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# AN INTERIM ASSESSMENT OF THE 1972 FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS

Denis J. Brion

It is becoming a part of the conventional wisdom that the national legislative process has undergone substantial degeneration—under the typical pattern, Congress creates, with considerable fanfare, an ambitious federal program in order to cure one or another of the social ills which plague our times. Next comes a ritual bill-signing ceremony during which the President intones that this particular program is the most significant of our generation. There then follows a period during which, again with the attention of the news media, prominent individuals are appointed to the top positions in the new bureaucracy. This phase is inevitably followed by the setting in of a long period of bureaucratic routine, under which the program continues because of its momentum, with expanding funding but with no real impact on the problem for which the program was created. To the average citizen, the whole process seems to be one of cumulation—new programs are constantly being created, old programs continue, no program seems to solve anything, and the burden of government seems ever to increase. It has reached the point that the traditional conservative battle cry against big government is now being echoed in the opposing camps. Edmund Muskie, for instance, is now wondering whether the largeness of government is hampering the ability of government to do its job. And Edmund Brown, Jr., is past the stage of wondering; he is actively advocating a reduction in the size of government.

The purpose of this article is not to examine the nature of this trend, nor is it to comment on the efficiency of the political process. Rather it is to assess, however briefly within the context of this new conventional wisdom, the nature of one ambitious federal program, its impact nationwide as well as in Virginia, and some of its prospects.

## *A. A Brief Description of the 1972 Amendments*

In October, 1972, Congress enacted the Federal Water Pollution Control Act Amendments, a comprehensive rewriting and expansion of an existing federal pollution abatement statute. These amendments, commonly referred to by their Public Law number, PL 92-500, set ultimate goals for achieving the cleanup of America's watercourses. By July 1, 1977, industrial discharges must be treated by treatment works using "the best practicable control technology currently available," and municipal sewage treatment works must be capable of "secondary treatment." By July 1, 1983, industrial waste treatment works must be capable of "the best available technology economically achievable," and municipal sewage treatment works must achieve "the best practicable waste treatment technology."

What all this euphonious language is intended to mean is that, by July 1, 1983, "an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water" is to be achieved; and, by 1985, "the national goal that the discharge of pollutants into the navigable waters be eliminated" is to be achieved. In brief, these goals represent a truly ambitious commitment to reversing the generations-long process of the degradation of the waterways of America—an enterprise worthy in comparison to the most grandiose government programs that have been initiated in the two centuries of our republic.

The mechanisms of PL 92-500 are as complex as the intent is massive. The heart of the enactment is the National Pollutant Discharge Elimination System (NPDES), which sets up a regulatory mechanism based on the concept of federal-state cooperation. Under NPDES, all persons who potentially might discharge pollutants must obtain a discharge permit; "persons" includes both private entities, such as industries, and



public entities, such as municipalities. The NPDES permits are issued under direct regulatory programs established and carried out by the individual states. However, these individual programs are approved in advance by the federal Environmental Protection Agency (EPA), and the substantive content of the programs is controlled by regulations promulgated by EPA. The authority of EPA to issue these various regulations and guidelines creates for that agency a role of setting standards, in which it establishes tolerable levels of various kinds of pollutants, treatment standards, levels of quality for receiving waters, and procedural requirements. And, because EPA must approve the individual state programs and is empowered to withdraw this approval, EPA also fills the role of overseer.

Other hardly less important provisions of PL 92-500 provide for a comprehensive scheme of state planning carried out under federal guidelines and assisted by federal grant funds; for substantial research and development to be conducted by EPA in waste treatment technology; and for a broad enforcement scheme. The complex scheme of planning includes river basin plans, which are to describe present water quality conditions and to project future conditions and treatment requirements; management plans, which are to establish the means by which these treatment requirements are to be met; and a more sophisticated level of planning for the purpose of defining and establishing means to abate less obvious but no less important forms of pollution such as storm water runoff from urban areas, siltation from land areas disturbed by development, and runoff of nutrient-laden waters from heavily-fertilized agricultural lands. The enforcement scheme of PL 92-500 is carried out primarily by the individual states, but the EPA has broad residual authority to step into any faltering state process; and a relatively generous citizen suit provision is also included.

If the heart of PL 92-500 is NPDES, the prime mover is the federal fund granting process under which EPA provides 75% of the costs of public sewage treatment works. PL 92-500 authorized a total of \$18 billion for

such purposes, spread over fiscal years 1972, 1973, and 1974; and despite a delay because of a presidential impoundment of a large portion of the funds (which impoundment was struck down by the courts), the money has been made available and will soon be substantially spent.

