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GOALS OF THE FEDERAL SOLID WASTE MANAGEMENT PROGRAM

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It is a pleasure to be here in Las Vegas at the International Public Works Congress, and to have this opportunity to address the Institute for Solid Wastes, of the International Public Works Association.

Under the circumstances, it is not, however, an enviable task to be responsive to your suggestion that I speak on goals of the Federal solid waste management program. As I am sure most of you know, it is still not certain whether new solid waste management legislation will be enacted before Congress adjourns just a few days from now.

Some months ago, the Senate passed the Solid Waste Utilization Act of 1976, and more recently the House Commerce Committee adopted provisions of the House Science Committee's research and development bill, and reported out a consolidated bill entitled "The Resource Conservation and Recovery Act of 1976." If the House passes this bill, resolution of differences between it and the Senate-passed bill--either in conference or by mutual agreement--will be required before the bill can be sent to the President. Since the final outcome will be determined by events transpiring in the Congress, which were by no means clear to me before I left Washington, D.C., and indeed may change drastically even as I am standing here, 2,000 miles away, I cannot address you with the degree of certainty and assurance that I would have liked.

On the other hand, since what the Congress has done--whether the action is consummated this year or not--is a reflection of society's perception of solid waste management and of currently acceptable options for dealing with it, I do feel assured that what we are doing and what we plan to do with our current authorities and resources is pertinent and germane. This afternoon, I will briefly comment on some of the major provisions on which the Senate and the concerned two House committees seem to be in agreement, and then highlight some of the EPA activities currently under way and planned for Fiscal Year 1977.

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All of us concerned with environmental issues should be pleased to note that the bill passed by the Senate and the bill currently under consideration in the House, which I will refer to hereafter as "the new legislation," reflect society's acceptance of the fact that resource-use and environmental and public health issues associated with solid waste management are indeed inter-related. On the surface, this may appear to be a small matter and something we have always known. If so, the surface impression is deceptive. It wasn't very long ago that Federal legislation was advocated which would have denied any Federal role in resource recovery or for that matter, in any aspect of municipal solid waste management. It was not very long ago either when the advocates of disposal and the advocates of resource recovery would line up like two opposing camps in a religious war. They still enjoy a skirmish now and then, but the war is over. The new legislation should provide the final coup de grace to such schizophrenia in the solid waste management field.

The new legislation would phase out open dumping of solid wastes, upgrade land disposal, provide Federal financial and technical assistance to State and area-wide agencies for planning and implementing waste management programs which are environmentally sound and make optimal use of opportunities for resource recovery. Those who treat, transport, store, or dispose of hazardous wastes would need to obtain permits for their activities. Limited Federal support for resource recovery demonstrations would be provided through the mechanism of loan guarantees. Expanded Federal technical assistance and information efforts would be authorized to assist States, local governments and industry in every aspect of solid waste management.

It is not surprising that the new legislation places special regulatory emphasis on hazardous wastes. No matter how much the barometer fluctuates concerning the pros and cons of environmental regulation, we have too many continuing reminders of the high price we must pay today and tomorrow for yesterday's thoughtlessness to condone the status quo in hazardous waste management. Kepone is one of the most recent and notorious reminders. Polychlorinated biphenyls (PCB's) are also among the relatively recent examples which periodically remind us of our past failings.

The results of EPA's initial studies of hazardous waste were somewhat surprising even to us. There was more of it than we had expected to find, it threatened the environment in more ways than we had thought, and it was being mismanaged to an extent that seemed likely to negate some of the progress made under air, water, and ocean pollution control legislation. Our later studies have served to strengthen what we first learned and reported to the Congress and the public in 1973.

At that time we reported that there were about 10 million tons of hazardous waste being generated annually; we now realize that figure is low by a factor of at least four. Furthermore, this amount is expected to increase by 30 percent in the next decade, in part because of increasing controls on emissions into the air, waterways, and oceans. We found in 1973 that technology was available to treat or dispose of many of these wastes without undue risk to the environment; three years of study have demonstrated to us that nearly all wastes can be detoxified, neutralized, or destroyed with current technology.

More importantly, it has become clear that land disposal is only one of many alternatives for managing hazardous wastes. While extremely important, it is the last, not the first option which should be given attention.

The solutions to the hazardous waste problems are available but they have not been widely applied because, historically, we have had neither the economic nor the regulatory climate which would encourage their use.

The economic climate is changing, and as the costs of certain materials increase, there is more of a willingness to exploit marginal resources. OSWMP has long believed that wastes should be viewed as resources, that many wastes contain recoverable energy or materials, and that these resources would be recovered whenever somebody could make a legitimate profit doing so. We used to receive calls regularly asking us how to safely dispose of spent solvents; the energy crisis forced people to look at these wastes as something of value, and the idea of destroying or landfilling such a valuable "commodity" is almost extinct.

