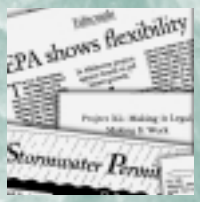
United States
Environmental Protection
Agency

Office of Policy,
Economics, and
Innovation (1801)

EPA100-K-00-001
September 2000

PROJECT XL



Encouraging Innovation, Delivering Results

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With Project XL, we sent an important message that we valued innovation in environmental protection and, above all, wanted results. We opened the door for a promising set of regulatory experiments to begin.

EPA Opens the Door for Experimentation

In 1995, EPA launched an unprecedented new program, known as Project XL to test innovative ideas that demonstrate environmental eXcellence and Leadership by those who must comply with EPA regulations and policies. Basically, we said this to all of our partners: If you have an idea that offers better environmental protection results than what would be achieved under current requirements, then we will work with you and other interested parties to put those ideas to the test. With this single action, we sent an important message that we valued innovation in environmental protection and, above all, wanted results. We opened the door for a promising set of regulatory experiments to begin.

For five years, these experiments have enabled our society to explore fundamentally new approaches to environmental protection. By working closely with businesses, communities, states, and other government agencies, we have been using pilot projects to test bold new ideas that promise better results for the future.

What led EPA to make this offer? Quite simply, a strong interest in accelerating environmental progress. Recognizing the growing complexity of environmental problems looming before us, we seized the opportunity to modify certain constraints and reduce some costs that could be associated with environmental regulations. We also understood that others had a great deal of insight and expertise that should be applied to environmental problem solving.

Features of Project XL:

Superior environmental protection

Cost savings and reduced paperwork

Stakeholder involvement

Innovation/pollution prevention

Transferability

Feasibility

Monitoring, reporting and evaluation

No shifting of risk burden

Project XL Delivers Results

From the beginning, Project XL has been one of the most challenging endeavors EPA has ever undertaken. After all, we are a regulatory agency, and with Project XL we are exploring better alternatives to our own regulations and policies. We were able to initiate this program because we set high goals for superior environmental performance and insisted on public involvement in developing projects and public accountability for results. And yet, not surprisingly, we faced difficult issues in the early stages. We wrestled with questions like: "What kind of flexibility should be allowed? How do we define "better results"? What can we do within the existing laws? Who needs to be involved in the discussions?" By investigating these concerns, we learned a lot, made adjustments to the program, and found ways to be more responsive to stakeholder needs. As a result, Project XL is now an active proving ground for new environmental solutions.

Today, EPA has experiments to improve environmental protection underway with a variety of partners: Fortune 500 companies, small businesses, and state and local governments. Each project is designed to produce important benefits for the sponsor, and indeed they are doing so. Companies are cutting costs, communities are getting priority concerns addressed, and regulatory agencies are finding ways to target their limited resources more efficiently.

But, the intent was never to serve only a select few. The goal of Project XL continues to be much broader—to find solutions that can be integrated into our environmental protection system for everyone's benefit. Today, that goal is being achieved in two ways:

- **First, by creating more options for environmental management.** The United States has one of the strongest systems of environmental protection in the world, but it is neither perfect nor complete. Everyday, conditions are changing. New technology is entering the market, better information is becoming available, and environmental professionals are gaining more understanding and experience in managing their responsibilities. These and other developments mean the system must change too. Perhaps we need to modify a regulation that inadvertently discourages facilities from pursuing environmental improvement, or maybe we see ways to make certain regulatory procedures more efficient. By giving sponsors a chance to identify problems and potential solutions, Project XL provides a means for improving the regulatory system that protects us all.
- **Second, by taking a more comprehensive approach to environmental management.** In the past, most environmental problems have been approached almost entirely by media: Clean Air Act regulations address air pollution; Clean Water Act regulations focus on improving water quality, etc. This approach has some efficiencies and it has helped remedy obvious problems. But it has not proven to be a complete solution, and in fact, serious problems have been left behind. By emphasizing more comprehensive, integrated approaches to environmental protection, such as looking at facilities and communities as a whole, Project XL helps bridge this gap. It helps us to optimize environmental, community, and business outcomes by stepping back and considering all the issues affecting environmental quality.