These funds are parceled out in a complicated procedure under which the individual states are required to adopt a rating system for assessing priorities of potential fund recipients, followed by a three-stage process under which the various projects, once selected for funding, are moved from inception through the design phase to completion.

Finally, PL 92-500 established a "National Study Commission," charged with the duty to

make a full and complete investigation and study of all of the technological aspects of achieving, and all aspects of the total economic, social, and environmental effects of achieving or not achieving, the effluent limitations and goals set forth for 1983 in . . . this Act.

Thus, the National Study Commission was charged with the duty to make its report by September, 1975, in order to permit "mid-course corrections." PL 92-500 carries with it no irrebuttable presumption that it is the end-all; rather, a mechanism is instead established to compare goals with performance and to reassess the wisdom of continued pursuit of those goals.

This somewhat long summary of PL 92-500 is actually only a simplified overview—the print of the Act covers eighty-nine prolix pages, and it is one of the most complex pieces of legislation ever to come out of Congress at one time.

#### *B. The Interim Report of the National Study Commission*

The obvious question, of course, is whether such a monstrosity can really work. The staff report of the National Study Commission was issued in November, 1975, and the recommendations of the Commission became available in March, 1976. The findings of the Commission are interesting. On a nationwide basis, the

commission found that publicly owned sewage treatment works will not meet the July 1, 1977, deadline for secondary treatment, primarily because not enough federal grant funds have been made available. The Commission estimates that an additional eleven years and \$118.5 billion in 75% federal grants will be required. Similarly, the July 1, 1977, goal for industrial discharges will not be met, but the industries are expected to meet this goal much sooner—by 1980—than the 1988 completion date for public treatment works. Moreover, the report concludes that there has already been noticeable improvement, generally, in water quality conditions.

#### C. Progress in Virginia under PL 92-500

In Virginia, for a variety of reasons, the institutional ingredients have long existed for taking advantage of the initiatives available under PL 92-500. In 1946, more than a generation ago, Virginia established one of the first water pollution regulatory agencies, for the ironic purpose of attracting more industry to the Commonwealth. With a relatively vigorous response to PL 92-500, Virginia has been able to obtain a total of \$496 million of the authorized grant funds for municipal treatment facility construction:

Fiscal Year 1973	\$ 58 million
Fiscal Year 1974	\$ 88 million
Fiscal Year 1975	\$ 99 million
Fiscal Year 1976	\$251 million

Since the federal grant pays for 75% of project cost, the total project value initiated in Virginia under PL 92-500 is \$661 million, a not insubstantial public works investment by any measure, and a prodigious undertaking for an environmental endeavor. Nor is this the only impressive feature that can be offered. In terms of physical facilities in place, these funds will represent the initial construction or improvement of municipal treatment works with a combined total capacity of approximately 390 million gallons per day (MGD). Stated differently, using a rule of thumb of 90 gallons of sewage per day generated per capita and a total Virginia population of about 5 million, these funds have a direct impact on the waste of 89% of Virginia's population. This figure is even more substantial when it is considered that a certain portion of the population is too dispersed to be served by centralized facilities.

The types of facilities being provided under these projects cover a broad spectrum of treatment techniques and treatment capacity. They range from a simple central septic system for the tiny Roanoke Valley community of Boones Mill to advanced, most-sophisticated-in-the-country tertiary treatment plants at Roanoke, Charlottesville, Winchester, Waynesboro, Alexandria, Arlington, eastern Fairfax County, and Prince William County. The largest of these tertiary plants will have a capacity of 54 MGD and the combined total capacity of 214 MGD, a capability to serve 48% of the population of the commonwealth. In addition, several antiquated treatment plants in the Hampton Roads area are being substantially upgraded, three newer plants are being expanded in

capability to meet increasing loads, and three entirely new facilities are in various stages of planning. The total capacity for the Hampton Roads area facilities will be 180 MGD.

Of course, the large-scale projects in Virginia's urban areas are the most visible, but the important point is that the treatment requirements and stream standards imposed under NPDES affect all of the Commonwealth, not just the urban concentrations. Thus, on a per capita basis, the requirements are substantially uniform, and the resident of a small community will feel the impact of PL 92-500 just as much as the resident of the large city.