As for the regulatory climate, the new legislation would change that in a way that would greatly encourage waste exchange, recycling and other conservation approaches, as environmentally sound disposal practices become mandatory.

The new legislation leaves no doubt that not only hazardous industrial wastes, but municipal wastes and sewage sludges as well, must be given renewed attention to protect public health and the environment and to conserve natural resources.

As in the past, residential and commercial solid wastes are of particular concern to municipalities which have borne the major financial and public health responsibility for their collection and disposal. We now must cope with some 135 million tons of municipal solid wastes a year, or more than 1,200 pounds per person per year of paper, glass, metals, plastics, food

wastes, and other discards from our homes and businesses. This tonnage has almost doubled in the past 20 years, and we estimate that it will reach 165 million tons a year by 1985.

The current annual cost of solid waste management is about \$3.5 billion. Moreover, these costs are expected to increase substantially as relatively inexpensive disposal options continue to disappear. Collection and disposal costs are projected to increase from an average of \$26 per ton in 1974 to \$50 per ton in 1985.

Most of this municipal waste ends up on the land. There are some 18,500 known land disposal sites in the United States. Some masquerade as sanitary landfills, but fewer than 6,000 of them meet the requirements of State regulations and there are unknown numbers of open dumps.

Moreover, recent investigation gives us good reason to question whether the sanitary landfill which does comply with current standards of good practice is really good enough. We are now intensifying study to determine how we can best protect groundwater supplies from leachate damage.

Municipal wastewater sludges is another waste category that is growing rapidly because of increased environmental controls in other areas; in this case, the upgrading of wastewater treatment facilities to control water pollution. Currently, sewage sludge is being generated at the rate of about five million dry tons a year, and by 1985, this quantity will have doubled.

The shortage of landfill sites, the rising costs of commercial fertilizers and the increasing quantity of residuals being generated as a result of the pollution control laws have led to renewed interest in using sewage sludges as some form of soil conditioner. However, these sludges frequently contain toxic substances, including heavy metals, which can be introduced directly or indirectly into the human food chain. While the use of such sludges on non-food chain crops is generally acceptable, the risks associated with the uptake of heavy metals make it clear that sewage sludge should be applied to food-chain crops only after careful testing and evaluation of both the sludge itself and the soils to which it would be applied.

Additionally, if such sludges are disposed of in a traditional landfill, there is danger that the heavy metals will be leached into groundwater. For EPA, identifying means of sludge management that are safe and acceptable to communities is now a matter of high priority. A guide on the proper use and disposal of sludges is now under preparation.

The seriousness of disposal problems and the widespread interest in resource recovery should not obscure the fact that collection represents

over 70 percent of the total cost of municipal solid waste management. It is essential that it be conducted as efficiently as possible.

OSWMP has made significant strides in collection productivity improvements through direct technical assistance and through dissemination of many publications.

Another aspect of solid waste management which increases costs is the poor safety record in this field. Solid waste collection has the highest accident frequency of any municipal or industrial job category. Dollar costs to the Nation of unsafe practices run into several hundred millions per year. Personal costs to the worker are incalculable. OSWMP has installed a safety reporting system in 100 cities. Based on the data provided by this reporting system, safety training programs can be designed, and equipment and systems can be modified to reduce accidents.

The new legislation underscores the fact that measures to conserve resources can reduce rising expenditures for collection and disposal, can reduce the difficulties of establishing disposal sites, and reduce the depletion of natural resources and all the adverse environmental effects associated with the extraction and processing of virgin materials.

The large technological systems designed to recover energy and materials from mixed municipal solid wastes have attracted the keen interest of industry and many local governments. A major part of the EPA resource recovery program has been devoted to the demonstration of such systems. Two projects are now essentially completed: the St. Louis project, which demonstrated production of dry-shredded fuel from solid waste for combustion with pulverized coal in existing steam-electric boilers, and the Franklin, Ohio, demonstration of the wet processing of solid waste to recover fiber. The technology from both these projects is now being utilized in commercial systems. Other EPA-supported technology demonstrations are being carried out in Baltimore, San Diego, and Delaware.

While progress is certainly being made--through private as well as public sponsorship--markets are unpredictable and the technology is not yet proven to the extent that cities do not need to exercise caution in moving into resource recovery programs. We believe that Federal involvement in resource recovery over the next few years should emphasize additional demonstrations and evaluations. The new legislation would enable us to carry out such activities.

