

global issues

March 2000 Volume 5, Number 1

# Green Cities



Urban Environmental Solutions

---

---

## *From the Editors*

*No matter where they are, cities are centers of art, culture, business, and government. Their vibrant energy makes them pulse points of nations. At the same time, cities are increasingly a nexus for environmental challenges.*

*The State of World Population 1999, issued by the United Nations Population Fund, documents the trends of increasing urbanization. One-third of the world's population lived in urban areas in 1960. By 1999, that percentage had increased to 47 percent. The report predicts 61 percent of the world's population will be city dwellers by 2030. The State of World Population 1999 offers this prediction about urbanization:*

*... the ecological and sociological "footprint" of cities has spread over ever-wider areas, creating an urban-rural continuum of communities that share some aspects of each lifestyle. Fewer and fewer places on the planet are unaffected by the dynamics of cities.*

*Discussions among city planners and urbanists about the best ways to make cities work better for everybody are likely to become more heated in the next century as urban conglomerations of 10 million and more people become common and the associated problems grow exponentially. A major part of those problems will be environmental: designing effective land use, meeting the challenge of effective and environmentally friendly transportation, preserving open space, providing healthy air and water. We invite readers to consider some of the innovative and effective strategies currently emerging, in the United States and internationally, to avoid or mitigate the damage caused by this ever more important "ecological footprint."*

## table of contents

### Green Cities: Urban Environmental Solutions

#### focus

- Healthy Cities: Urban Environmental Solutions** .....5  
The White House Council on Environmental Quality advises the Clinton-Gore administration in crafting a balance between economic growth and environmental protection to achieve sustainability in U.S. communities.  
*By George T. Frampton, Jr., Acting Chair, White House Council on Environmental Quality*
- Creating Mobility and Livability in U.S. Communities** .....9  
Recent changes in U.S. laws have heightened the importance of environmental concerns in transportation policy.  
*By Rodney E. Slater, U.S. Secretary of Transportation*
- Practical Steps Toward Healthier Cities and a Cleaner Global Environment** .....11  
The U.S. Agency for International Development manages a variety of initiatives to improve urban environmental conditions around the world.  
*By David Hales, Deputy Assistant Administrator, Global Environment Center, U.S. Agency for International Development*

#### commentary

- Green Ideas for Pollution Control in Developing Nations** .....17  
Innovative new strategies for protecting the environment are redefining the concepts of regulation, the roles of government, and the responsibility of the private sector.  
*An interview with World Bank Economist David Wheeler.*
- "Resource Cities" Partner for Progress** .....21  
A USAID program supports partnerships between U.S. and international cities to help improve environmental management.  
*By Charlene Porter*



# focus

## Healthy Cities: Urban Environmental Solutions

By George T. Frampton, Jr.  
Acting Chair, White House Council on Environmental Quality

*The White House Council on Environmental Quality advises the Clinton-Gore administration on how to achieve sustainability in U.S. communities by crafting a balance between economic growth and environmental protection. Rather than having to choose one or the other, the council argues that they can be mutually reinforcing.*

For far too long, many believed that a strong economy and a healthy environment were incompatible goals. All around the world, people accepted dirty water, smoggy skies, and degraded lands as the price of progress.

Under the leadership of President Clinton and Vice President Gore, America has demonstrated that this notion is not only outmoded but plain wrong—that, in fact, economic growth and environmental protection can and must go hand in hand. Today, even as we enjoy the longest economic expansion in our nation's history, we have the cleanest environment in a generation, and we are making significant new investments to ensure an even healthier environment for our children.

The essential interconnectedness of our environment and our economy is nowhere more important than in our cities. Historically, cities grew and prospered where geography, climate, and other natural assets were most favorable. Cities can continue to thrive only by safeguarding the natural resources that are the underpinnings of both their economic, and their quality of life.

Across America, cities struggle each day with issues ranging from air pollution and congestion to sprawl and the loss of open space. In each of these areas, the Clinton-Gore Administration is working hard to help communities and their leaders craft local solutions that both enhance the economy and protect the environment. We are helping to build strong, healthy, livable cities—where future generations do not feel they must choose between a healthy environment and a strong economy, but understand that without one, we cannot have the other.

### Increasing Livability and Quality of Life

Since the end of World War II, a dramatic change in the American landscape has occurred as city dwellers have moved out of compact urban

neighborhoods to newly built suburbs on the city's edge.

This outward migration began a fundamental shift in the pattern of development. As the population moved, urban areas began to decline, and, far too often, the roads, houses, malls, and office parks in the new developments were built without anticipating how they all fit together; without making sure they provided the foundation for true neighborhoods and communities.

Today, haphazard development, urban disinvestment, and a deteriorating quality of life have come to be known simply as "sprawl." A poll released in February of this year by the Pew Center for Civic Journalism found that sprawl now ranks equally with crime as the number one local issue concerning American people. This genuine, and quite understandable, worry reflects the reality that in many areas of our country sprawl paves over the countryside, drains the vitality from our cities, and hurts our quality of life.

A recent inventory from the Department of Agriculture found that the amount of open land converted to development has more than doubled on an annual basis in the last five years. Today, more than 1.2 million hectares of our farms, forests, and open spaces are converted to development each year.

The rate of developing open space far exceeds the rate of population increase. For example, since 1950 the population of the St. Louis region increased by 35 percent, but just between 1950 and 1990, as the population moved outward, the amount of developed land increased by 355 percent.

The same development that is eating up open spaces is also sucking investment out of the cities. Between 1994 and 1997, a study that looked at seven metro areas in Ohio found there were 10 jobs created in the suburbs for every one in the cities. As jobs leave the cities, it becomes harder and harder for residents to find good jobs and for government to provide services.

As we spread farther out, Americans must travel greater distances between home, work, shopping, and recreation. As a result, families depend on cars

for more and more of their daily travel. While the U.S. population has been increasing about 1 percent a year, vehicle miles traveled have risen 3.2 percent a year—more than three times the rate of population growth.

Americans living in suburbs also pay for sprawl in time, money, and frustration. In 1999, a major traffic survey found that nationally, the amount of time Americans waste in gridlock nearly doubled in the last decade. The report estimates that each year Americans waste more than 25,000 million liters of gasoline sitting in traffic, and that the cost of congestion now exceeds \$72,000 million a year.

In addition, sprawl in suburban areas often increases taxes as the infrastructure that is required—roads, sewers, water, schools, and police and fire protection—must be paid for. A recent study from Washington state concludes that every time a family moves into a new home in the Puget Sound region, the cost of providing these types of services ranges from \$20,000 to \$30,000, and at least some of the costs are passed on to taxpayers.

The Administration's Livable Communities Initiative, developed under the leadership of Vice President Gore and launched last year, recognizes that many communities across the country are trying to find a better way. The initiative helps communities—both large and small—grow in ways that enhance their quality of life and ensure strong, sustainable economic growth.