This report highlights some of the promising innovations achieved through Project XL to date. EPA is encouraged by these preliminary results, and proud that they have come through partnership with others.

PROJECT XL

Creating More Options for Environmental Management

Project XL is providing a forum for companies to test new technologies and alternative regulatory approaches that eventually might be used by more companies to boost efficiency and achieve better environmental protection.

Making the Most of Innovative Technologies

Do you remember the prevalence and importance of typewriters just 15 years ago? If so, you can probably appreciate the speed at which new technologies can take hold and the boost they can provide in terms of efficiency. These same types of technological leaps that have made typewriters virtually obsolete are taking place in the environmental field, and they hold real promise for improving environmental results.

Project XL provides a way to move state-of-the-art environmental technology from the fringes into the mainstream. It does so by providing companies with the incentives they need to make the requisite testing and evaluation worth their time and investment. If a technology proves successful and the results are made known, then others become more receptive to its use. Over time, this means better technology getting better results for a growing number of people.

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Georgia-Pacific Corporation. At its Big Island, Virginia pulp and paper mill, George-Pacific is testing a new "gasification" technology to control emissions of hazardous pollutants. One of the byproducts of their manufacturing is a "black liquor," which contains a mix of chemicals used in pulp production. With conventional technology, these chemicals are recovered through a process of evaporation and combustion. Preliminary testing shows the new gasification technology uses less energy and significantly lowers emissions of hazardous pollutants. However, the Georgia-Pacific test is the first commercial-scale demonstration and there is some risk the technology may not work as well as expected. So that testing of this promising new technology can proceed, EPA will temporarily exempt the company from new hazardous waste emission requirements that are expected to become effective during the experiment.

The United States Postal Service. In Denver, Colorado, the U. S. Postal Service (USPS) is testing new technology to reduce air emissions from its fleet of delivery vehicles. This is being accomplished by replacing high-emission vehicles with newer alternative fuel vehicles that emit less air pollution. Along with replacing more than 800 vehicles, USPS will be encouraging the use of these vehicles by others. They will do so by demonstrating their value and by developing the infrastructure that is needed to operate these vehicles.

Molex Incorporated. At its electroplating facility in Lincoln, Nebraska, Molex is using new technology to reduce the metal loadings in its wastewater. The new technology separates the wastewater streams from individual metal plating processes, enabling the company to recover different metal contaminants, such as lead and copper, from its wastewater. Molex expects this new technology will reduce metal loadings to the community's wastewater treatment plant by 50 percent.

International Business Machines (IBM) Incorporated. In Essex Junction, Vermont, IBM is testing another technology for reducing metal contaminants in its waste stream. The new process, which is approximately 30 to 40 percent more efficient than the previous one, enables IBM to deposit a layer of metal on its wafers much more efficiently, maximizing metal use in manufacturing and minimizing releases into the plant's wastewater system.

International Paper. At its pulp and paper plant in Jay, Maine, International Paper is testing new technology for monitoring air emissions. Under current EPA regulations, the company is required to measure specific pollutants in stack emissions once a year. But through Project XL, International Paper is developing and testing an alternative monitoring system that will provide the company and surrounding community with much more information about the facility's emissions. This will be accomplished with a computer-based system that can accurately predict pollutant emissions on a continuous basis. The results should enable mill operators to identify opportunities to reduce emission rates and prevent pollution from occurring in the first place. In addition, it will provide the surrounding community with better information about emissions from the facility.

Progressive Insurance Company. This national insurance company is showing that "service" industries also have a role to play in advancing environmental technology. Progressive Insurance proposed a unique voluntary program that will base automobile insurance rates, in part, on specific driving factors, such as mileage and time of travel, that affect emissions and ultimately the atmosphere. This new program is made possible through the use of a global positioning system, which is installed in customers' vehicles. Information is recorded by the device, and the company then sets its rate based on the collected data. As a result, customers have an incentive to carefully consider the consequences—for the environment and their own pocketbook—associated with their driving patterns.

