

[COMMITTEE PRINT]

CONGRESSIONAL WHITE PAPER
ON
A NATIONAL POLICY FOR THE
ENVIRONMENT

SUBMITTED TO THE
UNITED STATES CONGRESS

UNDER THE AUSPICES OF THE
COMMITTEE ON INTERIOR AND
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(II)

LETTER OF SUBMITTAL

To the U.S. Congress:

An informal joint House-Senate colloquium on a "National Policy for the Environment" was held July 17, 1968. The objective was to avoid conventional committee jurisdiction limitations and bring together interested members with executive branch heads and leaders of industrial, commercial, academic, and scientific organizations. The proceedings of the colloquium attest to its success in getting down to the practical aspects of policy planning.

The accompanying white paper on national environmental policy is intended to continue and broaden the consideration of this subject by the entire Congress. The genesis of the policy statement is the deep concern of those Members who have joined in adding their signatures below. It was prepared under our direction by Mr. Richard A. Carpenter and Mr. Wallace E. Bowman of the Legislative Reference Service.

Over the years, many legislative committees and individual Members have become aware of the difficulty of reconciling conflicting uses of the environment in the absence of any comprehensive policy guidance.

The Congress is the only institution having the scope to deal with the broad range of man's interactions with his physical-biological surroundings. We therefore believe that leadership toward a national environmental policy is our responsibility.

This white paper serves as the next step toward the needed policy agreement. The elements of policy are presented as they are now understood. Further immediate actions by the Congress are briefly outlined. The overall purpose is to focus consideration on progress rather than continue to elaborate the dimensions of the environmental quality issue.

We believe the Nation accepts the responsibility of stewardship and creative management of the environment. By means of this document we solicit your support, comments, or criticisms so that the combined activities of government, industry, and individuals may proceed toward a wise and operational environmental policy.

Signed Senator HENRY M. JACKSON.

Senator THOMAS H. KUCHEL.

Representative GEORGE P. MILLER.

Representative JOHN A. BLATNIK.

Representative EMILIO Q. DADDARIO.

Representative JAMES G. FULTON.

Representative CHARLES A. MOSHER.

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CONGRESSIONAL WHITE PAPER ON A NATIONAL POLICY FOR THE ENVIRONMENT

PART I. ASPECTS OF ENVIRONMENTAL MANAGEMENT

The colloquium¹ focused on the evolving task the Congress faces in finding more adequate means to manage the quality of the American environment.

In the recent past, a good deal of public interest in the environment has shifted from its preoccupation with the extraction of natural resources to the more compelling problems of deterioration in natural systems of air, land, and water. The essential policy issue of conflicting demands has become well recognized.

Several social attitudes have become the action force in the movement for improved environmental policies and programs. One is the desire for esthetically attractive surroundings. Another is the recognition of the folly of excessive population densities. Still another is the mounting irritation, disgust, and discomfort (aside from actual economic loss) resulting from such anomalies as smoggy air and polluted streams and seashores.

The broad public interest in the natural environment was succinctly defined by a report of the National Academy of Sciences thus:

We live in a period of social and technological revolution in which man's ability to manipulate the processes of nature for his own economic and social purposes is increasing at a rate which his forebears would find frightening * * * there is a continuing worldwide movement of population to the cities. The patterns of society are being rapidly rearranged, and new sets of aspirations, new evaluations of what constitutes a resource, and new requirements in both types and quantity of resources are resulting. The effects on man himself of the changes he has wrought in the balance of great natural forces * * * are but dimly perceived and not at all well understood. * * * It is evident that the more rapid the tempo of change is becoming, the more sensitive the whole system of resource supply must become in order to cope with the greater rapidity and severity with which inconsistencies, conflicts, and stress from independent innovations will arise. * * * If divergent lines of progress are seen to give rise to ever-greater stresses and strains too fast to be resolved after they have risen and been perceived, then obviously the intelligent and rational thing to do is to learn to anticipate those untoward developments before they arise.²

¹ Joint House-Senate Colloquium to Discuss a National Policy for the Environment. Hearings before the Committee on Interior and Insular Affairs, U.S. Senate, and the Committee on Science and Astronautics, U.S. House of Representatives, 90th Cong., 2d sess., July 17, 1968.

² NAS-NRC Publications 1000 and 1000A (1962).

The statements of participants in the colloquium itself are evidence that the issues of the human environment are important to a broad segment of society.

Mr. ROCKEFELLER. * * * there is a strong and deep seated concern among the American people for a better environment. The quality of our surroundings is emerging as a major national social goal (p. 4).³

Secretary UDALL. One of the things that I take the most encouragement from is simply the growth of sentiment in the Congress, the number of conservationist Congressmen, the number of organizations, however they define themselves, that are interested in the city problem, that are interested in the total environment problem * * * (p. 62).

The long-term quality of the environment is seen to be dependent on today's decisions. The means of relating the present to the future is not clear, however.

Secretary UDALL. The real wealth of the country is the environment in the long run. We must reject any approach which inflates the value of today's satisfactions and heavily discounts tomorrow's resources (p. 14).

Mr. ROCKEFELLER. * * * we have not set down in clear terms what our goals are for the long-term future, (p. 5).

If America is to create a carefully designed, healthful, and balanced environment, we must (1) find equitable ways of charging for environmental abuses within the traditional free-market economy; (2) obtain adequate ecological guidance on the character and impact of environmental change; (3) where corporate resource development does not preserve environmental values, then consider the extension of governmental controls in the larger public interest; (4) coordinate the Government agency activities, which share with industry the dominant influence in shaping our environment; and (5) establish judicial procedures so that the individual rights to a productive and high-quality environment can be assured.