To coordinate the effort, the Administration created the White House Task Force on Livable Communities. The task force is working with 18 federal agencies to expand the choices available to communities to revitalize American cities, towns, and older suburbs; encourage new investments; bring historic neighborhoods back to life; develop alternative transportation methods; increase regional cooperation; protect the environment; create parks; preserve open spaces; and foster smarter growth.

An example of what has already occurred to improve livability lies in the area of transportation. In 1998, President Clinton signed the Transportation Equity Act for the 21st Century (TEA-21). At the Administration's urging, this

historic legislation provides communities with the flexibility to transfer funds from highway construction to public transit to help overcome traffic congestion. Last year, more than \$960 million was used to support projects such as high-occupancy vehicle lanes, ridesharing, bicycle and pedestrian paths, improved transit facilities, and scenic beautification.

This year, President Clinton is proposing \$9,300 million, a 14-percent increase, for the Livable Communities Initiative. The budget includes adding \$468 million for an expanded passenger rail fund, which will be used to improve passenger rail service and make improvements necessary for high-speed rail.

The budget also proposes the creation of a Better America Bonds program that would allow communities to purchase land or acquire permanent easements to preserve open space, create or restore urban parks, protect water quality, restore wetlands, protect farmland, and clean up abandoned industrial sites. If approved, this \$700 million tax credit proposal will enable state, local, and tribal governments to issue—at what would be interest free to them—some \$10,750 million in bond authority over five years.

In addition, the Administration proposal contains components that would provide grants to increase regional cooperation on planning, as well as programs to fight crime and increase community safety. By investing in existing communities, urban areas, towns, and older suburbs benefit because the infrastructure to support growth already exists in these locations—and it's already paid for.

### Cleaning up Brownfields

Abandoned industrial sites—called brownfields—are all too common throughout the United States. Sitting vacant and unproductive, brownfields blight their neighborhoods, foster crime, and burden taxpayers.

The Clinton-Gore Administration, acting on the concerns of mayors, citizens, and others, first created the Brownfield Initiative in 1994. This effort was augmented in 1997 when Vice President Gore announced the Brownfields National Part-

nership that offered communities both financial and technical assistance from more than 25 federal agencies and partners.

As part of the action, 16 Brownfields Showcase Communities were selected to serve as models of what can happen when all levels of government—working in partnership with business and community leaders—focus their efforts.

The need for this action was clear: at the same time that brownfields lay idle, millions of hectares of open space were being developed. This loss of land has environmental consequences. The Environmental Protection Agency (EPA) estimates that a parking lot generates 16 times more runoff than a meadow—runoff that washes toxic chemical and other pollutants into our waters, lakes, and coastal areas, often making them unfit for wildlife and unsafe for families.

While this land was being paved over, hundreds of thousands of hectares of brownfields sat idle. A February report by the U.S. Conference of Mayors estimated that redeveloping brownfields could bring in up to \$2,400 million in tax revenue annually, create more than 550,000 new jobs, and take some of the development pressure off our farms and forests.

Under the Administration's brownfields effort, by the end of 1999, local communities had been provided with more than \$385 million for brownfields redevelopment and another \$141 million in loan guarantees. In Dallas, one of the original showcase communities, some \$1.9 million in financial and technical support helped attract \$109 million in private investment and resulted in a new sports arena rising from a former brownfield.

Overall, the results of the brownfields effort have been astounding: for every dollar the federal, state and local governments put into revitalizing brownfields, almost \$2.50 in private investment was attracted.

And where is this happening? In some of the areas that need it most—lower income and minority neighborhoods. Building upon this success, 10 new Brownfields Showcase Communities will be designated through

a competitive process that will start this year; 50 new demonstration pilots will be added to the 307 existing sites; and the Brownfields Cleanup Revolving Loan fund will add 60 more projects. In addition, job-training pilots have been awarded to 21 locations and some \$30 million provided to states and tribes to enhance voluntary cleanup programs.

### Creating and Restoring Urban Parks and Greenways

When most Americans think of great park environments, they think of Yellowstone, Yosemite, and the Grand Canyon—the nation's national treasures. But most urban residents, some 80 percent of the population, will never travel to one of these national treasures. Their backyards, riverfronts and neighborhood parks are their treasures.

Unfortunately, many residents feel disconnected from the environment—highways reduce access to rivers and lakes, and parks are sometimes inaccessible. At the same time, numerous studies show that urban parks and open spaces play a significant role in increasing the health of communities, reducing juvenile crime, increasing educational scores, and boosting property values.

One solution is to reconnect urban residents to their environment by increasing our investment in the environments closest to them—urban parks and open spaces. Urban parks improve air quality, create habitat for wildlife, reduce storm water runoff, and cool the temperatures of heat islands in the cities.

But, more importantly, urban parks provide places for children and their parents to play and areas where people can get to know each other as neighbors in safe settings. Simply put, urban parks are often the cornerstones of vital, healthy urban communities. Although numerous programs help in building and restoring parks, the President has proposed in his budget that an additional \$20 million be devoted exclusively for urban parks—a 900 percent increase over previous funding levels.

### Increasing Cooperation and Partnerships

For seven years, the Clinton-Gore Administration has proven that a booming economy and a healthy environment can go hand-in-hand. One does not have to come at the expense of the other. But sustaining economic prosperity and protecting the environment require partnerships and cooperation, not only between federal, state and local governments, but also with the private sector.

For the federal sector, being a good partner means we must continually reexamine how we do business and resist efforts to rely on one-size-fits-all solutions. We must promote cooperation among neighboring communities, add flexibility and incentives to our programs, and seek out innovative ways to do business. We must reach out to communities, businesses, organizations, and to local and state governments.

The Administration is now working with cities and counties across the country to develop a series of regional partnerships that will provide models for how communities can effectively work to increase the livability of their communities and improve their environment.

Clearly, this country has made, and continues to make, significant investments in protecting and improving its environment. It really does matter where we live, how we live, and how we live with one another. And it matters that our environment be healthy and our economy strong. Our communities, homes, and neighborhoods are a part of our environment and they are concrete manifestations of us as a people.

We recognize that much more remains to be done, but today, because of the fiscal discipline and successful policies of the Clinton-Gore Administration, we are now poised on the edge of an era when reaching our remaining environmental and economic goals lies within our grasp.



# Creating Mobility and Livability in U.S. Communities

By Rodney E. Slater  
U.S. Secretary of Transportation

*Transportation affects the environment. But today, states and communities have more options than ever before for improving the mobility of passengers and freight in ways that moderate air, water, and noise pollution, and help preserve historic and natural resources.*

As we cross the bridge into this new millennium, the challenge before us is to meet future transportation demands as we work to ensure the health of our environment. The Clinton-Gore Livability Agenda, launched January 11, 1999, lays the groundwork to help our communities ensure a high quality of life while allowing every American to share in the bounty of economic prosperity and still protect our environment.