Flexible Compliance With Environmental Requirements

One criticism of federal environmental protection efforts is that EPA's regulatory requirements can be too prescriptive. For years, EPA has heard: "Give us environmental goals to meet, but don't tell us how to meet them." For the past decade, EPA has been building greater flexibility into regulatory programs through trading of emission "allowances" and other approaches. Through Project XL, EPA is providing companies and other project sponsors with additional opportunities to demonstrate their abilities to find innovative approaches to environmental protection. As the following examples show, we are finding that a little flexibility can go a long way toward getting better results.

Denton, Texas. Rather than spending its resources monitoring and inspecting wastewater treatment facilities that have excellent performance histories, officials in Denton requested regulatory flexibility to redirect these resources to develop a comprehensive watershed protection program. This approach will support site-specific watershed protection activities, such as developing buffer zones along underdeveloped areas, that we expect will result in better water quality.

Albuquerque, New Mexico. In an attempt to reduce pollution loadings at its wastewater treatment plant, the City of Albuquerque proposed shifting resources previously used for traditional industrial pretreatment practices to an alternative method of monitoring and additional pollution prevention activities. This cost-effective approach focuses on preventing pollution before it happens rather than treating it afterwards. The goal of this pilot is to reduce 13 pollutants by 10 percent to 20 percent over the life of the project.

New England University Laboratories. In the Northeast, a consortium of university laboratories proposed a new approach for managing hazardous wastes in laboratory settings. The project enables laboratories to integrate some EPA hazardous waste requirements with Occupational Safety and Health Administration (OSHA) standards for managing chemicals. This approach will lead to better management of the chemicals, which should help prevent pollution and improve worker and student safety.

PROJECT XL

Taking A More Comprehensive Approach to Environmental Management

Despite strong environmental progress over the past three decades, gaps in environmental protection remain. Communities and facility owners are considering how to address multiple environmental challenges and how to meet multiple objectives. To optimize environmental, community, and business outcomes it helps to step back and consider all the issues affecting environmental quality. This means looking at facilities and communities as a whole.

This more comprehensive approach to environmental management is reflected in many of the projects being conducted under Project XL. As the following examples show, communities and businesses alike are finding that a broader view often leads to better results.

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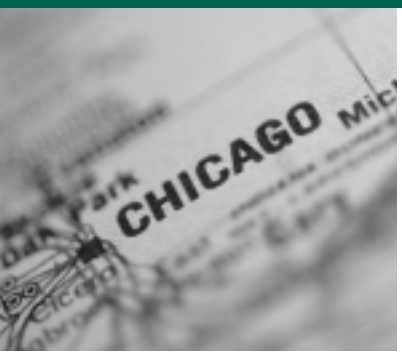
Common Sense Strategies that Integrate Community Needs

Local communities play an increasingly important role in environmental and public health protection. Through Project XL we are seeing numerous ways to meet federal and state standards while also addressing local priorities.

Atlantic Steel Redevelopment. In Atlanta, Georgia a unique public/private endeavor has the potential to serve as a national model for creative environmental problem-solving. Real estate developers, neighborhood groups, the City of Atlanta, Georgia Department of Transportation, Georgia Environmental Protection Division, and other government agencies, are working toward redevelopment of a 138-acre steel site formerly owned by Atlantic Steel. This project, proposed by Jacoby Development Corporation, includes a multimodal (automobile, pedestrian, bicycle, rail) bridge that would cross and provide access ramps to the adjacent highway as well as connect the site to a nearby MARTA (mass transit) station. When the transportation elements of this project were proposed, Atlanta was out of compliance with federal transportation conformity requirements, and as a result, Atlanta was not allowed to use federal funds to add to its highway system or to construct certain types of transportation projects that require federal approval, even if they are not federally funded. This prohibition extended to the proposed 17th Street bridge (and associated highway ramps) from the former Atlantic Steel site to MARTA. EPA believes that the combination of the site's location in a central urban area, connection to the existing transit system, a design that promotes pedestrian access, participation in a Traffic Management Association, and provision of bicycle and pedestrian conveniences will work together to reduce growth in automobile traffic in the Atlanta region. This redevelopment project will demonstrate that the application of smart growth concepts can make a difference in travel patterns.

