EPA United States
Environmental Protection
Agency
Washington DC 20460

# "The Next Four Years: An Agenda for Environmental Results"

*Address by*
*Lee M. Thomas*
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*at the National Press Club*
*April 3, 1985*

George Bernard Shaw once observed that there were two kinds of work in the world. The first consisted of moving objects from place to place on the surface of the earth and the second consisted of telling other people to do so. While environmental protection consists largely of the first type—moving stuff from a place where it may do harm to a place where it won't-EPA's role is to define when, where, and how the move should take place.

Doing this sort of work right requires an enormous amount of careful thought. "Careful" because the laws of nature, which rule that work, are unforgiving, and not subject to amendment on Capitol Hill. Doing it right also requires a minimum amount of stability, continuity, and consistency. It can't be done in a firehouse atmosphere. If it is done "carefully" and "right", the benefits for us and our children can be immense.

For that reason, we must dedicate the next four years to obtaining measureable environmental results. We must improve the management of our programs and increase our understanding of what the Federal environmental protection enterprise can really accomplish.

Beyond that, we must begin to pursue a neglected facet of EPA's original charter. That is the integration of all environmental programs into a managed system, capable of focusing Federal authority on the reduction of environmental impacts wherever they are found, in the most effective and efficient way.

This is a pragmatic approach to a set of issues that have often been dominated by symbolic and political concerns, but I think its time has come. EPA has been given—perhaps not in the most thoughtful way possible—an almost frightening armory of powers. It can affect almost every aspect of American life—what we eat and drink and how much we pay for it, what we drive, what kind of gas we use, the kinds of jobs we can work at—from the laundry room to the board room, EPA is there.

This power makes it vital that we stay smart about where and how we insert it into our society. Americans have said over and over again that they want environmental protection, and that they are willing to sacrifice other goods to get it. What they haven't said, and won't say, is that they are willing to make sacrifices for *nothing*, or, at any rate for not much.

That is why I stress results. EPA is under obligation to show what we have accomplished in terms of concrete environmental values. Not how much money we spent, or how many people we employed or how much paper we moved. People want to know, is the air cleaner? Is

the water cleaner? Have risks been reduced? Have the *most* risks been reduced for our cost and theirs?

We must make sure that our efforts over the next four years are concentrated on the reduction of *important* environmental risks, at places and in situations where the Federal power is *essential*. It is not efficiency alone that demands this discipline.

Nothing erodes the public's tolerance of a regulatory agency more than the imposition of burdens that appear to have only petty results in terms of some substantive public benefit. At the same time, nothing erodes the public's faith in a regulatory agency more than the appearance that it is not, for whatever reason, acting aggressively in the public interest.

My perception is that we have at this point achieved a reasonable balance between these two poles. I don't want to see the pendulum start swinging again, because if it does, the Agency will once again be distracted from its important goals by controversy and political friction.

We have to be particularly careful at present because we are moving to control areas that will have a more direct effect than ever before on the daily lives of our people. For example, we have implemented inspection and maintenance programs that Congress mandated for automobiles in about thirty metropolitan areas that do not meet air pollution standards. We are in the process of removing most of the lead from gasoline, which will affect millions of people across the country. And we are looking at controlling the vapor released when you fill your gas tank, which may add to the inconvenience of filling up the family car.

As we continue to focus on improving the performance of our sewage plants, people may see their sewage bills going up. In extreme cases, as happened recently in one major city, new connections may have to stop until the necessary improvements are made. The imposition of expanded federal drinking water standards requiring increases in monitoring costs for local governments may result in water bill increases in many communities.

Perhaps the most widespread of these more personal impacts will occur in the thousands of communities affected by our programs to control hazardous waste. We must decide how much to clean up Superfund sites and where to treat, store and dispose of the more than 250 million tons of hazardous waste we produce each year. These decisions are site-specific. They may change from site to site, depending on unique site characteristics of each. In every instance, however, there is a concerned community that will be affected by what happens.

With that potential to affect people, the obligation to focus our resources to achieve important environmental

results should be obvious. But it isn't that simple.

In the first place, we always—*always*—underestimate the complexity of the environmental problem we want to control and the difficulty of operating the control program. In other words, what comes out of a committee room in Washington as a mandate often has little connection with what comes out of some pipe in Ohio. I consider this to be one of the greatest lessons that can be derived from fifteen years of Federal environmental protection efforts.

In the second place, EPA is not so much a coherent national program to manage pollution as it is a reflection of the success that many independent interests have had in getting their positions established in the law. There are air interests, drinking water interests, fish interests, and interests devoted to particular diseases.

There is the regulated community, of course, with another host of interests. And the pollution control industry, a new big business, has interests of its own. Carried to the extreme, the success of these interests could burden EPA with a set of mandates so vast that no resource base within the realm of economic reason could possibly carry all of them out.

We must choose to do the things that seem to us to be important, and do them well. We must tell people why we think they are important and why we didn't do other things we think are less important.