The Department of Transportation (DOT) is about more than concrete, asphalt, and steel. We are leading the way in the administration's livability agenda and are working to find new ways to deal with traffic congestion, improve air quality, and preserve green space. With vision and vigilance, we are meeting our transportation needs as we bequeath to generations of the 22nd century a nation of clean air and waters, a land Vice President Gore recently described as "a place of natural grace."

The Transportation Equity Act for the 21st Century (TEA-21)—with its commitment to improving the environment for current and future generations—is one tool this administration is using to support livable communities. Under this 1998 law, known as TEA-21, states and communities have more options now than ever before for improving the mobility of passengers and freight in ways that moderate air, water, and

noise pollution, and help preserve historic and natural resources.

Transportation affects the environment, and that is why the U.S. government is committed to infrastructure investments that safeguard both human and planetary health. As we provide roads, parking lots, and fuel to power vehicles and industry, it is essential that we weigh decisions that affect our ecosystems and wildlife habitats, and provide assistance to avoid and mitigate adverse effects on the environment. Effective transportation planning that considers a wide range of options and examines the consequences of these choices is the key to shaping sound investment decisions.

TEA-21 empowers our communities to look at their needs and make the best transportation choices for their citizens in this new millennium. These choices may include mass transit and highways, alternate facilities for rail, bicycles, pedestrians, and ride-sharing programs. Earth-friendly alternatives can help us achieve the environmental goals of TEA-21, reducing the total vehicle miles driven in our congested urban areas, and reducing the polluting emissions and greenhouse gases that are contributing to global warming.

TEA-21 is the successor to an earlier law, the Intermodal Surface Transportation and Efficiency Act, or ISTEA, passed in 1991. Both these laws have made unprecedented contributions to how transportation can improve quality of life. Policymakers now incorporate transportation plans with the interests of communities and consider the effects on safety and the environment.

ISTEA also established the Congestion Mitigation

and Air Quality Improvement (CMAQ) program. The CMAQ program emphasizes the importance of the link between transportation and air quality, and it has provided approximately \$8,000 million in funding for states and cities to develop transportation projects and air quality programs. Consequently, many areas will be able to implement transportation control measures (TCM) in compliance with the mandates of the Clean Air Act, as well as other projects that reduce transportation emissions.

An innovative feature of the CMAQ program is the flexibility it provides in transportation projects and programs eligible for funding. The CMAQ program is designed to provide support for traditional TCMs, but also encourages innovation in developing new emission control strategies and technologies. Transit and traffic flow improvement projects are included, as are projects such as ride-sharing, vehicle emission inspection and maintenance programs, and bicycle and pedestrian programs.

The CMAQ program is an important tool available to planners and builders striving to make our country's new environmental vision a reality.

In the 1990s, ISTEA and TEA-21 created a systematic approach for inclusion of environmental concerns in the development of transportation plans, but, for decades, the Department of Transportation has been moving toward more earth-friendly methods in the planning and construction of highways, bridges, and other transportation links. In 1969, before the first Earth Day was celebrated in the United States in 1970, former Transportation Secretary John Volpe established an environmental function in the Office of the Secretary.

Heightened concerns about the ecological impact of decisions began to emerge at that time. But a citizens' lawsuit against a controversial road construction project in Memphis, Tennessee, resulted in a 1971 ruling from the U.S. Supreme Court that underscored the preservation of greenspace as a clear priority in transportation planning.

In that Memphis case, transportation planners proposed to cut a major interstate highway through a locally-treasured park. Applying a provision in the law that created the Department of Transportation, the U.S. Supreme Court stopped the proposal with the late Justice Thurgood Marshall writing: "The few green havens that are public parks were not to be lost unless there are truly unusual factors present."

Through the action of the Clinton-Gore administration, with legislation from the Congress, and with the direction of the Supreme Court, we are helping communities put people first and achieve goals that better the lives of every individual. We want our children to breathe fresh air and romp in the neighborhood playground on a sunny day. We want our aging parents to be able to enjoy the spring air and play checkers in the park. We want to be able to take a long bicycle ride down a trail without having to worry about cars whizzing past us, spewing harmful fumes.

Together we can ensure the health of our environment, create more livable communities for our citizens, and continue the economic prosperity this nation enjoys. Together we can prepare this world for this new millennium and beyond.

# Practical Steps Toward Healthier Cities and a Cleaner Global Environment

By David F. Hales  
Deputy Assistant Administrator  
Global Environment Center  
U.S. Agency for International Development

*U.S. programs help cities around the world as they work to reduce pollution. A senior official with USAID explains why and how the United States supports these initiatives.*

Concerns about deteriorating urban environmental conditions and their long-range implications have become a critical component of U.S. foreign policy initiatives. Cities in the developing world are growing rapidly. In these burgeoning urban areas, the pace and scale of growth have outstripped the capacity to maintain acceptable standards of public health, environmental safety, and sustainable economic growth. Enormous burdens of ill health and reduced quality of life affect citizens in those cities. Further, those conditions exacerbate global environmental problems and pose very real threats to U.S. national interests.

The immediate effects on local communities are severe. A high incidence of respiratory problems, diseases linked to poor sanitation and bad water, and illness from exposure to toxic substances rob families of their health, vigor, and dignity. Quality of life is reduced. The ability to earn a living is compromised. Children learn less, learn more slowly, and miss much of their schooling. Expenditures on medical care and medicines are excessive. Loss of lives, injuries, and damage to houses and property are greater when natural disasters strike. All families are exposed in varying degrees, but those most severely affected are the poorest families living in crowded inner-city areas and squatter communities.

Poorly-managed cities contribute, in growing measure, to several global environmental concerns. Growing economies need expanding supplies of

power and fuel, but inefficient, polluting power sectors, poor transportation policies, and wasteful use of energy pump needlessly high amounts of greenhouse gases into the atmosphere. The lack of basic urban environmental infrastructure in most cities in the developing world channels a torrent of untreated sewage and waste into rivers, lakes, and coastal zones, damaging ecosystems and threatening the productivity and safety of water bodies.

These problems are most intense in the cities where they originate, but they also jeopardize U.S. interests in a number of different ways. Urban environmental problems undermine sustainable economic expansion. Unstable economies can lead to a rising tide of economic refugees. Increasingly unlivable cities are more susceptible to social unrest and political instability. Robust new strains of "exotic" diseases that first appeared in the overcrowded slums of poorly-managed cities overseas are showing up with increasing frequency in U.S. communities, inadvertently imported by visitors, returning travelers, or the swelling numbers of environmental refugees abandoning their increasingly unlivable cities.

Humanitarian concerns and the need to protect U.S. citizens motivate this country's keen interest in helping other nations improve their management of urban growth and environmental conditions. This aid effort works through several government channels, with USAID handling most urban environmental initiatives overseas.

What help does USAID offer?