Chicago Development Zones. In Chicago, Illinois another innovative solution has been crafted to address air quality concerns. Under a section of the Clean Air Act that has never before been implemented, officials are creating "development zones" that create incentives for development in targeted areas. This regional approach requires the state to track emissions reductions by



municipalities in the Chicago area. These reductions will be used to create an emissions growth allowance. Businesses locating in the development zones would draw upon the growth allowance and avoid the expense of having to purchase emissions "offsets" elsewhere. This provides obvious economic benefits for business, but it provides other important regional benefits as well. This sort of development targeting will rejuvenate city neighborhoods and reduce sprawl and the traffic and automobile emissions that come with it. This project is significant also because of the emphasis being placed on mobile and area source emissions, such as lawn mowers and small incinerators. This is important given that these sources account for about 80 percent of emissions overall.

Lead Safe Boston. In Boston, Massachusetts a federally funded program that removes lead from residential homes and apartments asked for approval to use less expensive method for handling and disposing of lead-based paint debris. Massachusetts and EPA regulations currently require extensive lead testing on architectural debris and disposal in costly hazardous waste landfills.

Companies Test Facility-wide Emission Caps

One of the most significant examples of how companies are taking a more comprehensive approach to environmental management is the use of facility-wide emissions caps. Under the Clean Air Act, companies must obtain permit approvals from EPA and delegated state agencies whenever they make an equipment or process change that significantly increases their emissions. Each process or type of equipment may have its own permit requirements, yet some industries require changes frequently to keep up with new technological developments and customer demands. The paperwork and time required for these approvals can be costly, both for the companies and the government agencies charged with permit review.

Some companies have developed projects under Project XL to make the permitting process more efficient and predictable for their quick-to-market manufacturing needs. These projects are based on facility-wide air emission caps, which prevent the facility from increasing its emissions, but allow process or equipment changes without regulatory approval. Under this approach, facilities must offset any emission increases with a reduction somewhere else within the facility. EPA generally sets the cap below the facility's regulatory threshold for compliance, thus ensuring that the project achieves better environmental results than would otherwise be achieved under current regulatory requirements.

Intel Corporation EPA and the Arizona Department of Environmental Quality approved a facility-wide emissions cap for Intel's semiconductor manufacturing plant in Chandler, Arizona. The new limits allow Intel to make equipment and process changes and to expand production capacity, without regulatory reviews, as long as the total emissions stay below the specified cap. Since the project began, the company has remained well under its emission limits for all applicable pollutants. Intel also has avoided millions of dollars in production delays by eliminating 30 to 50 new source permit reviews a year. The company has found the emission caps so successful that it will invest $2 billion to build a new wafer fabrication facility (Fab 22) at the site. Under the existing cap, Intel can proceed with expansion without first going through regulatory review. In announcing this decision, Intel noted that "the new facility will help us maintain our leadership in the extremely competitive world of semiconductors. Fab 22 will give us more manufacturing capacity in order to help us better address our customers' growing need for high-performance microprocessors."

Merck & Company In a move similar to that of the Intel project, EPA and the Virginia Department of Environmental Quality created a facility-wide emissions cap for Merck's Stonewall pharmaceutical manufacturing plant in Elkton, Virgina. Developed under a Clean Air Act permit that prevents significant deterioration of air quality, Merck's cap also eliminates regulatory review for equipment or process changes as long as the facility's emissions stay below the specified cap. With this approach, Merck is reducing the plant's total emissions of criteria air pollutants by 20 percent, sulfur dioxide emissions by 25 percent, and nitrogen oxide emissions by 10 percent, thus ensuring better environmental results. In addition, Merck will have flexibility under future regulations to lower its cap instead of implementing specific control technologies that might be required for other facilities. Merck expects that reducing permit reviews and potentially avoiding new technology investments will save the company millions of dollars.