These and other aspects of environmental management—discussed at the Colloquium and submitted in the form of letters or reports for inclusion in the record—are briefly highlighted below.

A. Relationships Among Population Growth, Environmental Deterioration, and the Quality of Life

In an exchange of views on this subject, Secretary Robert Weaver (HUD) pointed out that by 1980 there will be almost 240 million and by the year 2000 about 312 million people in the 48 contiguous States and the District of Columbia, if present projects are borne out. Secretary Stewart Udall (DI) argued that a reasonable adjustment between population growth and our finite resources is required for sound environmental management, while Assistant Secretary Philip Lee (DHEW) contended that we do not presently have the kind of information to determine what the ideal population for this country would be. Dr. David Gates submitted the following observations in the worldwide context:

³ Page nos. in parentheses following quotations refer to the hearing transcript, op. cit.

It is clear that all segments of the world—all soils, waters, woods, mountains, plains, oceans, and ice-covered continents—will be occupied and used by man. Not a single solitary piece of landscape will go untouched in the future and in fact not be used repeatedly for as long as man survives. Everything between soil and sky will be moved about, redistributed and degraded as man continues to exploit the surface of the planet. * * * The population will grow until it reaches some equilibrium level. * * * An alternate ultimate destiny is for an earth of half-starved, depressed billions gasping for air, depleted of eutropic water, struggling to avoid the constant presence of one another and in essence continuing life at a degraded subsistence level limited in numbers not by conscience but by consequence. A third possibility exists which is to maintain a reasonable quality for life by means of population control, rational management of ecosystems, and constructive exploitation of resources * * * (p. 174).

The issue of high population densities as a source of growing stresses in our society, with profound effects on health and safety, raised a number of comments. Senator Henry Jackson observed that the apparent cause-and-effect relation of congestion and violence should be a consideration in arriving at any decisions concerning what constitutes an optimum population density.

Dr. Paul Weiss submitted the following caveat:

A stress free environment offering maximum comfort and minimum challenge is not only not optimal but is detrimental. To be exposed to moderate stress is a means of keeping the human faculty for adapting to stress * * * lacking the opportunity for such exercise, man loses that faculty and becomes a potential victim of any unforeseen, but inevitable, stressful occurrences. The optimum environment consists of a broad band of conditions bounded by an upper limit far short of the stress limit and by a lower limit considerably above the ideal zone of zero stress. Within those margins of reasonable safety or tolerance, man must navigate his own responsibility (p. 224).

Senator Clifford Hanson suggested that the Federal Government might well consider programs which would provide incentives and opportunities leading to a wider and more balanced dispersal of our people. Assistant Secretary John Baker (USDA) agreed and proposed the creation of new community centers as a matter of national environmental policy. Secretary Weaver commented that any Government policy which has to do with such dispersal must be based on the democratic principle of free choice—including for all of our people the alternatives of living in existing large population centers, suburbia, or new towns.

B. Broadening the Scope of Cost Accounting

Narrow utilitarian views governing the use of environmental resources were cited as the root of many conflicts and a major barrier to sound environmental management.

Dr. DONALD HORNIG. In my view national policy must recognize the very wide array of appropriate and necessary uses of air and water and land. It would recognize, too, the existence of a number of beneficial but noncompatible uses, and make provision for resolving these conflicts. It should result in an environment that is safe, healthful, and attractive and that is economically and biologically productive, yet that provides for sufficient variety to meet the differing requirements and tests of man (p. 31).

Congressman Emilio Q. Daddario questioned whether the industrial objective of immediate profit can be made compatible with long-term environmental management objectives. Congressman Joseph Karth observed that the self-interests of some organizations do not coincide with the public interest. Secretary Wilbur Cohen (DHEW) commented that environmental controls may be costly in the short run, but in the long run they are a bargain both for industry and the public it serves: "What we are really seeking is an enlightened self-interest that industry and commerce have often exhibited."

Dr. Lynton K. Caldwell contended that the social costs of environmental management should not be an undue burden on the business community if all competitors carry it alike:

Scientific knowledge and rising levels of amenity standards have added to public expectation that protection against environmental change will be built into the products and production costs of manufacturers (p. 99).

The point at which compromise among conflicting uses is reached furnishes one test of adequacy of policy.

Mr. ROCKEFELLER. * * *

If you take a black and white approach, you are never going to resolve it. You have a lot of hostility and you don't represent the public constructively (p. 63).

C. The Role of Ecology

Ecologists dedicated to the study of man-environment relationships were urged to show a greater willingness to engage with industry in what was termed "ecological engineering." However, Dr. Dillon Ripley argued that this subject involves a kind of ecological study which is still in the formative stage:

I think it may take a generation perhaps to achieve even the beginnings of the kind of training, the kind of production of original minds and talents that will be able to perform the sorts of—studies—which we stress the urgency of (p. 75).

By contrast, several participants contended that the science of ecology has already established a number of basic principles, or propositions, which could guide the attitudes and actions of both industry and government toward the environment. The following examples are paraphrased from submissions by Dr. Paul Weiss:

(i) Organic nature is such a complex, dynamic, and interacting, balanced and interrelated system that change in one component entails change in the rest of the system. Isolated analytical study of separate components cannot

yield desired insight. To find solutions to separate problems of hydrology, waste disposal, soil depletion, pest control, et cetera, is not adequate to achieve the optimization of environmental resources generally. All factors and their cohesive impact on each other need to be simultaneously considered.

(ii) The significance or insignificance of mixtures of components and environmental conditions cannot be judged from sheer data on bulk or averages. This fallacy is a pitfall ignored today by some planners, developers, builders, and other practicing manipulators of the environment. Our tendency to maximize a specific change or result too often sacrifices other interrelated parts without optimizing the total result.

