the firm's objections, if any, were duly considered, and whether the firm has put the plan into effect as required. This strategy requires that AMS either design a plan of its own or approve a plan proposed by the polluter. Since in a complex case the agency cannot and should not do all the work itself, the question again is how the agency can pressure the polluter to work in good faith in order to develop a plan acceptable to it. An enforcement tool in addition to publicity is plainly needed. The tool's exercise must have the same effect on image-indifferent polluters as publicity has on image-conscious ones; it must goad them into fashioning plans of their own which will bring them into compliance, albeit delayed. 197 Recent amendments to the Pennsylvania Air

195. Additional support for the conclusion is suggested by the treatment of an injunctive complaint filed by AMS in May 1971. See text accompanying notes 98-99 supra.
196. Violation of an order of the Department of Public Health (in which AMS operates) is subject to the same sanctions as violation of any provision of the Code or any regulation adopted pursuant thereto. AIR MANAGEMENT CODE § 3–103.
197. Reasons for preferring a strategy likely to result in specific compliance schedules have been noted by three law students in a general study of environmental law enforcement problems:

The public conception of law enforcement is to see the "criminal" taken to court. In the area of pollution problems, however, such hasty action actually dodges the real issue. Successful abatement is best attained by an order tied to a time schedule with which a company can reasonably comply. It is better that a company pay a large amount over an extended period to clean up its processes than to [sic] pay a lump sum criminal fine or civil penalty and not as adequately abate its problems. A further advantage is that both the enforcement agency and the polluter realize what is expected from them through the negotiated agreement. Thus, the firm can plan for future costs and the agency can plan for regular inspection and be prepared to go to court if the stipulations are willfully disregarded . . . AMS claims that only "one half of one percent" of abatement is obtained through court action.

Pollution Control Act make such a tool available to AMS for the first time. The agency can now seek, in the court of common pleas, a civil penalty of up to $10,000, plus $2500 for each additional day of violation, in addition to proceeding under any other remedy available at law or in equity. Whether this new tool will be effectively utilized by AMS remains to be seen.

Another possible alternative might be a short-term shut-down penalty of from one to five days during which the offending firm would be required to continue paying wages to its employees but would be forced to cease all operations. Arguably, such a penalty could be imposed in summary proceedings upon a mere showing that the Code had been violated.

Had not the singular additional enforcement weapon of substantial fines been adopted, AMS would have found itself increasingly unable to deal effectively with polluters. Unfortunately, such a trend had already appeared. By the fall of 1971, ten separate injunctive actions were pending against polluters, and a group of perhaps 100–200 others were at various stages in the administrative process. As indicated in the Bailis example, such enforcement efforts require substantial administrative effort. An important factor, not present in the Bailis case, increased the difficulty of securing effective injunctions against many of the remaining offenders — the Bailis firm employed fewer than ten persons. A large employer is likely to be treated more gently by the courts, as were the construction firms involved in the asbestos spraying cases. Moreover, some firms had already spent substantial sums to clean up their operations in recent years, although with little positive result. Such firms might reasonably have been


199. No exact precedent for such a penalty has been discovered. The remedies of license revocation, sealing, and equity abatement have typically been used as permanent sanctions. The nearest parallel to this proposed limited-term, shut-down penalty would seem to be the remedy of license suspension. Indeed, if the Home Rule Charter were amended as urged (see text accompanying note 179 supra), air management operating licenses could be suspended quickly and with much the same effect as this proposal. There would, moreover, seem to be no constitutional or statutory objection to the creation by city ordinance of such an innovative penalty.

200. King Interview, supra note 170.

201. See pp. 189–90 supra.


203. See text accompanying notes 72–99 supra.

204. One such firm was the Franklin Smelting & Refining Co. Since 1950, it had incurred pollution control expenditures totaling $900,000. Sunday Bulletin (Phila.), Oct. 3, 1971, § 7, at 4, col. 1.
expected to resist further enforcement and to view $300 fines as a preferable alternative to additional expenditures for pollution control equipment.