This is a sure recipe for getting flak, since the interests that your priorities have served take it for granted, and the interests you have not served pillory you for neglect. But the alternative is to pretend to do all the things we are on the hook for doing, and set up programs that create a lot of sound and fury without really accomplishing much. Nobody at EPA wants to do that.

What, then, are some of the important problems? Where do we think our efforts must be concentrated over the next four years to achieve the maximum environmental improvement? Such efforts must involve taking fresh looks at the problems of the older programs that form the backbone of EPA. They also include ensuring that some of the newer ones are making progress in real environmental terms.

Sewage treatment is important. We have spent nearly $40 billion on this program. The good news is that a steadily increasing percentage of Americans are being served by adequate treatment; 57 million people have been added to the system since 1972.

However, 13% of the 3600 largest systems do not comply with their permits. Others are overloaded or subject to frequent breakdowns. Many communities have chosen not to, or are not able to, operate and maintain their plants properly.

In addition, in order to meet the legal requirement for universal secondary treatment there remains billions of dollars worth of new construction needs. But half of this "unmet need" exists on streams that meet water quality standards already. Is this a good investment? If so, who should make it?

Our efforts in this area will be focused on stiffening our enforcement against municipal facilities, and providing technical advice to the states on operation and maintenance problems. Additionally, we must do this while exploring ways for converting the federal construction grants program to something states and localities can manage on their own. It was never intended to be a permanent federal program.

Controlling ozone and the other major air pollutants is another important area. While I appreciate the concern about more exotic toxic air pollutants, we should not forget that controlling the criteria pollutants remains the best way of preventing public health and property damage from the effects of air pollution.

There are still 54 urban areas that clearly do not meet ozone standards and 72 areas that do not meet carbon monoxide standards. We have until 1987 to bring all of them into compliance. Also, we are starting to see that our basic strategy for dealing with these pollutants, a strategy that assumes that the major environmental effects are in the airshed where they are released, may be mistaken in some important cases. We may have to start taking a regional view when establishing pollutant limitations.

It is now also becoming apparent that atmospheric chemistry is far more complicated than we imagined only a few years ago. Many pollutants interact; changing the level of one may decrease or increase the level of another. Part of the difficulty we have faced in deciding on the best way to deal with the acid rain issue is only the most familiar of these problems. There are others.

We intend to take this new understanding into account as we work with the states over the next four years. Naturally, we hope that they are also taken into account as Congress considers reauthorization of the Clean Air Act.

Non-point source water pollution — another important area. If we don't do something about this kind of water pollution, which comes from drainage off farms and urban areas, then on many water bodies we will never reach the ambitious goals of the Clean Water Act. It won't matter how hard we clamp down on point sources such as industrial outflows, the water will stay dirty.

Dealing successfully with this kind of water pollution is a much more difficult matter than establishing required control technologies for industrial plants.

Successful attacks must vary with locality and often involve changes in land use or agricultural practices.

What we do about non-point pollution will have an enormous impact on the nation's wetlands—and wetlands are important. They are the most productive areas for a host of environmental values. In the past two centuries we have converted about half of America's original body of wetlands in the lower 48 states to other uses.

While we have been successful in protecting some particularly critical wetlands, it remains a fact that Federal, state and local programs do not deal with wetlands consistently. Some may encourage conversion while others try to halt it. At EPA, decisions affecting wetlands are typically made case-by-case, without an adequate strategic context, and they consume inordinate amounts of time and effort.

I have the sense that we are observing an enormously important part of our heritage being nibbled away without us taking the time to state how we would like it to be, now and into the indefinite future. We need a strategy that incorporates an analytic basis for making decisions about wetlands so that EPA's activities in this area will make long-term sense.

Finally, we have the problem whose apparent importance has eclipsed that of all others in recent years—what to do about toxic substances and all that hazardous waste.

I think we recognize that nothing is more critical than continuing and completing our review of all existing chemical and pesticide products. We must ensure that our most stringent health-based standards are complied with. At the same time we cannot neglect the thorough review of new products proposed for the market.

As far as hazardous waste is concerned, I am beginning to sense a change in attitude on the Superfund side of this issue reflected in the kinds of questions we have been getting from Congress. I believe this is the result of our increased understanding of the dimensions and complexity of the problem.

In its recent report, the Office of Technology Assessment came to an important realization, one that we in EPA had reached through first-hand experience. It is that our clean-up program is operating on the cutting edge of pollution control technology. Each site presents a complex and unique problem, whose solution strains current analytic tools.

Although we do not want to slow the momentum of the Superfund program, we must realize that we run the risk of serious errors if we try to force technical solutions at sites where they are really not appropriate. OTA recognized that it makes little economic or

environmental sense to undertake costly long-term clean-up projects until we are sure that we have the technology to do it right.

Of course, we must continue to locate immediate environmental and public health threats and deal with them effectively, which is what we have been concentrating on. Our proposed extension of Superfund will enable us to continue with these important actions

If Congress keeps this in mind, I think we will get a better reauthorization than we could have expected a year ago. And four years hence we will have a good chance of saying that this seemingly intractable problem is under adequate social control

On the RCRA side, we have created a program that is going to rattle through the entire economy of this country like a golf ball down a drain pipe. We generate over 250 million tons of hazardous wastes every year During the next four years I would like to see us settle the debate about whether, where and when we should bury it, burn it, detoxify it, shoot it down a well, or stop it from being produced at all. I would like to see us make these decisions, and those connected with Superfund remedial action, on the basis of solid analysis of the risks and costs involved in all the options.