(iii) Similarly, the concept of single, rigid, linear cause-to-effect chains of natural events has given rise to organically unreal and practically untenable conclusions. More attention should be given to the network type of causal relations in an integrated system that establishes a multiplicity of alternative routes to such a goal of optimizing the development of environmental resources.

Commenting on the complexity of the total systems approach, Mr. Don Price stated:

I am left with the vaguely uneasy feeling that if we see the continuous complex here as one set of interconnecting realities that have to be understood as a total system, we may be broadening our interest so much that it's impossible to act on it at all (p. 64).

Dr. HORNIG. It is a great thing to talk about systems analysis, but the trouble with that is that you have to put in some facts. And, if you do the analysis when the facts aren't available, you are in trouble.

* * * it needs a basis in sound research that understands, that gives us clear understanding of what the nature of these long-term liabilities are (p. 51).

D. Redirecting Research Activities

In addition to increased ecological research, the colloquium touched on the need for the entire scientific community to direct a greater share of its total effort to long-term environmental problems. Mr. Laurance Rockefeller argued that we have not yet fully harnessed this Nation's vast technological talent in the effort for a better environment. Dr. Walter Orr Roberts pointed out that cross-disciplinary research on environmental problems offers the utmost challenge from the intellectual standpoint, and also cited the following as an example of neglected research:

Only modest efforts have been made to mount a sustained research program on the medical effects involved in the slowly developing health impairments, like aging, that result from low-level but long-persistent alterations of the atmospheric environment. Subtle alterations of the chemical constitution of the atmosphere, through pollutants added in the form of trace gases, liquids, or solids, result

from industrial activity or urbanization. This is an area of biometeorology that has significance in every living person, and yet we have not yet seen even the first beginnings of an adequately sustained research effort in this area (p. 216).

Future values are difficult to judge, particularly when they include non-economic aspects of environmental quality. Social science research and ecology were singled out for increased support.

Dr. HORNIG. One of the central problems in weighing the future against the present is that we don't know about the future. The reason we can't muster political forces and the reason we can't make decisions is that for the most part the information is not there. (p. 51).

The establishment of criteria for judgment is a primary task of environment management.

Secretary WEAVER. There are too many things we do not know, basic matters such as how we define quality in the urban environment, how we measure it, and how we strike a balance among competing values (p. 19).

Mr. PRICE. There has been a lot of talk lately about social indicators out of a conviction that narrow economic, statistical consideration are not an adequate guide to economic policy, and here we are talking about a field in which it is not enough to know about the chemical industry and the biology (p. 67).

Technology was seen to be the savior as well as the villain in many environmental quality problems.

Mr. PRICE. There is a tactic or an approach which has received a good bit of attention recently in technological and scientific literature. Mr. Weinberg, I think, called it the technological fix (p. 66).

It is obviously true that the development of the specific techniques has proved to be not only the basis of our accumulation of wealth which now makes it possible for us to ask these more sophisticated questions about our environment, to have very much higher standards of environmental control to insist on (p. 68).

E. International Aspects of Environmental Alteration

The urgent necessity of taking into account major environmental influences of foreign economic assistance and other international developments was underscored by Mr. Russell Train.

Dr. Ivan Bennett commented that the Federal Government is now participating, through the Organization for Economic Cooperation and Development, in a series of cooperative programs that will encourage the exchange of environmental information.

Senator Henry Jackson recalled President Johnson's remarks at Glassboro State College on June 4 in which he said:

Scientists from this country and the Soviet Union and from 50 other countries have already begun an international biological program to enrich our understanding of man and his environment. I propose that we make this effort a permanent concern of our nations (p. 83).

Dr. Roberts questioned whether these and similar ongoing cooperative efforts were fully adequate, and proposed that a broader international scheme of cooperative "bench mark" observations be made. As an example he described the neglected area of stratospheric contamination:

It is now very difficult for us to say anything quantitative or certain about the degree to which the atmosphere above New York City, or Zurich, Switzerland, or the rural regions of the United States, Europe, and Siberia has been changing in respect to the burden of liquid or solid wastes that jet aircraft carry. I have seen many occasions when the skies over my home city of Boulder, Colo., are crisscrossed with expanding jet airplane contrails. Often these grow, in hours, to a general cirrus cover that blankets the entire sky. On these days it is eminently clear that the jet exhausts are stimulating the formation of a cloud deck. Theory suggests that these clouds, in turn, almost certainly modify the strength of incoming sunlight, and the degree to which outgoing infrared radiation is permitted to escape from the earth to outer space. No one can say for sure, today, to what degree, if any, this alters the weather (p. 217).

Dr. Ripley summarized the feeling of the colloquium:

* * * to speak about environmental quality without at least referring to the fact of the international components and consequences of even our activity as Americans and considering our own acreage and our own problems with the environment, appears to me to be somewhat shortsighted (p. 74).

Senator Edmund Muskie argued that existing conservation policies deal too heavily with the permitted levels of resource exploitation at the expense of the equally important objective of enhancing these same resources.

To overcome this difficulty, Mr. Don Price suggested that countervailing policies might be established which would encourage and even make it profitable for private developers not to pollute, but actually upgrade the quality of our environment through the development of new resource-processing methods.

Assistant Secretary Lee mentioned that in the public health area a great deal of consideration has been devoted to the subtle health effects of many pollutants, but that the management problem of setting standards is made all the more difficult by the constantly changing character of chemicals being added to the environment. As part of the standard setting process, he proposed that it may eventually be necessary to require industries

* * * to demonstrate a positive beneficial effect, or an enhancement of the environment as suggested by Senator Muskie, rather than just an absence of deleterious effect (p. 71).