Every city is different, and each confronts unique challenges in dealing with urban environmental

problems, but five elements—and a context that encourages broad participation and ensures transparency of information—are crucial to any effective approach:

- a broadly-shared, informed understanding of the problems and of workable solutions;
- a suitable legislative and regulatory framework;
- capability and competence in the government, entrepreneurial, and civic sectors;
- suitable technologies;
- and realistic financing options.

USAID provides support on each of these important elements. Many of the tools, techniques, and approaches that have been developed through decades of research, investment, and hands-on experience in the industrialized world can be usefully adapted and applied in developing cities. USAID draws heavily on U.S. experience and expertise—from both the public and private sectors—in helping to make urban environmental management initiatives successful in other nations.

*INFORMED UNDERSTANDING:* The first step is to achieve a better understanding of what the issues are, what the potential solutions could be, and what they will require.

USAID supports the development of environmental management plans, which are based on collecting sound data and assessing the risks to public health posed by pollution. Intuitively, we know that air reeking with exhaust, laced with lead and carbon monoxide, is unhealthy. But only in recent years have we developed the techniques to measure how many years of lost life and productivity such polluted air will cost a nation. Information of this kind works to bring together parties who may share an adversarial history.

In developing an informed understanding of the problems and their possible solutions, genuine, broadly inclusive participation—the bedrock of democratic systems of governance—is crucial. Too often, those most at risk—including women, children, and the poor—are the least likely to be

included. Only truly participatory approaches can ensure that their views are heard, that their needs are considered, and that their wisdom and special insights will enrich the deliberations.

A study in the Gujarati city of Ahmedabad carried out by the Indian Centre for Environmental Planning and Technology (CEPT), with support from USAID, demonstrates the importance of establishing this informed understanding. The single most important finding of the CEPT study was that, contrary to generally-held views about the local environment, Ahmedabad's water quality problems were not as severe as those related to air quality. This finding, substantiated by the rigorous methodology employed by CEPT, enabled the municipal government and local industries to shift their priorities for investments in environmental management, leading to more efficient use of Ahmedabad's limited funding.

In New Delhi, about 70 percent of the vehicle fleet is made up of used two-wheeler scooters and motorcycles, almost all with polluting two-stroke engines. More than 65,000 vehicles were tested and given maintenance in a program cosponsored by USAID and the Society of Indian Automobile Manufacturers. The inspection camps helped to raise citizen awareness of the benefits of proper maintenance to help reduce New Delhi's severe air pollution and provided important data that manufacturers and urban planners will use in the future to further reduce emissions.

*FRAMEWORK FOR ACTION:* USAID helps to craft and put in place a suitable framework of laws and regulations to address urban environmental problems. Often, the challenge is not to draw up national legislation, but to find the combination of regulations and practices that put "teeth" into the laws. While enforcement is important, even greater gains can be achieved by finding effective ways to expand voluntary compliance by all actors.

At the International Conference on Regulations and Standards for the Protection of the Urban Environment held in Santiago, Chile, in 1998, USAID's Environmental Law Program provided city officials and representatives of municipal associations from throughout the region with an overview of regulatory tools that promote

sustainable urban environmental management. The meeting enabled experts to share valuable legal and urban management experience. Issues addressed included reducing pollution, delivery of urban services, innovative regulatory strategies, and special enforcement issues facing cities in the region. The principal result was increased awareness of proven strategies for using environmental law and policy to achieve sustainable urban management.

USAID's activities in Europe and Eurasia further demonstrate several important linkages between environmental policy and broader economic and political reforms:

- Strengthening nongovernmental organizations (NGOs) has increased local capacity for policy analysis and development.
- Developing market-based instruments for environmental protection (for example, pollution charges, emissions and effluent trading) has lowered compliance costs, produced cleaner air and water for all, and generated revenues to fund regulatory agencies.
- Decentralizing resource management decisions to local-level, river basin commissions and water user associations has led to more efficient resource management and provided models for local democratic institutions and public participation.
- Development of environment funds and preparation of well-conceived projects has generated increased resources for environmental investment and stimulated development of private capital markets.

*CAPABILITY:* Even with improved understanding of the issues and a suitable set of laws and regulations, most developing nations need to build their capacity to use the information and the rules effectively. Capability is a blend of science, leadership, management skills, patience, and creativity. It must serve as a guiding principle for local governments, NGOs, schools, community associations, academic and research organizations, and the private entrepreneurial sector. Genuine progress can be made when all these organizations and institutions share a common understanding of their problems and goals.

USAID supports capacity-building with a wide variety of resources including technical assistance; training; exchange visits; and partnerships with U.S. businesses, research organizations, and local governments. With USAID support and guidance, the Indian NGO EXNORA and the state government helped transform the nomadic Narikuravas from largely unemployed slum dwellers to organized "street beautifiers" who earn a living by collecting, composting, and recycling waste. Guided by the watchwords "EXcellent, NOvel, and RADical," EXNORA has enabled the Narikuravas and other slum communities to improve their own economic status and help resolve solid waste management problems in cities of the Indian states of Tamil Nadu and Kerala.

In India, Indonesia, Korea, Nepal, Philippines, Sri Lanka, Taiwan, and Thailand, the U.S.-Asia Environmental Partnership (US-AEP), a USAID regional program, has awarded grants to 53 NGOs to promote improved environments through business partnerships. For example, in Hyderabad, the Centre for Resource Education worked with the Ravela Timber Group to propose process improvements that decreased resource waste and improved working conditions, while optimizing energy use and cutting production costs. In Bali, the Wisnu Foundation worked with the hotel industry to improve methods of waste disposal, which now include recycling half the wastes. Partnerships such as these have not only resolved specific problems, but have also done much to overcome past adversarial relations between these groups and to improve prospects for collaboration in the future.

Partnerships between U.S. entities and their counterparts overseas have proven to be one of USAID's most effective means of building capability for improved urban environmental management. Some of the most successful exchanges have been ones pairing U.S. and developing world municipal government officials in problem-solving relationships. (The Resource Cities Program is described elsewhere in this publication.)

Partnerships help moderate the environmental problems caused by industrial activity and power generation overseas. Over the past seven years, working with the U.S. Energy Association,

USAID's Energy Partnership Program has paired more than 35 overseas utilities and regulatory bodies with their U.S. counterparts. The partnerships have improved operations and public services, mitigated the impact of power generation on the environment, stimulated sales of U.S. technologies, and opened the door to emerging markets for U.S. utilities.

*TECHNOLOGIES:* Better technologies are almost always required for communities to make a transition to a healthier environment. But "better" technologies do not necessarily have to be "high-tech" or costly. Better technologies are those that allow a city to prevent environmental deterioration, rather than to contend with its consequences. Better technologies also fit the indigenous level of management capability and can be maintained by local technicians. Highly mechanized sewage treatment systems, for example, may be satisfactory for Washington, D.C., but entirely inappropriate for developing world cities if supplies of electricity, chemicals, and spare parts are not assured.