Additionally, I believe we need to pay a lot more attention to community relations in those places most affected by hazardous wastes, in the belief that local people can help us make intelligent risk management decisions when we share the available information with them. For that matter, citizens can contribute to making better decisions in all environmental areas. I intend to stress community involvement in each of our line programs.

I have been talking about concentrating on the important problems, but just as important is the manner in which we exercise this concentration. It is by now well known that pollution can move among the environmental media—from air to water, from surface water to groundwater, from water to soil, and so on.

But EPA is composed of individual programs, each carrying out a particular statutory mandate. These are typically focused on individual media It is understandable that someone under the gun for instituting water cleanup may not have paid the closest attention to the effect on the air resulting from that cleanup. But someone should have. From now on, someone will.

Let me give you a few examples. I mentioned non-point source pollution as a priority. One way of preventing pollution of surface water from agricultural run-off is to institute certain management practices designed to keep water on the land for a longer time, so

that it will soak into the soil. But when it soaks into the soil it carries with it the whole chemical brew—pesticides, fertilizers, herbicides—that we use to keep our farms productive. We now have a pesticide-in-groundwater problem of unknown proportions. Obviously, anything we do to correct non-point-source pollution will have to take this transfer into account.

I also mentioned the importance of controlling criteria pollutants. Look at the foundry industry. This is a classic "smokestack" industry where we have done a good job in controlling these pollutants. Now the foundry industry has a serious water pollution problem, over eighty percent of which, in some foundries, comes from the wet scrubbers we mandated to control the air pollution.

Finally, I mentioned the importance of improving sewage plant performance. I will add that the settling ponds and lagoons used in many of these plants are, in a number of industrial areas, a significant source of toxic air pollutants. The toxics come from industrial plants that discharge into the sewer system.

We will be able to control much of this problem through pre-treatment—the removal of the toxic material at the source. But if you have followed my argument you can see that this is yet another inter-media transfer—from water into hazardous "solid" waste, which will have to be disposed of in some way.

This circle game has to stop. It is expensive. At best it is misleading—we think we are solving a problem and we aren't. At worst, it is perverse—it may increase rather than reduce pollution risks. It seems to me that the solution to this problem is the consistent application across all Agency programs of what we have been calling risk management.

Reducing risk—to human health and environmental values—is after all the reason we remove pollutants from the environment. It is the currency of our business. By closely watching the movement of pollutants that results from regulatory options and calculating the attendant risks for each we can assure the public that our actions are indeed connected with a measureable, permanent good.

Of course, once you start working with a risk currency, EPA becomes something more than the sum of its programs. We can start looking at the risk-reduction potential of the various programs and directing resources where this potential appears to be greatest. We intend to begin doing this as a normal part of our budgetary process in the coming years.

The approach has, of course, some obvious problems. It is relatively easy to compare the risk of a single public

health effect delivered via two different media. We can agree that a one in a million chance of getting cancer from drinking water is pretty much equal to the same chance of getting it through breathing something in the air. But what about comparing the chance of human disease with the chance of harming the marine environment?

I'll give you a concrete example. Let us say that if you incinerate particularly toxic wastes on land there is always some residual risk to the surrounding human population. If you incinerate at sea, that risk virtually disappears. But there is a quite small though still calculable possibility that something could happen to the incineration ship, with unpredictable effects on marine organisms. Do you allow the ship to sail?

I can't see how you could solve dilemmas such as this without a lot of information on risks, costs and probabilities, and without the ability to respond flexibly, depending on what that information yielded. Most important, you need that kind of information to communicate to the public how the decision was made, what your values are, and how you balanced all the factors involved.

In summary, then, I see a four-point environmental management plan emerging over the next four years. First we will make sure that our priorities are those that can have important environmental results. We will take steps to ensure that measuring those results becomes a central part of Agency management. Over the next few years I want to complement and in some cases replace the largely administrative measures in our internal accountability system with indicators of environmental progress for each program.

Second, we will continue the strong movement envisioned in our environmental statutes to decentralize our programs and delegate additional responsibility to Regions and States. Environmental protection is too large a dog to be wagged by a tail clutched in Washington. We intend to do everything we can to increase the flexibility with which states and localities may implement Federal standards. We will also strengthen our technical support and oversight role. We must continue to change policies and long-standing practices that impede this movement.

In this regard, we will continue our efforts to collect information on risk in particular areas subject to unusual environmental stress. Such information gives us the ability to work with states and localities to tailor environmental solutions to the varying needs of different geographical areas. We have launched a number of projects aimed at giving states and localities the kind of information they need to make intelligent risk management decisions.