Dr. Harvey Brooks argued that we could easily move too far and

* * * place a presumption so much against new technology that in fact the disincentives to innovation would create

more penalties to the society than the protection to the environment that might be afforded (p. 71).

Standards which are derived from criteria should not be absolute and unchanging, thereby compounding further the difficulties in the management decisionmaking process.

Dr. HORNIG. * * * the minute one sets standards—standards which cost people money—the question immediately comes: what is the basis for these standards? If they don't have a strong credible basis, not only to the Congress, but to the public, we can't enforce the standards (p. 51).

Mr. PRICE. How do we set standards? How do we know what we want to do until we can define more accurately our problem and develop some better measurements for it? (p. 67).

It gets especially harder when you move away from the physical or the chemical pollution and you get into the esthetic type of consideration (p. 67).

Mr. TRAIN. * * * I'm suspicious of talk of absolute standards. I think that there must be a great deal of diversity in whatever we get at (p. 81).

Senator MUSKIE. We ought to avoid the straitjacket of Federal standards * * * (p. 44).

F. The Goals of Enhancement and Recycling

The American landscape is under extraordinary pressure from man-made refuse and other discarded material. Secretary Udall singled out the empty metal beer can as an example:

Science should come up with containers that readily degrade, disappear, or are made reusable. If we work hard at it, the expense won't be any burden and we won't foist on our grandchildren a mess of some kind as we do so frequently today (p. 50).

Dr. Gates suggested that the solution to this ubiquitous problem rests in the analogy between natural and human recycling of resources.

A natural ecosystem recycles its mineral resources. The minerals are taken up into the biomass and on death and decay are returned to the soil. Man leaves his debris of automobiles, cans, bottles, plastics, chemicals, and pavement scattered about the landscape and lets his organic refuse of garbage and sewage be funneled into the rivers and streams to be washed to sea.

He does not return the used minerals to the factory for reprocessing or the nutrients to the soil, but draws on new concentrated supplies available in nature. Clearly, such a way of life cannot continue indefinitely. Recycling will never achieve 100-percent efficiency; but if it can reach much greater efficiencies than at present, man's lifespan on earth will be much longer (p. 176).

G. New Approaches in Government

Senator Henry Jackson argued that new approaches to environmental management are now required, and urged the Colloquium to provide thoughts on the possible "action-forcing" processes that could be put into operation.

Secretary Udall pointed out the difficulty of reorganizing the executive branch on a strictly environmental basis:

Let no one suppose there is any organizational panacea for dealing with environmental problems at the Federal level * * *. To combine all programs affecting the environment in one department would obviously be physically impossible.

Each agency should designate responsible officials and establish environmental checkpoints to be sure they have properly assessed this impact.

Whether or not new institutional arrangements are accepted, the Bureau of the Budget and the Office of Science and Technology must play a central role in collecting facts, anticipating impacts and providing an early warning system for environmental protection (p. 18).

Secretary Cohen outlined existing patterns of agency leadership:

In certain discrete, well-defined areas activities have been organized under the "lead agency" concept * * *. The second pattern involves multiple rather than single agency leadership, primarily because it must accommodate a variety of interests, no one of which takes precedence (p. 38).

Dr. Donald Hornig stressed the power of the Presidency to coordinate and translate policy into action:

The principle, the authority for oversight and coordination—and in fact, Executive responsibility for management—is vested in the President; it is exercised through the Executive Office of the President, particularly by the Office of Science and Technology and the Bureau of the Budget in this respect. We have been working very hard on this problem of coordination, and we have made much progress. But, if our efforts turn out to be insufficient, further steps will surely be necessary and new organizational forms may be needed in the Executive Office (p. 32).

Assistant Secretary Baker related early experiences of the USDA with the systems approach:

We [Agriculture] are developing a Department-wide systems analysis capability for evaluating and interpreting the on-going programs. * * * We seek to organize our efforts in ways that will make them compatible with efforts that may be undertaken by other agencies (p. 26).

Secretary Weaver warned of the difficulties in obtaining a regional or "problem-shed" management of environmental quality:

There is a serious problem of stubborn resistance to change in our political institutions. This is true at the local and State level, where the term "metropolitan government" is a spark to the tinder, and where needed cooperation among neighboring local governments is sometimes resisted for fear it will lead to metropolitan government * * *. This means that at the Federal level, we should and we have helped create institutions for metropolitan subsystems that can handle problems affecting the environment of whole areas (pp. 20 and 21).

Mr. Laurance Rockefeller stressed the value of a commission comprising legislative, executive, and private sector members:

I suggest to you that an effective means of proceeding might be a Commission on Environmental Policy Organization.

It may be that this task can be done by some entity less formal than a Commission. The Citizens Advisory Committee on Recreation and Natural Beauty plans to make the environment subject one of its major interests during the coming year.

The Committee is, of course, directed to make its recommendations to the President and the President's Council on Recreation and Natural Beauty. (pp. 6 and 7.)

The Congress was discussed in terms of its own organizational confusion in treating environmental issues.

Mr. ROCKEFELLER. The layman is confused by the organization of Congress in the environmental field. (p. 6.)

Secretary UDALL. There is still a lack of overview. (P. 13.)

* * * I think Congress ought to be much less bashful about spending more money on strengthening its staff so it can provide the kind of oversight that is needed. (p. 54.)

Secretary COHEN. We recommend that the Congress examine its own organization in order to improve its ability to deal in a comprehensive and coordinated manner with the total problem of environmental quality. (p. 40.)

Senator ALLOTT. * * * Congress has abrogated its responsibilities to a great extent with respect to legislative oversight. (p. 54.)