Severe environmental degradation in one of India's most sacred cities, Varanasi, is a compelling illustration. The city's mechanized, power-dependent wastewater system routinely floods the city with sewage backups, dumps raw sewage into places of worship on the Ganges river, and has contaminated the groundwater supplies for villagers near the treatment plant. The city government, working with the Sankat Mochan Foundation, an environmental NGO, wants to install a modern U.S.-designed ponding system that will reliably deliver safer effluent and improved environmental conditions for a fraction of the cost of upgrading the existing system to suitable standards. USAID is helping Varanasi and the Sankat Mochan Foundation develop a workable plan to implement this important initiative.

Rising standards of living and increasing levels of industrialization lead to greater per capita energy use, most of it urban-based, so USAID's initiatives to improve the efficiency of power plants, vehicular fleets, industries, and local governments are an effective way to help reduce growing urban environmental degradation. Nations working with

USAID have been able to "avoid" more than 6.1 million tons of carbon dioxide from 1985 to 2000, while improving the reliability and efficiency of their power and industrial sectors.

The importance of this achievement is hard to overstate. Not only has it resulted in significant improvements in environmental conditions and quality of life for the communities directly benefited, it has also:

- provided a more robust foundation for sustained economic growth;
- significantly reduced the effect of greenhouse gas emissions on the global environment;
- better positioned developing nations to be active participants in and contributors to the emerging task of improved management of the environmental commons;
- and created valuable opportunities for U.S. involvement in a huge emerging market for environmental goods, services, and partnerships.

*FINANCING OPTIONS:* Solutions come with a cost, and USAID helps developing world cities find suitable strategies to pay for the investments they need. One of the toughest challenges is paying for the basic urban environmental infrastructure that is lacking in most developing countries—satisfactory water, wastewater, and solid waste management systems.

Current approaches to the financing of basic urban environmental infrastructure are self-limiting, unpredictable, and not under the control of local governments. In the absence of well-developed domestic capital markets in much of the world, resources to pay for basic urban environmental infrastructure come primarily from national budgets or credits from donors and the development banks—the World Bank and the several regional development banks. Over the long term, these sources will be insufficient.

One workable option appears to be adoption of a financing mechanism similar to that used in housing and real estate in most nations, which channels short and medium-term resources into

long-term loans to make housing affordable to families across the economic spectrum. Another option is to improve prospects for local governments to be active participants in capital markets—domestically and internationally. Access to long-term financing, coupled with selective subsidies, can make environmental infrastructure affordable to all but the poorest cities. Given the long-term investments required, an important part of the effort has been to demonstrate that sound national fiscal policies will create a receptive setting for long-term lending.

It seems counterintuitive, but charging users the true cost of providing services makes infrastructure more affordable for the poor as well as for the wealthy. Approaches predicated on full-cost recovery can include a financing plan that is sustainable on a large scale, over time, and which provides carefully targeted subsidies. Such approaches are a substantial improvement over most current systems, which cater primarily to upper-income residents in well-established neighborhoods, leaving newer, poorer communities with little or no access to services.

Through several innovative programs, USAID is helping local governments and private sector actors to develop the partnerships and the financial tools they need to do the job. In India, through the Financial Institutions Reform and Expansion (FIRE) project, USAID supports the work of public, entrepreneurial, and community-based organizations. The major objectives of the FIRE project are:

- development of commercially viable urban environmental infrastructure projects that incorporate the needs of the poor;
- development of a sustainable infrastructure finance system and encouragement of private sector participation in service delivery;
- capacity building of urban local bodies in planning, implementation, operation, and maintenance of urban environmental infrastructure services;
- and establishment of an effective urban management training network.

How does USAID provide this assistance?

USAID missions are located in 73 developing and transitioning countries throughout the world. Many are actively working with host-country counterparts on a variety of activities to improve urban environments. The approaches vary to suit each setting and are often framed within broader initiatives to refine and strengthen the underlying fabric of democratic governance. Addressing the very real, stark issues affecting the health, livelihoods, and prospects of urban families and communities becomes a lasting illustration of the value of broadly representative participation by all sectors in society. Achieving tangible results from working together on common problems—often for the first time—is a powerful complement to electoral and judicial reform.

Individual USAID missions are supported by a network of Regional Urban Development Offices (RUDOs) located in Asia, Africa, Latin America, and Eastern Europe. These RUDOs provide technical and administrative support to missions and host country organizations active in making cities work. In coordination with missions, RUDOs also operate a variety of regional urban environmental activities and information networks, such as a Regional Municipal Finance Seminar series in South/Southeast Asia, a Regional Capital Markets and Municipal Finance Seminar in Africa, a Regional Urban Environmental Management Seminar program in South Asia, and the Latin American Center for Urban Management.

RUDOs also support missions and host-country counterparts in using USAID's Development Credit Program, an important resource to help developing nations move more quickly toward financial self-sufficiency for their infrastructure finance requirements.

Another important USAID resource is the U.S.-Asia Environmental Partnership (US-AEP) program, which operates through government, industry, and NGOs to address urban and industrial pollution. US-AEP improves Asia's access to environmental solutions and gives U.S. businesses access to Asian environmental markets.

The program provides technical assistance, grants, business exchanges, and study tours.

### Conclusion

Responsibility for managing urban environmental conditions overseas ultimately rests in the hands of other nations' governments, businesses, scientific bodies, and communities themselves, but experience shows that U.S. involvement can speed and strengthen progress on improving urban environmental conditions. The United States is proud to be a partner in meeting the increasingly urgent challenge of making cities livable.

For more information on USAID urban environmental programs, visit [www.genv.org/mcw/](http://www.genv.org/mcw/) or contact:

United States Agency for International  
Development  
Global Environment Center  
(202) 712-1750 (TEL)  
(202) 216-3174 (FAX)

---

*C. Lindsay Elmendorf of USAID's Office of Environment and Urban Programs contributed to this article.*



# commentary

## Green Ideas for Pollution Control in Developing Nations

*An interview with David Wheeler, lead economist for the Infrastructure/Environment Team of the World Bank's Development Research Group*

*Controlling industrial pollution has gained increasing urgency throughout the world in recent decades. In response, cities and countries everywhere have been growing their own ideas on how to "go green." For six years, economists, environmental engineers, and policy analysts from the World Bank examined innovative ideas emerging from several developing world nations. Wheeler was the principal author of a report on their findings entitled "Greening Industry: New Roles for Communities, Markets, and Governments," released in November 1999. Wheeler was interviewed by Charlene Porter.*

**Question:** What is the significance of urban environmental problems as they occur in larger national contexts throughout the developing world countries you examine in this report?

**Wheeler:** I suppose you could say the focus is national because we certainly talk about country experiences, but the truth of the matter is that all the important stories of local environmental contamination are urban stories. You have to have a certain concentration of industrial activities or other activities to get to a level of environmental contamination that's really serious for people or for ecosystems. So if you look at large scale stories of contamination of rivers or oceans, there is waterborne effluent coming down from large concentrations of population or industry.