Third, we will increase the emphasis we give to community involvement and public education. At present, we require a detailed community relations plan for all Superfund sites. We have recommended that this be embodied in law. I have also asked that all the line programs develop community relations and public outreach strategies. If what we are doing makes sense, we ought to be able to communicate that to the grass roots better than we have in the past. We must also establish forums that consistently provide input to us from the public as we make decisions which affect peoples' lives.

Finally, we must plan control solutions with a multimedia perspective. We have to reduce risk and not merely transfer it. Building an integrated management structure at EPA will not be easy. But we have some of the elements in place, and we have the will to do it. We must focus our resources on the most important problems, and fix them so that they stay fixed.

And we can't do that without some kind of measurable risk management integrated across environmental media. We can't do that without the knowledgeable participation of states and localities. Most of all, we can't do that without strong public support.

Thank you.

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# Assessing and Managing Risks in the Real World

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*U.S. Environmental Protection Agency*
*before the*
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*San Antonio, Texas*
*March 25, 1985*

It is a pleasure for me to be here this morning to share with you my thoughts on the state of our environment and how we go about protecting it. During the two years or so that I have been with EPA, I have learned a great deal about the complexity of this process.

Managing an agency such as EPA is a tremendous challenge. On the one hand, we have a clear mission from Congress and the support of all Americans. On the other, we must be able to see beyond that mission in its abstract sense to appreciate the impact of our decisions.

It is not uncommon, in making regulatory decisions, to find ourselves between the proverbial rock and hard place. For every issue, there seems to be a corps of vocal advocates and a cadre of equally vocal opponents. The problem is that these groups tend to change from issue to issue. And, of course, the issues themselves never seem to end.

Now I know why Bill Ruckelshaus had a smile on his face the day he handed me the keys to the Administrator's office.

The rulemaking process at EPA today is really a series of tradeoffs. There is a general realization among all who actively participate in this process—environmentalists, the regulated community, and even the media — that we must find an optimum pathway to our goals. That pathway must ensure that we continue to enjoy economic prosperity and growth, but not at the expense of our environment.

We achieve these objectives by carefully assessing the risks we face as an industrial society, and managing those risks effectively.

To assess the risk at hand, we gather as many facts as possible about the problem. This is a scientific process in which experts thoroughly review the extent of our knowledge and carefully design and conduct experiments to expand that knowledge. This scientific process gives us a basis for understanding the risk we face. It tells us what the risk is, what we know about it, and who is exposed.

Then comes the hard part—risk management—deciding what to do about a problem once we are sure there is one. Based upon our assessment of the nature and extent of the risk, we must devise a way of dealing with it. The options before us include such things as new regulations, additional reporting requirements, new outreach programs or some combination of these and other approaches.

Our recent decision to take most of the lead out of gasoline is a very important example of how the risk assessment/risk management process works. The increasing evidence of the injury done to children by

airborne lead is undeniable. We know lead threatens hundreds of thousands of children, particularly in the inner city.

We are not alone in our assessment of this risk. The Centers for Disease Control recently lowered the level of lead in blood it says constitutes serious toxicity. And, beyond the problem with children, there are new indications emerging that lead may increase high blood pressure in adults.

Last month, I signed regulations that will phase down the lead content of gasoline by more than 90% this year. The process will take place in two steps. And by January 1986, lead in gasoline will be limited to no more than one tenth of a gram per gallon.

As a result, we will substantially reduce the concentration of airborne lead, 80% of which comes from gasoline. We hope our requirements will help to equalize the price of leaded and unleaded gasolines. This, in turn, should minimize any financial incentive for motorists to put leaded fuel in cars designed for unleaded, thereby increasing the emission of other pollutants as well as lead.

Misfueling has been a problem in the past. We estimate as many as 16% of all vehicles designed to use unleaded gas are fueled illegally with cheaper leaded gas.

Our standard is a stringent one. But it is justified by the substantial benefits to be gained by all Americans. And we are convinced that the refining industry can meet the standard.

Bear in mind, this may not be the end of the line for the lead-in-gasoline issue. We are looking closely at whether lead should be banned entirely as a gasoline additive.

The rule we have adopted will provide net benefits of more than a billion dollars a year when we compare health-related savings and lower auto maintenance costs with increased production costs. And it is very possible that we have understated the full benefits of lead reduction.

If new data on the relationship between blood lead and blood pressure hold up, the medical value of our standard will increase by several billion dollars per year This is a highly cost-effective regulation.

I am aware that implementing this rule will bring with it a certain amount of disruption to the refining industry. Our objective, of course, is to substantially cut lead levels in our air, and to do it as soon as possible. We want to work with your industry to accomplish this goal as efficiently as possible.

To ease the potential for capacity problems, I am announcing today that I have signed final rules to allow the banking of lead rights. These rules will extend the successful lead trading program through 1987, and would give refineries more flexibility in meeting the new standard without reducing its effectiveness.

Banking will allow refiners to cut lead use now, ahead of schedule, and use that lead later in meeting the new standard. We estimate it will save refiners more than $200 million without increasing the amount of lead in gasoline. Our banking provisions are retroactive to January 1, 1985. We will give you full credit for the reductions you have already achieved.