Mr. PRICE. Congress too might have an eye to its own organization in these matters: How far it would be possible to go on from this kind of occasional informal exchange of views toward either special nonlegislative committees like the Joint Committee on the Economic Report, perhaps in conjunction with some development within the President's Office; how far pieces of jurisdiction could be carved out for legislative committees; how far the burden of coordination could be forced on the Appropriations Committee * * * (p. 69.)

PART II. ALTERNATIVES FOR CONGRESSIONAL ACTION

An impressive number and variety of legislative proposals for improving the quality of our environment have been set before the 90th Congress (see appendix). Support for action has come from diverse segments of American society: from the scientific community, from business, and from public affairs groups.

The Congress should move ahead to define clearly the desires of the American people in operational terms that the President, government agencies at all levels, the courts, private enterprise, and the public can consider and act upon.

The ultimate responsibility for protecting the human-serving values of our environment rests jointly with the legislative, executive, and judicial branches of our Government. The Congress, as a full partner, has the obligation to provide comprehensive oversight of all environment-affecting programs of the executive branch, and also to participate in the overall design of national policy, thus serving both as architect of environmental management strategy and as the elaborator of goals and principles for guiding future legal actions.

Under the present organization of the Congress, varying aspects of environmental management (including air and water pollution control, strip mine reclamation, outdoor recreation, housing and space planning in urban areas, highway construction, atmospheric research, oceanography, and rural conservation) are committed to different committees. While there has been a steady expansion of independent committee interest in specific environmental problems, the Congress so far has not evaluated this field in its entirety with a view toward evolving a coherent and unified policy for national environmental management.

It should be recognized that the declaration of a national environmental policy will not alone better or enhance the total man-environment relationship. The present problem is not simply the lack of a policy. It also involves the need to rationalize and coordinate existing policies, and to provide the means by which they may be reviewed continuously, made consistent with other national policies and ranked in reasonable priority.

The proper development of such a far-reaching body of policy raises many difficult organizational, economic and legal problems. Some individuals who were present at the July 17 colloquium suggested that a congressional mandate on the subject of environment, which would necessarily encompass a very wide range of problems and issues, would be impractical and ineffective. Yet others pointed out that equally broad mandates and satisfactory organizing concepts for managing our economic welfare and for guiding the development of atomic energy have been tested over a period of years, with effective machinery now operating both in the executive and legislative branches to evaluate the extent to which national goals and activities in these fields are meeting public expectations and needs.

In any event, to those involved in the colloquium and recent hearings on this subject, it is clear that two functions must be served: coordination and information gathering. Environmental problems cut across so many existing operational organizations that coordination in both the executive and legislative branches must be improved. Further, an effective channel of information exchange and overview must exist between the Congress and the administration. If, for example, an environmental council were established in the Executive Office of the President, as has been proposed, it should be complemented with a corresponding joint congressional committee for purposes of efficient and continued interaction.

The acquisition and evaluation of information specifically for the Congress must be improved. Raw facts and data from ecological and economic studies must be interpreted to be useful in the legislative process. This function should be performed in an organization reporting directly to the Congress; for example, a strong joint committee staff or an expanded Legislative Reference Service environmental unit.

Congress (regardless of present or future executive branch approaches) may exert a meaningful influence on the formulation of national environmental policy by embarking on one or a combination of the following steps:¹

A. A *concurrent resolution* could be introduced declaring the strong interest of the Congress in establishing national environmental policy.

This would represent a firm expression of concern on the part of the Congress about environmental deterioration, but would not be a direct confrontation with the task of defining national policy. The resolution might urge the creation of an appropriate body to investigate all matters relating to environmental management; to analyze the means and methods whereby the organization, administration, and funding of government programs affecting the environment may be improved; and, to determine the ways whereby nongovernmental entities could be encouraged to participate in overcoming further deterioration of the environment in the national interest. Hearings on the resolution could provide a forum for a wide range of opinion.

B. A *joint resolution* calling for an amendment to the Constitution on the subject of environmental values could be introduced.

This would require approval by two-thirds of the Congress and ratification by three-fourths of the States. The amending process is both slow and cumbersome. Moreover, acceptance would require a tremendous groundswell of support. However, a proposed amendment would generate wide discussion and involve the State legislatures which are vitally important in achieving environmental quality goals. The advantage of constitutional amendments lies in the unanimity of national commitment. Such an amendment for the environment could place expanded emphasis on the judicial process as an instrument of controlling future abuse of environmental values.

¹ This white paper deals with action alternatives for the Congress. Obviously the spectrum of organizational and administrative alternatives for policy in the executive branch is equally important. These range from definition of rights with court defense, to regulation by Federal agency, to standard setting, to incentives for voluntary conformance, to subsidy of technology for restoration and maintenance.

C. A *joint committee or committees on environmental management* could be established to provide across-the-board oversight on Federal programs, to conduct studies with the assistance of professional staff, and to recommend legislation. Alternatively, select or permanent committees could be established in each House.

Such committees could draw membership from existing legislative committees involved with environmental matters, and perhaps focus primarily on the review of policy and coordination matters dealt with by such groups as the Office of Science and Technology, Water Resources Council, the Council on Recreation and Natural Beauty, and various interagency coordinating committees.

D. A new *environmental surveillance unit* to conduct research and information-gathering services for the Congress could be organized.

In the past, Congress has shown reluctance to add new appendages of this sort to the legislative branch. An alternative might be an expansion of the functions of the General Accounting Office to make continuing studies of environmental conflicts and to prepare appropriate reports for transmittal to the Congress. New staff positions and additional funding would be required.

E. The Congress could establish a *nongovernmental task force* to carry out in its behalf a special study of environmental policy needs.

Such a task force could engage the services of private research organizations and draw its membership from the finest talent available in the academic community. The task force could be administered directly by the Congress or made the responsibility of some arm of the Congress such as the Legislative Reference Service, Library of Congress, which has the authority to employ experts on short-term assignments.