But Lead Safe Boston saw a more cost-effective option of using a household hazardous waste exception that allows such debris to be disposed of in a municipal solid waste landfill that meets certain performance criteria. Through this action, Lead Safe Boston expects to substantially reduce disposal costs. This will enable them to remove lead from more homes and protect up to 30 more children from lead exposure. But these benefits will extend much more broadly. As a result of the Lead Safe Boston project, a new policy issued by EPA this summer allows residential lead debris to be disposed in municipal landfills, thus enabling contractors across the country to perform lead abatement more quickly and cost-effectively.

Offering Businesses Incentives to Improve Environmental Performance

What really drives businesses to improve environmental performance at a manufacturing facility? Is it granting regulatory flexibility to businesses that demonstrate strong performance? Maybe, but perhaps there are other incentives that are equally or more important. Project XL is enabling EPA to understand the priorities that motivate companies to stronger environmental stewardship. Often we must consider an operation in full to find creative solutions that get better environmental and economic results.

Crompton (formerly CK Witco). A strong interest in getting better results and lowering costs led Crompton to take a more comprehensive approach to environmental management at its chemical manufacturing facility in Sistersville, West Virginia. To start, the company launched a facility-wide waste management and pollution prevention study. Employees identified and characterized all plant wastes and emissions, identified and prioritized pollution prevention opportunities, and developed plans to implement the most feasible options for improving environmental management. An internal pollution prevention council was organized to select the most promising opportunities and to pursue and monitor progress. In all, more than 350 pollution prevention opportunities were identified, and more than 60 waste minimization or pollution prevention projects are being implemented. This action, along with other environmentally-beneficial projects, earned the company regulatory flexibility in complying with new air emission regulations. Rather than control air emissions from the facility's hazardous waste impoundments, the company found a more cost-effective alternative. They are cutting their emissions by installing new air pollution control equipment on production units well ahead of the date required.

Andersen Corporation. In Bayport, Minnesota, EPA and the Minnesota Pollution Control Agency signed an agreement with one of the nation's largest manufacturers of windows and doors to test an alternative permit that includes incentives for lowering emissions of volatile organic compounds. This novel approach involves an emissions cap and a performance-based ratio that links the facility's emissions and production capacity. It is intended to "lock-in" existing manufacturing methods and processes that have grown more efficient over the years while encouraging continued improvement. By continuously improving its efficiency, Andersen gains the flexibility to increase its production without sparking regulatory review. This approach represents a break from traditional permitting, which imposes penalties for failure to comply with requirements, but often does not provide incentives to perform better than required.

Key Lessons Learned

The experiments being conducted under Project XL are in various stages: some are just getting started; others are in their second or third year. So, what are the key lessons we've learned from this unique program, to date? There are many, but here are some of the most important:

- It is possible to experiment with new approaches outside the traditional regulatory arena as long as you put strong, reliable safeguards in place.
- Some businesses and communities are not only willing, but eager, to take greater responsibility for environmental results if they are given flexibility in meeting the goals.
- If given an opportunity, citizens and other stakeholders can play an active, creative role in finding solutions to problems.
- The opportunities to improve become more visible, and the results potentially more significant, when you step back and look at a community or facility as a whole, rather than as a set of separate, unrelated components.

PROJECT XL

Building On a Legacy of Environmental Progress

As a national laboratory for testing new ideas in environmental protection, Project XL is unprecedented. Predictably for an experimental program, it has experienced some conflict and controversy. But it also has brought important new discoveries and insights about ways to improve environmental results.

With experiments now underway, we are carefully watching the results. This is an important step if we are to progress toward our ultimate goal—scaling up successful concepts and approaches for broader application. We know that in order for these experiments to realize their true potential, we must use what we learn to make improvements in our national programs. In some cases, existing policies and regulations may have to be adapted to reflect more up-to-date knowledge and technology.

We believe that sustaining our strong national legacy of environmental progress depends on innovation in all parts of our society.

We believe that the type of experimentation allowed under Project XL is fundamental to continued advances in environmental protection. Indeed, we believe that sustaining our strong national legacy of environmental progress depends on innovation—at EPA, in state environmental programs, in local governments, in businesses, in communities—in all parts of our society. That is why EPA launched Project XL, and it is why we will continue supporting and encouraging those that are willing to search for a better way of achieving environmental goals.

For more information on Project XL, go to the website at www.epa.gov/projectxl.

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