A related risk-management decision of importance to your industry deals with achieving the 1987 attainment date for ozone extension areas, which embrace about half of the country's population. We are convinced the lead rule will help, as will expanded inspection and maintenance programs.

They are not going to solve the entire problem, however, and we are exploring alternatives. One problem is that many vehicles are not meeting our evaporative emission standards. This increases hydrocarbon loadings and thereby ozone. As much as one-half of the hydrocarbons come from motor vehicles, and now up to half of those are evaporative emissions.

Two factors may be contributing to this situation. First, controls may not be as effective as we had expected. They may need improvement. Second, the volatility of gasoline is higher than that of the test fuels used to certify vehicles. We are exploring a range of options.

We are releasing test results and soliciting public comments, in preparation for workshops as early as this summer. At the same time, we are sensitive to the interaction between our new lead rule and the costs of volatility control.

Other options for vapor recovery are also being studied, including controls at service stations and on vehicles. We've received many comments on a study released last fall. Not surprisingly, those in the petroleum industry think onboard controls make sense, while the auto manufacturers find a lot to like about Stage II controls at service stations.

There are a number of other EPA programs with important implications for the refining industry where we must apply our risk assessment/risk management skills. I will be very honest with you. In some areas, we are moving in the right direction. We have sound, obtainable objectives. In others, I'm not as certain.

I've already cited our lead regulation as one I believe is a sound product of the risk assessment/risk management process. It is one we initiated based upon reliable data, thorough analysis, and careful assessment of costs and benefits.

We cannot always be sure that the impact of our efforts is so clearly positive. This is particlarly true when we are carrying out a statutory mandate that, however well intended, may have been enacted on the basis of limited information.

For example, when it enacted amendments to the Resource Conservation and Recovery Act last year, Congress imposed a number of important new responsibilities on EPA. Not all of them will pay such obvious benefits as our lead rule.

RCRA now broadens the reach of EPA's hazardous waste regulatory program to those businesses generating relatively small quantitites of regulated wastes. On the surface, this would seem to be a good idea.

Until the new amendments were developed, our cradle-to-grave regulations applied only to those who generated more than 1,000 kilograms of hazardous waste each month. We know of approximately 15,000 such generators. Combined, they produce some 264 million metric tons of waste annually. That's about 99.5% of all hazardous wastes generated in this country.

RCRA's new small-quantity-generator provisions bring into the regulatory system another 175,000 firms. Yet they generate only half of one percent of the total volume. So, as a result of statutory requirements, we now must vastly and rapidly expand the size of our regulated universe. In so doing, we pick up a very small amount of wastes which had escaped our net in the first place.

My concern is this kind of requirement may serve only to make our overall hazardous waste management program less effective. We must devote substantial resources to the small-quantity-generator program on the assumption that a problem exists, with severe constraints in the law, requiring a full regulatory solution. Additionally, a portion of our enforcement resources will now have to be oriented toward these 175,000 generators.

I question whether our limited resources are best spent on these activities. I question whether the American people are best served by the requirement for such a program before we have fully defined the problem to be addressed and determined how best to manage it, i.e. risk assessment/risk management.

Another new RCRA provision about which I have reservations is the underground storage tank program. There are more than 2 million underground tanks in the U.S.today; about 100,000 new ones are installed each year. Congress, in the new RCRA law, told us to develop specific rules and performance standards for these tanks in a relatively short time-frame, although we are just beginning the data collection effort needed to determine the extent of the problem they pose.

The program is bound to become a massive, resource-intensive undertaking. It will involve a long and complicated regulatory process. It will probably be very difficult to implement and enforce, due in part to our lack of expertise in this area and because of its sheer size.

Both the small-quantity generator and underground storage tank programs are examples of major regulatory responsibilities imposed on EPA by Congress in the absence of sound risk assessment/risk management proceedings. I am uncertain at this point as to how well we can implement either given the specificity and time frames in the law.

This is not to suggest that everything in the new RCRA statute is ill-conceived. To the contrary, regulation of small quantity generators and underground storage tanks may be necessary, but we will need time to assess risks and recommend solutions before the law mandates remedies. Another important provision of RCRA calls on EPA to move forward with efforts to ban the land disposal of many hazardous wastes.

We have learned the hard way over the years that land disposal is the least desirable method of hazardous waste management. We have the data we need to assess the risks of land disposal The agency was proceding with land disposal bans on its own, even in the absence of this specific Congressional mandate.

Finally, I think we should look for a moment at our Superfund program as an example of how EPA has employed a Congressional mandate effectively We have used many principles of risk assessment and risk management to build the Superfund cleanup program. We will continue to do so.

First of all, in developing our list of national priority sites requiring long-term cleanup, we assess each potentially hazardous site. If it poses an immediate threat to human health or the environment, we take emergency steps to eliminate the danger. At the same time, we do detailed studies at those sites that appear to pose long-term hazards. Where we determine sites represent a chronic hazard, we place them on our priority list.

After a slow start, our cleanup program has during the last two years made substantial progress. By the end of the current fiscal year, we will have taken emergency actions at nearly 650 sites. Long-term cleanup will have begun at nearly 500.