F. A temporary *environment management council* could be organized.

Such a council might be similar in organization and operation to the National Council on Marine Resources and Engineering Development. Its purposes could be to identify all unmet needs and opportunities in the environmental field, to study impediments to sound environmental management, conflicts of interest and gaps in existing agency and congressional activities, and to develop recommendations for legislative action within a specified period of years.

The Congress would retain an overview of the council and would control the budget for its operation. Establishment of a policy planning group in the Executive Office of the President forces the generation of proposals to the Congress. A receiving committee should be set up to correspond to this Council, similar to the Joint Economics Committee and the Council of Economic Advisers.

G. A governmental *commission* could be established for the same purposes.

The commission could be composed entirely of Congressmen, perhaps the chairman of key committees which deal with environmental matters. Or it could be a Joint Commission including representation from the executive branch and the public at large. A third type would

be a Presidential Commission with members chosen at the discretion of the Chief Executive. Through a combination of studies and hearings, the Commission could be asked to produce a blueprint for legislative action in the environmental field.

H. The *Legislative Reference Service* could be directed to add a central research and evaluation unit on environmental matters.

A precedent is the establishment of the Science Policy Research Division in 1964.

I. An *environmental counselor* could be placed on the staff of each appropriate standing committee of the Congress.

The purpose would be to increase the technical staff available for committee work. Each counselor could be given the permanent responsibility of advising the committee to which he was assigned on the probable environmental impact of all pending legislation.

PART III. ELEMENTS OF A NATIONAL POLICY FOR THE ENVIRONMENT

The following language is suggested for a statement of policy, and reflects primarily the proposed position and attitude of the Federal Government, but also could be used for the guidance of State and local governments, private sector industry and commerce, and individual actions. Activities and relationships which involve man and the physical environment (as contrasted with purely person-to-person or person-to-institution relationships) are the subject of this statement.

It is the policy of the United States that:

- Environmental quality and productivity shall be considered in a worldwide context, extending in time from the present to the long-term future.
- Purposeful, intelligent management to recognize and accommodate the conflicting uses of the environment shall be a national responsibility.
- Information required for systematic management shall be provided in a complete and timely manner.
- Education shall develop a basis of individual citizen understanding and appreciation of environmental relationships and participation in decisionmaking on these issues.
- Science and technology shall provide management with increased options and capabilities for enhanced productivity and constructive use of the environment.

The requirement to maintain and enhance long-term productivity and quality of the environment takes precedence over local, short-term usage. This policy recognizes the responsibility to future generations of those presently controlling the development of natural resources and the modification of the living landscape. Although the influence of the U.S. policy will be limited outside of its own borders, the global character of ecological relationships must be the guide for domestic activities. Ecological considerations should be infused into all international relations.

World population and food production must be brought into a controlled balance consistent with a long-term future continuation of a satisfactory standard of living for all.

Energy must be allocated equitably between production and the restoration, maintenance, and enhancement of the environment. Research should focus on solar energy and fusion energy for the long term, and on energy conversion processes with minimum environmental degradation for the short term.

In meeting the objectives of environmental management, it will be necessary to seek the constructive compromise, and resolutely preserve future options.

Priorities and choices among alternatives in environmental manipulation must therefore be planned and managed at the highest level of

our political system. All levels of government must require developments within their purview to be in harmony with environmental quality objectives.

Alteration and use of the environment must be planned and controlled rather than left to arbitrary decision. Alternatives must be actively generated and widely discussed. Technological development, introduction of new factors affecting the environment, and modifications of the landscape must be planned to maintain the diversity of plants and animals. Furthermore, such activities should proceed only after an ecological analysis and projection of probable effects. Irreversible or difficultly reversible changes should be accepted only after the most thorough study.

The system of free enterprise democracy must integrate long-term public interests with private economic prosperity. A full range of incentives, inducements, and regulations must be used to link the public interest to the marketplace in an equitable and effective manner.

Manufacturing, processing, and use of natural resources must approach the goal of total recycle to minimize waste control and to sustain materials availability. Renewable resources of air and water must be maintained and enhanced in quality for continued use.

A broad base of technologic, economic, and ecologic information will be necessary. The benefits of preventing quality and productivity deterioration of the environment are not always measurable in the marketplace. Ways must be found to add to cost-benefit analyses nonquantifiable, subjective values for environmental amenities (which cannot be measured in conventional economic terms).

Wherever the maintenance of environmental productivity or the prevention of environmental deterioration cannot be made economical for the private sector, government must find appropriate means of cost-sharing.

Ecological knowledge (data and theories) must be greatly expanded and organized for use in management decisions. Criteria must be established which relate cause and effect in conditions of the environment.

Indicators for all aspects of environmental productivity and quality must be developed and continuously measured to provide a feedback to management. In particular, the environmental amenities (recreational, esthetic, psychic) must be evaluated. Social sciences must be supported to provide relevant and dependable interpretation of information for environmental management.

Standards of quality must not be absolute—rather, they should be chosen after balancing all criteria against the total demands of society. Standards will vary with locality, must be adjusted from time to time, and we must develop our capabilities accordingly.

Decisions to make new technological applications must include consideration of unintended, unanticipated, and unwanted consequences. Technology should be directed to ameliorating these effects so that the benefits of applied science are retained.

Public awareness of environmental quality relationships to human welfare must be increased. Education at all levels should include an appreciation of mankind's harmony with the environment. A literacy as to environmental matters must be built up in the public mind. The ultimate responsibility for improved maintenance and control of the environment rests with the individual citizen.