And, almost every case where you have serious damage from air pollution is in an urban context, so the overlap is very, very large.

**Q:** We do have an assumption that the more cities grow, the more populous they become, the more polluted they become. Does it have to be so?

**Wheeler:** I think it has to be a lot less so than we might suppose. People have seen that there's a lot you can do to make the problem better without bankrupting people. That's what it's all about.

We like to think of it as an issue of trade-offs that

people face. There is always the potential for things to get worse. But if that happens, there are real consequences. People get sick, people die. There are huge losses to society and a lot of our work with our colleagues in developing countries has been in trying, in a systematic and hopefully quantified way, to point that out. It's not a nuisance. It's a huge cost to you, economically and in human life, and so you have it within your power, at reasonable cost, to get this problem down very, very substantially to at least keep it constant, instead of letting it grow, without bankrupting yourself. And to us, when we looked at the costs, it seems reasonable. So we don't see it as "either-or." We see it as a question of trade-offs.

**Q:** The Clinton administration has been active in attempting to belie the notion that environmental protection will result in economic sacrifice. How is that balance viewed in developing countries in your experience?

**A:** We found that people are very open to argument. They don't have strong preconceived notions. There is some myth around that says, "It's something we have to endure." But I've never seen a case where people were ideologically resistant or even personally resistant to reasoned arguments on the other side.

What's new in this business in the last 20 years is that we've learned a lot about how to order the information that's relevant, and present it to people in a way that's relevant to the decision they have to make. So we can go to China now, for example, and we can get China's own estimates of its pollution problems in cities, and we can say, "Doctors have now studied the impact of pollution at this level on human life, and we know your level of air pollution, that is, we know so many thousands of people are dying every year from air pollution. So that's part of the cost you face." That's something they haven't had presented to them in that form before.

It was a nebulous idea before. Yes, there's damage from pollution. Now, thanks to a lot of work by a lot of people, we can make it a lot more precise. We've also learned a lot about cost. So we can tell them how much each increment of cleanup will cost them. Then they have a framework for making

decisions in a more ordered and political way.

**Q:** In many industrialized nations, development created life-threatening pollution problems and public health crises. Then pollution problems had to be reversed in an emergency situation. With the information you describe, are developing nations going to be able to avoid those mistakes?

**A:** I think actually we don't even have to speak in the future tense. Our experience in a variety of very large industrializing countries like Mexico, China, Brazil, India, and Indonesia, in every case, has shown us that there's a large group of people who are aware of these things. They're working very hard on these things. And in fact, in places like China, they've succeeded in pretty well curbing the problem in the sense that there's no net growth in pollution in most Chinese cities. In some it's declining, yet the economy is booming and the society is very poor, so we might even call that a leap frog. They have jumped a step. At a much lower level of income, they've succeeded in beginning to rein in the problem seriously without curbing their economic growth.

**Q:** How did they do that?

**A:** Partly, they've been very effective in applying some regulatory approaches that weren't considered to be feasible for them in the past, like pollution charges. This is an idea that is very popular in Europe. You charge people per unit of pollution, and they have to take the charge into account as an economic cost, and that has a very salutary effect on management. Once it's part of the management calculation, people take it seriously and they reduce pollution quickly.

In the past, people had a sense that the developing countries didn't have the managerial or institutional capability to do this. But China, Colombia, the Philippines, and Malaysia and a variety of other countries have shown that's not right. At a very early stage of growth, you can bring instruments like this to bear and you can have a profound impact on pollution.

For example, in Malaysia they had a huge problem from palm oil production in the 1970s. Palm oil is a very large commodity in international

trade, and it is very highly polluting for water. The Malaysians did a remarkable job of cleaning that up in a period of 10 years, partly due to instruments like pollution charges.

So there's that whole set of things. But maybe more fundamentally, they're now seizing on an entirely new approach that reflects things that have also been done in the U.S. and other places. That is, to bring the public into it at a very early stage, to get the regulatory problem out of the back rooms, out of interactions between inspectors and factory managers and into the public domain, so that people know what their problems are, what the sources of those problems are, and what can be done about that. That can be very powerful.

If there is a central message in this book, it has to be with the documentation of the power that people have found in that approach of public participation and public knowledge about pollution. And that's now spreading very fast.

**Q:** Let's explore the whole concept of charges more. How does it contrast with the way things were done in the past?

**A:** Let's take the U.S. case. The tradition in the U.S. was to have a rule about emissions. It might be a rule about a particular factory and how much pollution that factory could emit. Any emission below that standard was legal. Any emission above that standard was illegal, so it became an enforcement issue in the U.S. The Environmental Protection Agency (EPA) has been pretty effective in monitoring and enforcing what is really a pretty complicated system.

So when the Philippines, Indonesia, Mexico, and Brazil got into this game in the 1970s and '80s, their first instinct was to adopt what had been used in places like the U.S. So they put in the rules. They very quickly ran into some problems. They didn't have an EPA. They didn't have an effective enforcement apparatus. The courts were frequently corrupted. There were no effective fines. So the rules were there, but enforcement was practically null. They realized after some time that they didn't have the whole package, and they couldn't make it work.

Charges are very different. A charge says basically we're not treating this as a criminal problem. We're saying that you're costing the environment by polluting. You're costing us by polluting, and that's something you're going to have to pay for. The more you cost us, the more you're going to pay. Every unit of your pollution, you'll pay for.

So every factory manager, every business person is then faced with this fact every month. "I'm polluting, I'm paying, there's a cost stream, and there's something I can do about that." They simply treat it as a management decision. It's a bottom line issue.

Good government agencies that have good technical advice can go to them and say, "Look, you've got expenses, and there are ways to get those expenses down. Let us suggest different ways in which you can abate your pollution at a reasonable cost, and then you can dispense with a lot of this cost." That's a good relationship between the agency and the business person. Business people understand that.

We found remarkable changes of posture almost overnight. It's really quite phenomenal. In Colombia, in a case documented in this book, in the Rio Negro basin, near Medellin, there's a very nice operation by the local pollution control agency that does charges. Within the first six months of serious implementation of charges, they got something on the order of magnitude of a 50-percent drop in the serious organic—meaning oxygen-depleting—contamination of water from local industries. Once they saw that this cost would be there forever, they started acting seriously to do something about it. So, our conclusion, this works well.

**Q:** It seems that to assess those charges would be a more complex regulatory process than determining if a factory crosses the legal limit. You said earlier that many countries had a difficult time establishing a strong regulatory apparatus. So how is it that they are able to make these pollution assessments?

**A:** Over time, people are finding all sorts of ingenious ways to solve some of the administrative problems. For example, in Colombia, Tomas Black-

Arbelaez, the national leader of the pollution charge program, faced the problem that many of the local agencies that are implementing charges have very little experience with handling funds.