A month ago, President Reagan sent to Congress a proposal to reauthorize Superfund for another five years. The $5.3 billion package would triple the size of the current fund. It would also focus Superfund's authorities on the most serious problems first — uncontrolled hazardous waste dumps. In addition, the President's program strengthens our enforcement tools and provides for a reliable source of adequate funding through 1990.

All of this brings me back to the philosophical question I started to ask in the beginning. Once we have decided that a given risk needs managing, exactly what do we do about it? And if we can't create a risk-free society, how do we determine an acceptable level of risk? How much do we spend to reduce risk?

There are no fast, cheap or easy answers to these and other questions dealing with risk. What we must do is address all of our environmental challenges squarely, assess the relative risks of each, and determine who best to manage them. To do this effectively, we must involve the public in the risk-management process.

We must build trust among our citizens. They must know that EPA, industry, environmental organizations and others are working together to address the most serious hazards facing the American environment.

We will spend billions on environmental and health protection over the next couple of decades. That's a major investment, most of it funded by taxpayers and purchasers of products. We should make certain that every penny is spent to get real, solid, measurable results. That's our bottom line at EPA. That's what we are trying to achieve.

Thank you very much.

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For that reason, we must dedicate the next four years to obtaining measureable environmental results. We must improve the management of our programs and increase our understanding of what the Federal environmental protection enterprise can really accomplish.

Beyond that, we must begin to pursue a neglected facet of EPA's original charter. That is the integration of all environmental programs into a managed system, capable of focusing Federal authority on the reduction of environmental impacts wherever they are found, in the most effective and efficient way.

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We must make sure that our efforts over the next four years are concentrated on the reduction of *important* environmental risks, at places and in situations where the Federal power is *essential*. It is not efficiency alone that demands this discipline.

Nothing erodes the public's tolerance of a regulatory agency more than the imposition of burdens that appear to have only petty results in terms of some substantive public benefit. At the same time, nothing erodes the public's faith in a regulatory agency more than the appearance that it is not, for whatever reason, acting aggressively in the public interest.

My perception is that we have at this point achieved a reasonable balance between these two poles. I don't want to see the pendulum start swinging again, because if it does, the Agency will once again be distracted from its important goals by controversy and political friction.

We have to be particularly careful at present because we are moving to control areas that will have a more direct effect than ever before on the daily lives of our people. For example, we have implemented inspection and maintenance programs that Congress mandated for automobiles in about thirty metropolitan areas that do not meet air pollution standards. We are in the process of removing most of the lead from gasoline, which will affect millions of people across the country. And we are looking at controlling the vapor released when you fill your gas tank, which may add to the inconvenience of filling up the family car.

As we continue to focus on improving the performance of our sewage plants, people may see their sewage bills going up. In extreme cases, as happened recently in one major city, new connections may have to stop until the necessary improvements are made. The imposition of expanded federal drinking water standards requiring increases in monitoring costs for local governments may result in water bill increases in many communities

Perhaps the most widespread of these more personal impacts will occur in the thousands of communities affected by our programs to control hazardous waste. We must decide how much to clean up Superfund sites and where to treat, store and dispose of the more than 250 million tons of hazardous waste we produce each year. These decisions are site-specific. They may change from site to site, depending on unique site characteristics of each. In every instance, however, there is a concerned community that will be affected by what happens.

With that potential to affect people, the obligation to focus our resources to achieve important environmental

results should be obvious. But it isn't that simple.

In the first place, we always—*always*—underestimate the complexity of the environmental problem we want to control and the difficulty of operating the control program. In other words, what comes out of a committee room in Washington as a mandate often has little connection with what comes out of some pipe in Ohio. I consider this to be one of the greatest lessons that can be derived from fifteen years of Federal environmental protection efforts.

In the second place, EPA is not so much a coherent national program to manage pollution as it is a reflection of the success that many independent interests have had in getting their positions established in the law. There are air interests, drinking water interests, fish interests, and interests devoted to particular diseases.

There is the regulated community, of course, with another host of interests. And the pollution control industry, a new big business, has interests of its own. Carried to the extreme, the success of these interests could burden EPA with a set of mandates so vast that no resource base within the realm of economic reason could possibly carry all of them out.

We must choose to do the things that seem to us to be important, and do them well. We must tell people why we think they are important and why we didn't do other things we think are less important.

This is a sure recipe for getting flak, since the interests that your priorities have served take it for granted, and the interests you have not served pillory you for neglect. But the alternative is to pretend to do all the things we are on the hook for doing, and set up programs that create a lot of sound and fury without really accomplishing much. Nobody at EPA wants to do that.

What, then, are some of the important problems? Where do we think our efforts must be concentrated over the next four years to achieve the maximum environmental improvement? Such efforts must involve taking fresh looks at the problems of the older programs that form the backbone of EPA. They also include ensuring that some of the newer ones are making progress in real environmental terms.

Sewage treatment is important. We have spent nearly $40 billion on this program. The good news is that a steadily increasing percentage of Americans are being served by adequate treatment; 57 million people have been added to the system since 1972.