APPENDIX

SELECTED ISSUES AND REPRESENTATIVE LEGISLATION INTRODUCED IN THE 90TH CONGRESS

SENATE

The bills are grouped as to committee referral. Nineteen committees and over 120 members are represented.

<i>Committee on Agriculture and Forestry:</i>	Bill number	Introduced by—
Resource and development projects for fish and wildlife	S. 852	Mr. McCarthy.
Pesticides: Sale and shipment of DDT prohibited	S. 1025	Mr. Nelson.
Federal Pesticide Control Act	S. 2058	Mr. Ribicoff.
<i>Committee on Commerce:</i>		
Tanker Disaster Act	S. 1586	Mr. Magnuson et al.
Alewife control, preventing damage to the ecology	S. 2123	Mr. Nelson.
Endangered Species Act	S. 2984	Mr. Yarborough.
<i>Committee on Finance:</i>		
Tax treatment of damages for crop injury through pollution	S. 84	Mr. Holland.
Incentive tax credits applicable to air or water pollution control and abatement facilities. Similar bills introduced by Senators Carlson, Cooper, and Ribicoff.	S. 187	Mr. Smathers.
<i>Committee on Foreign Relations:</i>		
Endorsement of International Biological Program	S. Con. Res. 26	Mr. Harris.
<i>Committee on Government Operations:</i>		
Select Committee on Technology and Human Environment	S. Res. 68	Mr. Muskie.
Full Opportunity and Social Accounting Act; establishment of a Council of Social Advisers.	S. 843	Messrs. Mondale, Clark, Hart, Harris, Inouye, Kennedy, McGee, Muskie, Nelson, Proxmire.
Department of Natural Resources Act	S. 886	Mr. Moss.
<i>Committee on Interior and Insular Affairs:</i>		
National Water Commission	S. 20	Mr. Jackson et al.
Wild Rivers Act: Public lands reserved for National Wild Rivers System	S. 119	Mr. Church.
National Mining and Minerals Policy Act	S. 827	Messrs. Jackson and Nelson.
Land and water conservation fund	S. 522	Mr. Allott et al.
National Lakes Preservation Act	S. 1401	Mr. Jackson et al.
Research program on natural environmental systems of the United States	S. 2001	Mr. Nelson.
Council on Environmental Quality; Investigation of U.S. ecological systems, natural resources, and environmental quality	S. 2789	Mr. Nelson.
Mined land reclamation	S. 2805	Messrs. Jackson and Kuchel.
Inventory and study of the Nation's estuaries	S. 217	Mr. Lausche.
	S. 2677	Mr. Metcalf.
<i>Committee on Labor and Public Welfare:</i>		
Annual Presidential report on science and technology	S. 1305	Mr. Allott et al.
Joint Committee on Science and Technology		
Federal Council of Health	S. 1347	Mr. Javits.
Safe Drinking Water Act	S. 3147	Mr. Hill.
<i>Committee on Public Works:</i>		
Air Quality Act of 1967	S. 780	Messrs. Muskie, Baker, Bartlett, Bayh, Bible, Boggs, Brewster, Clark, Cooper, Fong, Gruening, Hartke, Inouye, Long (Mo.), Mansfield, Metcalf, Mondale, Montoya, Morse, Murphy, Nelson, Randolph, Ribicoff, Spong, Tydings, Yarborough, Young (Ohio).
Federal Water Pollution Control Act amplified by: Industrial Air Pollution Abatement and Prevention Act	S. 847	Mr. Nelson.
Navigable Waters Pollution Control Act	S. 2410	Mr. Nelson.
Clean Lakes Act	S. 849	Mr. Nelson.
Highway Beautification Act amendment	S. 1341	Mr. Mondale et al.
Acid mine pollution control	S. 1666	Mr. Cooper.
Improved control of pollution from vessels	S. 1870	Messrs. Randolph, Clark.
R. & D. program by Department of Interior for improved control and prevention of pollution	S. 2525	Mr. Muskie et al.
Regional water pollution control advisory boards	S. 2760	Mr. Muskie et al.
Environmental Quality Prevention Act, Council on Environmental Quality	S. 2820	Mr. Tower.
Extension of Federal assistance for solid waste disposal planning	S. 3031	Mr. Nelson.
	S. 3201	Mr. Muskie et al.