So Tomas and his colleagues made a deal with one or two of the largest banks in Colombia to serve as collection agencies. For a small percentage of the surplus cash, they're given the information from the agencies about who should be billed. They present the bill. They use their collection facilities to get the money. Then they keep the money on account just like they do other people's accounts. They put it out at interest in the market to get more money for that. And if companies then resist the billing, they lose some of their private credit rating. So from the point of view of the government, it economizes on administrative resources, and it also turns out to be pretty efficient.

**Q:** Let's return to the mention you made earlier about public involvement in the environmental regulatory process as another tool to contain pollution in an effective manner. How has that worked?

**A:** This is a community struggle. It's a story about balance and local environments. In developing countries, what's been lacking in the past on the part of most people in communities in poor countries is that they've had no good information about what's going on. They've had no way to understand what the stakes were. Of course, there were obvious cases, such as people sickening and dying from very severe pollution. But the slow insidious daily stuff that can affect your life long-term was largely invisible. Now, we have a proliferation of programs that very clearly identify the sources of serious pollution and the damages from that pollution in ways that local communities can absorb. What people are revealing is the normal human tendency to want to defend themselves and their families. But because they do value the economic side of it, they're willing to talk. It's very rarely the case that they're going to assault the sources of local employment, but they're certainly willing to bring pressure to bear to find the middle ground.

So in Indonesia, for example, which is cited extensively in "Greening Industry," we find the story of the PROPER (Program for Pollution Control, Evaluation and Rating) program, which is a program that rates factories on the degree of their pollution. It rates good performance as well as bad performance. The story of the implementation of that is really a story of local action, local negotiation, and local improvement in response to the information that's been put out. No one wants to be poisoned by pollution, so I think it's a very important component of this.

**Q:** Are you saying that there are two factors increasing public involvement—a greater availability of information about environmental pollution, and a greater dissemination of information?

**A:** You're looking at a huge change in tradition, a move toward transparency. It's really quite remarkable. Technologically and economically, it's much more possible now to disseminate information, to analyze information in the information economy. Those effects are there in Mexico and Brazil and China as well as in the U.S. So it's partly a question of the feasibility of doing it, and partly it's a change of consciousness that's occurring everywhere. People have a sense that the government is not the sole player here, and that people's own concerns should be at the table directly, not through some agency, and the balance is shifting.

It's really quite heartening to see to what an extent some of these measures that have basically opened it up have really improved people's lives and in very short order. If we had to say one thing about the satisfaction of having done this work in the World Bank, that's been it—to see that rapid change in such a short time that clearly reduced problems for people.

*The World Bank report can be viewed at [http://worldbank.org/nipr/greening/full\\_text/index.htm](http://worldbank.org/nipr/greening/full_text/index.htm)*

*Charlene Porter writes on global issues for the Office of International Information Programs, U.S. Department of State*

# “Resource Cities” Partner for Progress

By Charlene Porter

*A U.S. Agency for International Development (USAID) program supports partnerships between U.S. and international cities to help improve environmental management.*

“Think globally, act locally” has become a widely used slogan in the environmental movement. While slogans can be inspirational and motivating, real environmental progress is achieved day by day through a multitude of changes, actions, and decisions taken by individuals and governments throughout the world. If sound planning, inclusive governance, responsible financing, and solid management are part of that decision-making process, real environmental progress is more likely to occur.

Dayton, Ohio, City Manager Valerie Lemmie helped government officials in Lusaka, Zambia, improve their solid waste collection operations. “It’s not just an environmental issue. It really is a community issue, it’s an organizational issue, it’s a capacity issue.”

Lemmie worked with Lusaka officials, participating in the Resource Cities program sponsored by the U.S. Agency for International Development (USAID) and directed by the International City/County Management Association (ICMA). The program is allowing city officials from transitional nations to learn from the experience, successes, and mistakes of their counterparts in U.S. cities who have confronted many of the same problems. The city partnerships explore a wide range of urban issues: environmental protection, economic development, historic preservation, and strategic planning.

The Resource Cities program “took practitioners — people that every single day are responsible for the delivery of public services—it took them and used them as the technical advisors and counselors to their peers,” according to Valerie Lemmie, city manager in Dayton, Ohio. Her city was paired with Lusaka, a city of almost 2 million people, in a two-year exchange program funded by a USAID grant. “The program was quite good,” said Wilson Lungu, the director of solid waste collections in Lusaka.

Launched in 1997, the Resource Cities program comes at a time when decentralization of government authority is taking place worldwide. U.S. participants strive to help municipal officials build more effective and responsive governments as they weather these political changes, at the same time they struggle with the needs of rapidly expanding urban areas. Thirty-one partnerships have been established under the program worldwide, involving more than 60 U.S. and international cities and municipal associations. Twenty new partnerships are expected to be completed in the next two years, according to ICMA.

Johannesburg, South Africa, and Houston, Texas

Waste management officials in Johannesburg and Houston first teamed up in 1997 at a time of wrenching change in South Africa. For local governments, the end of apartheid created a new imperative to provide services to all citizens—regardless of race—and to create greater equity and opportunity among the city employees who provided the services.

Amidst this national upheaval, it doesn’t seem surprising that public awareness of environmental

concerns was low. "There's no awareness at all," said Christa Venter, the executive officer for waste management in the Eastern Metropolitan Council of Johannesburg, one of four local councils in the city of 3.5 million people. Basic issues of survival are more compelling than environmental concerns for the large population of urban poor, Venter said in a telephone interview from Johannesburg.

But guided by the experiences of waste management officials in Houston, Venter and her associates have developed a public awareness campaign to support a waste recycling program in Johannesburg.

"If you start trying to teach people about recycling, they're likely to start thinking about it at home," Venter explained. Learning from the Houston experience, the Johannesburg waste management officials engaged in a partnership with a private company to start a "buy-back" program which has the dual benefit of recycling material and providing some income for unemployed urban poor.

"They collect paper for nothing, and they must bring it to a center where we will be paying them, say, 20 cents for a kilogram or something like that," Venter said. "All the people that are unemployed at the moment, it's using them and they are making some money out of it."

Venter said involvement in the Resource Cities program helped her develop a "total strategy" for waste collection which has led to an expansion of collections in previously unserved areas, public environmental education campaigns, and new recycling partnerships with the private sector.

For Houston's director of solid waste management, the Resource Cities program offered a rare opportunity to work with a community "in the midst of a total change from one society to another society." Everett Bass was eager to show his Johannesburg counterparts how diversity had become a strength in the government of his multicultural city. "It was important that they have the opportunity to see people of color in management and decision-making positions, all up and down the solid waste management hierarchy."

Christa Venter acknowledged that Johannesburg

entered Resource Cities at a time when managers were grappling with the transition from a "white-male dominant" management structure to a more inclusive system. Venter said her department is now changing after witnessing how Houston had made racial diversity a personnel asset in its waste management system. "Everyone is actually participating in decision-making—it's not only coming from top management."