V. Conclusion

Philadelphia's Air Management Code offers a useful model for analysis of the obstacles likely to impede local enforcement of air pollution control regulations throughout the country. The main obstacles noted are the immunity of virtually all public polluters to the effects of local enforcement tools, a procedure for appeal of administrative orders which is weighted too heavily against the enforcement agency, an initial delegation of one area of enforcement responsibility to an inappropriate agency, and a recently corrected state-imposed limitation on maximum fines.

Notwithstanding these considerable obstacles, the local program studied has quite clearly achieved considerable success. Factors such as the agency's personnel, the effect of federal pressure, and the A major problem now faced by the Philadelphia air pollution control bureaucracy is how to evaluate its own success. In June 1971, AMS produced a brief compendium of graphs, purporting to answer the tract's title question, "How Clean Is Philadelphia's Air?" The answer posited was that levels of suspended particulates, sulfur dioxide, carbon monoxide, and total oxidants are declining substantially, while the level of total hydrocarbons and nitrogen dioxide are gradually increasing. Without embarking upon a lengthy statistical discussion, it is submitted that each of the alleged "trends" presented graphically in the AMS tract can also be explained as the result of random fluctuations in the weather and industrial activity, and by inaccuracy of the measuring instruments.

Because of the extreme difficulty of drawing reliable conclusions from air sampling data, AMS has attempted to evaluate itself in other ways as well. Among these are: number of investigations made; violation notices written; cases prosecuted in municipal court; office conferences held; tons of pollution prevented; and compliance schedules adopted by major dischargers. Also, the number of citizen complaints provides a useful basis for evaluation. In this regard it is worth noting that both the District Attorney's office and the Delaware Valley Citizens Council for Clean Air report a substantial reduction in the number of complaints received regarding specific air pollution nuisances since the Code was adopted. Childs Interview, supra note 56. Among indices not apparently used by the AMS are amounts spent by dischargers on control equipment, average time interval between receipt of citizen complaints and arrival of AMS inspectors, effects data (such as corrosive effects on steel exposed to air for a given length of time), observations of airline pilots, and public health data. Other standards of evaluation could, of course, be devised. The point is that what may at first glance appear to be a simple question of measurement, in the final analysis turns out to be an elusive search for criteria upon which one might make a defensible judgment. Evaluation of air pollution control programs can hardly be more precise or less difficult than evaluation of a particular economic policy or a system of education. A greatly expanded and improved air quality sampling network may eventually make it possible to rely on trends in sampling observations, but at present this is simply not yet possible.

206. Federal funding for Philadelphia's air pollution control effort increased exponentially during the period 1965-70 and brought increasingly sophisticated federal scrutiny and federal pressure for effective action. A 1970 federal report contained 91 specific recommendations for increased effectiveness of AMS programs. U.S. DEPT OF HEALTH, EDUCATION AND WELFARE, EVALUATION REPORT FOR AIR MANAGE-
agency's own judicious use of publicity,\textsuperscript{207} should not be discounted, but, equally, the 1969 Air Management Code must be recognized as the foundation of success. The Code's strength lies in its clear rejection of the nuisance concept, its broad grant of authority to the Air Pollution Control Board (requiring that agency to promulgate a complete set of air management regulations), and its attempt to place a substantial arsenal of enforcement weapons at the disposal of the Department of Health's Bureau of Air Management Services. These aspects of the Code can be recommended to other jurisdictions.

\textsuperscript{207} The "Top 15" theme has been especially effective. \textit{See} notes 112-126 and accompanying text \textit{supra}. 

\textsuperscript{MENT SERVICES IN THE CITY OF PHILADELPHIA (1970) (copy on file with Victor H. Sussman, Chairman, Air Pollution Commission, Harrisburg).}