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<i>Committee on Agriculture:</i>		
Federal Pesticide Control Act.....	H.R. 11846.....	Mr. Dingell.
Control of noxious plants on federally controlled land.....	H.R. 14158.....	Mr. Foley.
<i>Committee on Banking and Currency:</i>		
Federal development grants for open space land.....	H.R. 5865.....	Mr. O'Hara.
<i>Committee on Government Operations:</i>		
Consolidation of water quality management and pollution control authorities in Department of the Interior.....	H.R. 3753.....	Mr. Dingell.
Establishment of Department of Marine and Atmospheric Affairs.....	H.R. 4893.....	Mr. Moss.
Uniform land acquisition policy in urban areas.....	H.R. 4480.....	Mr. Hathaway.
Council of Social Advisers.....	H.R. 5523.....	Mr. Dwyer.
National Commission on Urban Living.....	H.R. 10261.....	Mr. Ottinger.
Establishment of Department of Health.....	H.R. 12494.....	Mr. Goodell.
	H.R. 15641.....	Mr. Rosenthal.
<i>Committee on Interior and Insular Affairs:</i>		
National scenic river system.....	H.R. 90.....	Mr. Saylor.
Investigation of the natural environmental systems in the United States by Department of the Interior.....	H.R. 258.....	Mr. Bennett.
Fresh water supply for the Northeastern United States.....	H.R. 1022.....	Mr. Ottinger.
Public Land Law Review Commission.....	H.R. 12121.....	Mr. Aspinall.
National Study Commission Act.....	H.R. 1416.....	Mr. Ullman.
National Study Commission on Water Conservation and Utilization.....	H.R. 5020.....	Mr. Wyatt.
Review of Nation's water resource problems.....	H.R. 6800.....	Mr. Helstoski.
Land and water conservation fund.....	H.R. 8578.....	Mr. Foley.
Wild and Scenic Rivers Act. Similar bill: H.R. 15429 (Mr. Fulton of Tennessee).....	H.R. 15690.....	Mr. Fraser.
Nationwide trails system.....	H.R. 4865.....	Mr. Taylor.
<i>Committee on Interstate and Foreign Commerce:</i>		
Pesticides; standards.....	H.R. 495.....	Mr. Dingell.
HUD study of potential damage to environment from erection of overhead electric transmission lines and towers.....	H.R. 4150.....	Mr. Ottinger.
Air Quality Act of 1967: The act incorporates provisions which appear as sections of numerous other bills. Some Members who authored similar bills are: Messrs. Horton, Halpern, Springer, Dingell, Adams, Eckhart, Minish, Ryan, Long of Maryland, McCarthy, Moorhead, Rosenthal, Adams, Dent, Farbstein, Delaney, Gilbert, Murphy, Van Deerlin, Walker, Mrs. Kelly, Messrs. Johnson of Pennsylvania, Patten, Howard, Corman, Helstoski, Tunney, Eilberg, Fino, Pucinski, Roybal.....	H.R. 4279.....	Mr. Staggers.
Establishes regional airshed quality commissions and airshed quality regions.....	H.R. 8601.....	Mr. Biatnik.
Prohibits construction of power transmission lines on Interior-designated public lands.....	H.R. 11509.....	Mr. Reuss.
Control and abatement of aircraft noise.....	H.R. 14933.....	Mr. Schsuer.
Solid wastes: extend and amend Public Health Service Act.....	H.R. 15763.....	Mr. Staggers.
<i>Committee on the Judiciary:</i>		
Conservation bill of rights.....	H.J. Res. 1321.....	Mr. Ottinger.
Marine Resources Conservation and Development Act.....	H.R. 17333.....	Mr. Willis.
<i>Committee on Merchant Marine and Fisheries:</i>		
Development and preservation of U.S. estuarine areas.....	H.R. 25.....	Mr. Dingell.
Navigable Water Pollution Control Act.....	H.R. 486.....	Mr. Dingell.
Protection of fish and wildlife resources from effects of Federal projects.....	H.R. 6731.....	Mr. Ottinger.
Coast Guard R. & D. related to release of harmful fluids from vessels.....	H.R. 9116.....	Mr. Howard.
Establishment of Marine Sanctuaries.....	H.R. 11584.....	Mr. Keith.
Congressional policy concerning authority to control fish and wildlife resources.....	H.R. 14849.....	Mr. Vander Jagt.
Endangered Species Act.....	H.R. 11618.....	Mr. Lennon.
Coast Guard studies of oil pollution.....	H.R. 14852.....	Mr. Keith.
Prevention of damage to fish and wildlife from pesticides.....	H.R. 15979.....	Mr. Karth.
Environmental Science Services Administration Commissioned Officers Corps Act.....	H.R. 17933.....	Mr. Garmatz.
<i>Committee on Public Works:</i>		
Federal Water Commission Act.....	H.R. 1252.....	Mr. Ryan.
Detergent Pollution Control Act.....	H.R. 8752.....	Mr. Eilberg.
Department of Interior's R. & D. program to improve the quality of lake waters.....	H.R. 10751.....	Mr. Hanley.
Federal highway system beautification.....	H.R. 11705.....	Mr. Adams.
Clean Lakes Act.....	H.R. 13407.....	Mr. Zwach.
Control of acid and mine water pollution; similar bill introduced by Mr. Beville (H.R. 16133).....	H.R. 14000.....	Mr. Nedzi.
Oil and Hazardous Substance Pollution Control Act.....	H.R. 15906.....	Messrs. Fallon, Biatnik.
Water pollution control, Federal installations: prevention of discharge of heated effluents.....	H.R. 16852.....	Mr. Dingell.

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<i>Committee on Rules:</i>		
Joint congressional committee to study problems of extraordinary pollution of air and navigable waters in the United States.....	H. Con. Res. 307.....	Mr. St. Onge.
House Standing Committee on Urban Affairs.....	H. Res. 1062.....	Mr. Cowger.
Select Committee on Technology and Human Environment.....	H. Res. 1116.....	Mr. Brown of California.
<i>Committee on Science and Astronautics:</i>		
Congressional support of international biological program.....	H. Con. Res. 6698.....	Mr. Miller of California.
Technology Assessment Board and General Advisory Council.....	H.R. 6698.....	Mr. Daddario.
Council on Environmental Quality.....	H.R. 7796.....	Mr. Dingell.
Council of Ecological Advisers.....	H.R. 13211.....	Mr. Tunney.
Do.....	H.R. 14605.....	Mr. Matsunaga.
Do.....	H.R. 14627.....	Mr. Corman.
<i>Committee on Ways and Means:</i>		
Incentive tax credit for construction of air or water pollution control facilities; similar bills presented by Messrs. Collier, Corbett, Feighan, Casey, Fuqua, Anderson, Perkins, Slack, Byrne, Relfel, Berry, King, Johnson of Pennsylvania, McClory, Zion, Whalley, Schweiher, Halpern, Schneebeli, Andrews, Steiger, Cederberg, Kupferman, Keith, Hall, MacGregor, Mize, Meskill, Smith of New York, Teague.....	H.R. 385.....	Mr. Clancy.
Clean Lakes Act.....	H.R. 16257.....	Mr. Blackburn.