However, 13% of the 3600 largest systems do not comply with their permits. Others are overloaded or subject to frequent breakdowns. Many communities have chosen not to, or are not able to, operate and maintain their plants properly.

In addition, in order to meet the legal requirement for universal secondary treatment there remains billions of dollars worth of new construction needs. But half of this "unmet need" exists on streams that meet water quality standards already. Is this a good investment? If so, who should make it?

Our efforts in this area will be focused on stiffening our enforcement against municipal facilities, and providing technical advice to the states on operation and maintenance problems. Additionally, we must do this while exploring ways for converting the federal construction grants program to something states and localities can manage on their own. It was never intended to be a permanent federal program.

Controlling ozone and the other major air pollutants is another important area. While I appreciate the concern about more exotic toxic air pollutants, we should not forget that controlling the criteria pollutants remains the best way of preventing public health and property damage from the effects of air pollution.

There are still 54 urban areas that clearly do not meet ozone standards and 72 areas that do not meet carbon monoxide standards. We have until 1987 to bring all of them into compliance. Also, we are starting to see that our basic strategy for dealing with these pollutants, a strategy that assumes that the major environmental effects are in the airshed where they are released, may be mistaken in some important cases. We may have to start taking a regional view when establishing pollutant limitations.

It is now also becoming apparent that atmospheric chemistry is far more complicated than we imagined only a few years ago. Many pollutants interact; changing the level of one may decrease or increase the level of another. Part of the difficulty we have faced in deciding on the best way to deal with the acid rain issue is only the most familiar of these problems. There are others.

We intend to take this new understanding into account as we work with the states over the next four years. Naturally, we hope that they are also taken into account as Congress considers reauthorization of the Clean Air Act.

Non-point source water pollution — another important area. If we don't do something about this kind of water pollution, which comes from drainage off farms and urban areas, then on many water bodies we will never reach the ambitious goals of the Clean Water Act. It won't matter how hard we clamp down on point sources such as industrial outflows, the water will stay dirty.

Dealing successfully with this kind of water pollution is a much more difficult matter than establishing required control technologies for industrial plants.

Successful attacks must vary with locality and often involve changes in land use or agricultural practices.

What we do about non-point pollution will have an enormous impact on the nation's wetlands—and wetlands are important. They are the most productive areas for a host of environmental values. In the past two centuries we have converted about half of America's original body of wetlands in the lower 48 states to other uses.

While we have been successful in protecting some particularly critical wetlands, it remains a fact that Federal, state and local programs do not deal with wetlands consistently. Some may encourage conversion while others try to halt it. At EPA, decisions affecting wetlands are typically made case-by-case, without an adequate strategic context, and they consume inordinate amounts of time and effort.

I have the sense that we are observing an enormously important part of our heritage being nibbled away without us taking the time to state how we would like it to be, now and into the indefinite future. We need a strategy that incorporates an analytic basis for making decisions about wetlands so that EPA's activities in this area will make long-term sense.

Finally, we have the problem whose apparent importance has eclipsed that of all others in recent years—what to do about toxic substances and all that hazardous waste.

I think we recognize that nothing is more critical than continuing and completing our review of all existing chemical and pesticide products. We must ensure that our most stringent health-based standards are complied with. At the same time we cannot neglect the thorough review of new products proposed for the market.

As far as hazardous waste is concerned, I am beginning to sense a change in attitude on the Superfund side of this issue reflected in the kinds of questions we have been getting from Congress. I believe this is the result of our increased understanding of the dimensions and complexity of the problem.

In its recent report, the Office of Technology Assessment came to an important realization, one that we in EPA had reached through first-hand experience. It is that our clean-up program is operating on the cutting edge of pollution control technology. Each site presents a complex and unique problem, whose solution strains current analytic tools.

Although we do not want to slow the momentum of the Superfund program, we must realize that we run the risk of serious errors if we try to force technical solutions at sites where they are really not appropriate. OTA recognized that it makes little economic or

environmental sense to undertake costly long-term clean-up projects until we are sure that we have the technology to do it right.

Of course, we must continue to locate immediate environmental and public health threats and deal with them effectively, which is what we have been concentrating on. Our proposed extension of Superfund will enable us to continue with these important actions.

If Congress keeps this in mind, I think we will get a better reauthorization than we could have expected a year ago. And four years hence we will have a good chance of saying that this seemingly intractable problem is under adequate social control.

On the RCRA side, we have created a program that is going to rattle through the entire economy of this country like a golf ball down a drain pipe. We generate over 250 million tons of hazardous wastes every year During the next four years I would like to see us settle the debate about whether, where and when we should bury it, burn it, detoxify it, shoot it down a well, or stop it from being produced at all. I would like to see us make these decisions, and those connected with Superfund remedial action, on the basis of solid analysis of the risks and costs involved in all the options.

Additionally, I believe we need to pay a lot more attention to community relations in those places most affected by hazardous wastes, in the belief that local people can help us make intelligent risk management decisions when we share the available information with them. For that matter, citizens can contribute to making better decisions in all environmental areas. I intend to stress community involvement in each of our line programs.