The recovery of office wastepaper through the participation of individual employees who set aside this valuable commodity is a growing practice. Some Federal offices are doing this, and many more will be as guidelines on materials

recovery, which are mandatory for Federal facilities, begin to take effect in about a year.

Conservation goals are achieved not only by the recovery of resources but also by waste reduction measures which can cut down on the generation of waste through the redesign of products, through reuse of packaging and through other alterations in the patterns of production or consumption. The large and growing category of disposable containers and other packaging wastes have been the main focus of EPA activity in waste reduction, although the principle is applicable to all kinds of products.

After much bickering and travail, we have just issued the Guidelines on Beverage Containers, which require all beer and carbonated soft drinks sold on Federal facilities to carry at least a 5-cent deposit. The object is to encourage the return of containers for refilling or recycling, thereby reducing litter and solid waste while conserving materials and energy. A limited test of the guidelines in Yosemite National Park, plus the experiences of Oregon and Vermont with statewide mandatory deposit laws, make us fairly confident of overall positive results from the guidelines.

The new legislation would enable us to find out more about waste reduction opportunities and other options, such as market inhibitions to conservation.

One such problem is the failure of the free market to reflect collection and disposal costs in the price of products. This means that production and consumption decisions regarding material input, product design, and level of consumption are made without reference to the social value of resource conservation opportunities.

Among the possible economic incentives for conservation is the tax credit for users of secondary materials. Proposals for a recycling tax credit were defeated in Congress this year. Opponents of the proposal include environmentalists and tax reform groups who see it as a further distortion of the tax system and as one which would provide a windfall to firms already recycling. In the Senate, those opposing the recycling tax credit substituted a provision instructing EPA and the Treasury Department to work together in identifying the incentive or disincentive approach most likely to succeed. We have recently met with Treasury and hope to reach a joint position in the near future.

I am particularly pleased to say that the new legislation endorses and would help us improve our technical information and public education efforts which have been an enduring foundation of our work at the Federal level

ever since 1965 when the first national solid waste management legislation was enacted. Then as now, it was clear that the prime responsibility for proper solid waste management rests with State and local levels of government and with industry. All our activities have been directed toward providing a variety of tools so that States, local governments and industry can do the job. Over the lifetime of the program, more than 800 publications and articles have been developed and disseminated for the use of public officials and the scientific, academic, technical and lay communities. Moreover, the solid waste information retrieval system (SWIRS), an automated information system which scans, abstracts and stores solid waste management articles from all the published literature of the free world, provides search services to anyone concerned with any aspect of the solid waste management field. I suggest, by the way, that anyone here who is not acquainted with these information services stop by our booth before this conference has ended.

The new legislation would also enable us to expand general public understanding of the basic changes which must occur if we are to make real progress in this field. Our efforts in public education include cooperative projects with a variety of public interest, environmental, and industry groups.

The new legislation will provide increased Federal aid to States, to strengthen their programs in the areas of hazardous waste control, upgrading of land disposal, and planning for sound resource recovery. It has always been our position that a major key to successfully dealing with solid waste problems is to strengthen State programs, and within the limitations of our resources and authorities, we have devoted a substantial amount of our efforts in that direction. Ten years ago there were fewer than ten full-time State employees working on solid waste management. Today, there are over 800. Ten years ago there were almost no identifiable solid waste management programs in any State health or environmental agency, but now every State has a program. Well over half the States now have a specific legislative base for solid waste management activities, and many of them are beginning to add hazardous waste and resource recovery amendments to their legislation.

As I suggested at the beginning of this talk, there is a continuum in the evolution of our society's efforts to deal more intelligently with solid waste. Whether new legislation is enacted in this session of Congress or later, ongoing efforts on the part of governments and industry will continue to be relevant.

In light of this I believe it would be useful for me to conclude by citing some of the highlights of our current activities.

In FY 1977 we will have completed the studies of hazardous waste generation and management practices of 15 industries, and the analyses of the data from

those studies. Results will begin to emerge from work that has been under way for several years on the problems of leachate generation from land disposal sites. Of particular interest, I believe, will be the completion of a report on the use of liners for landfills, a report on remote sensing for disposal sites, and a report on leachate from sewage sludge disposal sites. The results of this work, which are soon to be made available, are part of what we regard as our continuing mandate to carry out problem characterization efforts.

Our control technology efforts for land disposal of wastes in Fiscal Year 1977 include the completion of a series of studies on the application of commercial-scale incinerators, the destruction of some 14 different types of hazardous wastes, the completion of the assessment of chemical treatment methods for waste pesticides, and the report of the findings of a project in which composted sewage sludges and wood wastes are used to produce a soil conditioner.