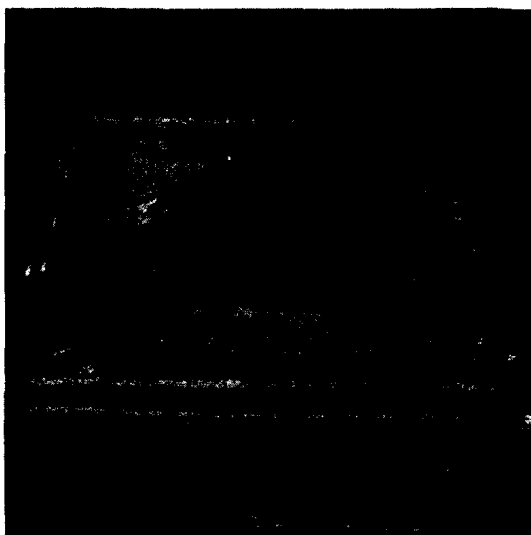
What is the nature of this impact? The first aspect is obviously financial. The \$496 million is not "free", since it comes from the taxpayer's pocket, although there is some reason to believe that Virginia has wangled a bit of a "subsidy". In terms of size and population, Virginia is an "average" state and would thus have expected to receive about 1/50, or \$360 million, of the \$18 billion authorized by PL 92-500. The \$496 million actually received thus can be looked on as containing a 38% bonus. But, from another point of view, this federal largess is also not free since these treatment systems will not run themselves; for the indefinite future, they will demand funds for operation and maintenance that will have a permanent effect on the utility bills of the average citizen.

If the cost of this program is substantial, what of the benefits? The statistics available to date indicate:

a. from December 1972 to December 1975, the allowable total flow discharge from Virginia's major municipal sewage treatment plants (defined as those with a capacity of 2 MGD or more) as increased from 345 MGD to 424 MGD, a 23% increase; and

b. in the same period, the total pollutant discharge from these facilities has decreased from 165,000 pounds of BOD per day (a technical measure of pollutant





quantity) to 120,000 pounds of BOD per day, a 27% decrease. The performance in this same period for Virginia's major industrial treatment plants shows similar improvement.

While a 27% decrease in pollutant load is solid progress but still not all that spectacular, it should be noted that only about 5% of the projects funded by PL 92-500 have been completed; and, while much of this improvement could also be attributed to more vigorous enforcement of Virginia's water pollution abatement program, there is little question that the financial, as opposed to regulatory, aspects of PL 92-500 are beginning to take effect. It is projected that, when the projects funded by the \$496 million federal grants are completed in 1979, the pollutant discharge from Virginia's major sewerage treatment plants will be some 90,000 pounds of BOD per day, a reduction of 45% from December 1972, even though the permitted flow will be 600 MGD, a 74% increase over the same period.

Finally, if the pollutant load being discharged into Virginia's waters is decreasing, what will be the effect on the quality of Virginia's waters—which, after all, is the whole point of the pollution abatement exercise? The information and projections now available assuming a continuing federal grant program, indicate this:

Year	Stream-miles not meeting quality criteria	% of total Virginia stream miles
1974	2033	8.4%
1977	1435	5.3%
1983	96	0.4%

These figures are particularly significant since the process of setting water quality criteria for the streams of Virginia is a continuing one, and the tendency over time is for these standards to become more stringent. Thus, Virginia's waters are on their way to being cleansed.

#### D. The Future of PL 92-500

The National Study Commission has concluded that the 1977, 1983 and 1984 goals of PL 92-500 cannot be met on time. In Virginia alone, there is another \$1 billion worth of municipal projects that must be funded if these goals are to be met. And much further work must also be done in abating non-point-discharges and toxic pollution. Unfortunately, the fiscal authorizations under PL 92-500 have run out, and the President's current budget requests provide for no additional funds. At this writing there is substantial sentiment within Congress to continue the grant program, but it is too early to tell how much might be provided, if anything.

The ultimate question, one beyond the scope of this paper to argue, is whether the program is worth continuing. It is interesting to note that the National Study Commission has massive-sounding funding requirements to meet the affordable goals of PL 92-500, if they are affordable. For instance, for industrial discharges to meet the 1983 requirements, the annual rate of inflation for the price of the product of this industry will be 0.37%—of itself, an acceptable amount. Similarly, approximately \$120 billion will be required in additional funds to meet the goals for municipal treatment works. But when this is spread out over the eleven years which will realistically be needed, the financial requirements come to only 0.9% of the annual GMP—again, an affordable figure of itself.

The answer to this ultimate question will of course be determined by many complex factors, including the state of the economy, shifting public priorities as natural resources dwindle, the continued social will to reallocate wealth, and the durability of the environmental ethic. But, at least the mechanisms have been set up and are working to assess, on a continuing basis, the rationale for, and progress of this massive undertaking. Whether or not the commitment to the goals of PL 92-500 will be continued will be a significant development, but it is already significant that PL 92-500, whatever it achieves in the area of water quality, is teaching us how to evaluate and utilize governmental programs in a much more sophisticated way.