I have been talking about concentrating on the important problems, but just as important is the manner in which we exercise this concentration. It is by now well known that pollution can move among the environmental media—from air to water, from surface water to groundwater, from water to soil, and so on.

But EPA is composed of individual programs, each carrying out a particular statutory mandate. These are typically focused on individual media It is understandable that someone under the gun for instituting water cleanup may not have paid the closest attention to the effect on the air resulting from that cleanup. But someone should have. From now on, someone will.

Let me give you a few examples. I mentioned non-point source pollution as a priority. One way of preventing pollution of surface water from agricultural run-off is to institute certain management practices designed to keep water on the land for a longer time, so

that it will soak into the soil. But when it soaks into the soil it carries with it the whole chemical brew—pesticides, fertilizers, herbicides—that we use to keep our farms productive. We now have a pesticide-in-groundwater problem of unknown proportions. Obviously, anything we do to correct non-point-source pollution will have to take this transfer into account.

I also mentioned the importance of controlling criteria pollutants. Look at the foundry industry. This is a classic "smokestack" industry where we have done a good job in controlling these pollutants. Now the foundry industry has a serious water pollution problem, over eighty percent of which, in some foundries, comes from the wet scrubbers we mandated to control the air pollution.

Finally, I mentioned the importance of improving sewage plant performance. I will add that the settling ponds and lagoons used in many of these plants are, in a number of industrial areas, a significant source of toxic air pollutants. The toxics come from industrial plants that discharge into the sewer system

We will be able to control much of this problem through pre-treatment—the removal of the toxic material at the source. But if you have followed my argument you can see that this is yet another inter-media transfer—from water into hazardous "solid" waste, which will have to be disposed of in some way.

This circle game has to stop. It is expensive. At best it is misleading—we think we are solving a problem and we aren't At worst, it is perverse—it may increase rather than reduce pollution risks. It seems to me that the solution to this problem is the consistent application across all Agency programs of what we have been calling risk management.

Reducing risk—to human health and environmental values—is after all the reason we remove pollutants from the environment. It is the currency of our business. By closely watching the movement of pollutants that results from regulatory options and calculating the attendant risks for each we can assure the public that our actions are indeed connected with a measureable, permanent good.

Of course, once you start working with a risk currency, EPA becomes something more than the sum of its programs. We can start looking at the risk-reduction potential of the various programs and directing resources where this potential appears to be greatest. We intend to begin doing this as a normal part of our budgetary process in the coming years.

The approach has, of course, some obvious problems. It is relatively easy to compare the risk of a single public

health effect delivered via two different media. We can agree that a one in a million chance of getting cancer from drinking water is pretty much equal to the same chance of getting it through breathing something in the air. But what about comparing the chance of human disease with the chance of harming the marine environment?

I'll give you a concrete example. Let us say that if you incinerate particularly toxic wastes on land there is always some residual risk to the surrounding human population. If you incinerate at sea, that risk virtually disappears. But there is a quite small though still calculable possibility that something could happen to the incineration ship, with unpredictable effects on marine organisms. Do you allow the ship to sail?

I can't see how you could solve dilemmas such as this without a lot of information on risks, costs and probabilities, and without the ability to respond flexibly, depending on what that information yielded. Most important, you need that kind of information to communicate to the public how the decision was made, what your values are, and how you balanced all the factors involved.

In summary, then, I see a four-point environmental management plan emerging over the next four years. First we will make sure that our priorities are those that can have important environmental results. We will take steps to ensure that measuring those results becomes a central part of Agency management. Over the next few years I want to complement and in some cases replace the largely administrative measures in our internal accountability system with indicators of environmental progress for each program.

Second, we will continue the strong movement envisioned in our environmental statutes to decentralize our programs and delegate additional responsibility to Regions and States. Environmental protection is too large a dog to be wagged by a tail clutched in Washington. We intend to do everything we can to increase the flexibility with which states and localities may implement Federal standards. We will also strengthen our technical support and oversight role. We must continue to change policies and long-standing practices that impede this movement.

In this regard, we will continue our efforts to collect information on risk in particular areas subject to unusual environmental stress. Such information gives us the ability to work with states and localities to tailor environmental solutions to the varying needs of different geographical areas. We have launched a number of projects aimed at giving states and localities the kind of information they need to make intelligent risk management decisions.

Third, we will increase the emphasis we give to community involvement and public education. At present, we require a detailed community relations plan for all Superfund sites. We have recommended that this be embodied in law. I have also asked that all the line programs develop community relations and public outreach strategies. If what we are doing makes sense, we ought to be able to communicate that to the grass roots better than we have in the past. We must also establish forums that consistently provide input to us from the public as we make decisions which affect peoples' lives.

Finally, we must plan control solutions with a multimedia perspective. We have to reduce risk and not merely transfer it. Building an integrated management structure at EPA will not be easy. But we have some of the elements in place, and we have the will to do it. We must focus our resources on the most important problems, and fix them so that they stay fixed.

And we can't do that without some kind of measurable risk management integrated across environmental media. We can't do that without the knowledgeable participation of states and localities. Most of all, we can't do that without strong public support.

Thank you.