In the land disposal area, investigations of six existing leachate treatment facilities will be completed and the report issued, as well as a report on the design and performance of gas control systems for land disposal sites. A site for a large chemical and disposal demonstration project in Minnesota will be selected.

Major guidance projects in FY 77 include the development and issuance of a Hazardous Waste Management Decision-Makers Guide, and the promulgation in the Federal Register of four guidance documents on: hazardous waste transportation, use of public lands for disposal, management aspects of hazardous waste facilities, and a model State hazardous waste statute.

By the end of FY 77 the existing Sanitary Landfill Design and Operation Manual will be revised and reissued; the results of approximately three years' effort on monitoring techniques for land disposal sites will be completed, and a manual for site monitoring procedures will be issued.

A report will be issued on the use of sludge in the production of turf grass, another on the availability of non-food chain markets for sludge utilization, plus a decision guide for assisting communities in evaluating sludge management options.

Technical assistance activities in FY 77 will include a number of seminars symposiums, and conferences which will present the latest findings on solid waste management to assist industry, government officials, and representatives of the public in finding solutions to their problems.

In our refuse collection efforts we are working to improve the productivity of waste collection and to decrease the severity and numbers of injuries

which occur in collection operations. The existing Collection and Management Information System (COLMIS) provides information which is used to identify and correct inefficient and costly practices. This technique has been in application for several years. During FY 77 this system will be refined and improved in order to make it even more useful to collection system operators.

OSWMP began a series of studies on the problems of injuries in solid waste management about six years ago. From those efforts has emerged an injury-reporting information system (IRIS) which I referred to earlier. During FY 77 we will complete the operation of the 100-city IRIS network and report the findings. We are confident that these and other cities will continue to utilize IRIS on their own.

Major program efforts directed toward the goal of resource conservation are technology and markets development for energy and materials recovered from waste, technical assistance to receptor groups to advance the adoption of resource conservation systems, and measures to reduce the amounts of wastes generated.

In FY 77 the eight-volume series of resource recovery implementation guides will be completed, as well as the final reports and analyses of the St. Louis refuse-derived fuel project. Operation of the Baltimore pyrolysis demonstration project will be continued, and evaluations of the system will begin. The San Diego pyrolysis plant will begin operation and evaluations will begin. The methane-recovery-from-landfill project in Mountain View, California, will be completed and the final report published. The Franklin, Ohio, materials recovery demonstration project will be finished and the report on glass and aluminum recovery will be completed; the mid-project reports on the Somerville and Marblehead, Massachusetts, home separation and materials recovery demonstration projects will be published.

OSWMP has provided limited financial assistance to several communities to help them bridge the gap between planning and implementation of resource recovery systems. In FY 77, six of these communities will complete their projects and should begin full implementation of resource recovery implementation plans. A model State resource recovery act will be developed and issued. Technical assistance will be provided to a minimum of six cities which are in the procurement stage of resource recovery implementation, as well as to Federal agencies to assist them in the implementation of the resource recovery guidelines.

EPA has promulgated the following resource recovery guidelines: Source Separation, Resource Recovery Facilities, and Beverage Containers. These

guidelines are mandatory for the Federal government, and during FY 77 each Federal agency must determine how it will meet guideline requirements. OSWMP will be assisting these agencies in the conduct of their studies and evaluations. In addition, during FY 77, the Fourth Annual Report to Congress on Resource Recovery and Waste Reduction will be issued.

Since the inception of the Solid Waste Disposal Act, OSWMP has invested a major portion of its budget in providing assistance to State solid waste management agencies. During FY 77, our assistance to States will continue for their planning of vigorous solid waste management programs.

During FY 77, OSWMP will develop and disseminate over 100 publications, journal articles, films, tapes, speeches, and press releases.

The war against waste will go on. Reality dictates that our country must improve waste reduction practices, must change the habits that have kept us from recycling the waste stream and have allowed us to condone disposal practices which threaten public health and the environment. And the war must be won.

It must be won for reasons which Russell Train, the Administrator of EPA, expressed earlier this month when he appeared before the Portland City Club in Portland, Oregon, and which I am pleased to quote:

"I hope that our energy, our economic and our environmental experience over the past few years has made us sufficiently aware that the abundant resources of this land are not only ours to consume, but ours to conserve--and that they will remain ours to consume only as long as we have the good sense to conserve them. I hope we have finally come to understand that, in the years ahead, our harvest of natural resources will depend upon our ability to husband those resources--to be sparing rather than spendthrift, provident rather than prodigal, in their exploitation and use. If we understand these things, and act upon them, I see no reason why we cannot achieve and maintain--at one and the same time--sufficient energy, a strong economy and a sound environment."

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