Reflecting on his involvement in Resource Cities, Bass said Johannesburg has made solid progress in improving its waste management system, but his own reward is no less significant. "Being an African American, it's really ... been heartwarming to be able to feel like you're being a part of creating the new South Africa. That's been just an indescribable delight, having the opportunity to participate."

Lusaka, Zambia, and Dayton,  
Ohio

Solid waste collection and disposal is one of the biggest problems in Lusaka, a city experiencing an unprecedented population expansion and its resulting problems of overcrowding, congestion and poor environmental living conditions. Illegal dumping is described as "rampant" in an ICMA report on the Lusaka-Dayton partnership because of the city's lack of equipment and resources to provide collection services in areas beyond the central markets and business districts.

"The situation now is much better than it was before," said Wilson Lungu in a telephone interview about his participation in the Resource Cities program. Developing a better overall management strategy for waste collection is one of the key lessons he took back to Zambia after observing operations of his counterparts in Dayton.

"If one has a good solid waste management system, you have to have good planning. Planning in terms of storage, in terms of collection, in terms of transport. If this planning is done, then a lot of things can fall into place," Lungu said.

Dayton city manager Lemmie saw Lusaka improve as a result of the Resource Cities partnership. "The

city became much more effective in developing a process under which they would routinely collect trash and dispose of it."

Heightening citizen awareness about the health and environmental importance of proper waste disposal was another positive outcome, Lungu said. "People must be instructed on why they should handle garbage in this fashion or that fashion because if they are not aware, then it's another problem," Lungu explained. He said his department has now begun a public education campaign using brochures, radio announcements, and public meetings to help develop improved awareness. "The response and results we're getting are very encouraging."

One of the Lusaka innovations that most impressed Lemmie was how the Zambian officials worked to draw citizens and nongovernmental organizations into the process of reshaping the system for refuse collection and disposal. The Dayton official watched her Lusaka counterparts "working

collectively in partnership to improve the environmental quality."

The Resource Cities program hasn't provided magic solutions to all of Lusaka's waste management problems, but Lungu now has clear goals on what his city needs to do: build a sanitary landfill site, and improve collections, transportation, equipment maintenance and staff training.

For Valerie Lemmie and her Dayton colleagues, involvement in the Lusaka partnership resulted in a renewal of their commitment to serve their own communities. She also said the Dayton-Lusaka relationship will last well beyond the original Resource Cities grant that funded the partnership. "We have met folks that I think will be friends and partners with the city of Dayton forever."

---

*Charlene Porter writes on global issues for the Office of International Information Programs, U.S. Department of State.*

# Clean Air Act Amendments Provide the Muscle to Fight Pollution

By Jim Fuller

*Amendments have been required to make the original U.S. Clean Air Act, passed in 1963, a truly effective tool for bettering the environment. Particularly effective was landmark legislation passed with overwhelming support by the U.S. House of Representatives and Senate in 1990. That legislation has led to substantial cuts in air pollution over the last decade.*

Just a decade ago, there was growing concern in the United States about increasing damage to the Earth's stratospheric ozone layer that protects people from skin cancer and cataracts. Acid rain went essentially unchecked, causing damage to aquatic life, forests, and buildings. Smog, linked to respiratory diseases and asthma, exceeded healthy levels in 98 cities. And millions of tons of hazardous air pollutants emitted by industry every year—with the potential to cause cancer and nervous system damage—went largely unregulated at the federal level.

In 1990, the U.S. Congress passed landmark bipartisan legislation that substantially strengthened the Clean Air Act. The 1990 amendments gained overwhelming support from the House of Representatives and Senate, setting ambitious air pollution reduction goals. The Clean Air Act, originally passed in 1963, had previously been amended only twice—in 1970, when the Environmental Protection Agency (EPA) was formed, and again in 1977.

Robert Perciasepe, assistant administrator of EPA's Office of Air and Radiation, told a Senate subcommittee recently that the 1990 amendments have led to substantial cuts in air pollution over the last nine years.

"The legislation was designed to achieve real results—and it has done so," he said. "We have made great strides in combating urban air pollution, toxic air pollution, depletion of the stratospheric ozone layer, and acid rain."

The Clean Air Act requires the EPA to establish National Ambient Air Quality Standards for reducing six of the most prevalent and health-threatening air pollutants, sometimes referred to as "criteria" pollutants: carbon monoxide, lead, nitrogen dioxide, sulfur dioxide, ground-level ozone, and particulate matter or soot.

According to the agency's latest report on air quality—based on the use of monitors to measure pollutant concentrations in urban and other areas across the country—emissions of the criteria pollutants fell 31 percent between 1970 and 1997. This included a 32-percent drop in carbon monoxide emissions, a 35-percent decrease in sulfur dioxide, a 75-percent reduction in soot, and a 98-percent decrease in lead emissions.

The near total elimination of lead pollution, a major health concern because of its link to neurological damage, is considered to be one of the biggest successes of the Clean Air Act. The reduction in lead emissions was brought about by phasing out lead in gasoline. Another major factor, according to a new study in the March 2000 issue of "Environmental Science and Technology," was limiting the incineration of municipal solid waste, which contains such things as paint and solder. Researchers at Rensselaer and Columbia universities in New York say the study's findings are vitally important to assessing the impact of unregulated incineration of solid waste in many countries of the world.



Perciasepe said that in addition to the significant reductions in the criteria air pollutants like lead and sulfur dioxide, rules issued since 1990 are expected to reduce toxic emissions from industries such as chemical plants and dry cleaners by 1.5 million tons a year—about 10 times the reductions achieved prior to 1990. Many of these hazardous air pollutants, such as vinyl chloride, arsenic, and benzene, are known to or suspected of causing cancer or other adverse health effects.

"The air in our nation's cities is substantially cleaner than in 1990," Perciasepe said. "Nationally, the 1997 average air quality levels were the best on record for all six common pollutants subject to air quality standards. The 1998 levels were as good or better for all pollutants except ozone.

"Since 1993, an unprecedented number of cities have met the health-based national ambient air quality standards," he added. "For example, of the 42 carbon monoxide areas designated as non-attainment in 1991, only six areas continue to experience unhealthy levels of carbon monoxide." An area is given "non-attainment" status when it does not meet the EPA's clean air standards.

He said a key reason for these air quality improvements is that the Clean Air Act's 1990 amendments call for cleaner motor vehicles and cleaner gasoline. In a typical U.S. city, automobile exhaust accounts for up to 90 percent of carbon monoxide and 60 percent of nitrogen oxide in the air. Largely due to improvements to the catalytic converter, which converts noxious carbon monoxide and nitrogen oxide molecules into innocuous chemicals, cars today are 95 percent cleaner than they were in 1970.

In 1997, EPA mediated an agreement among the states and U.S. auto companies that calls for automakers to produce cars 50 percent cleaner than today's cars by 2001.

EPA officials emphasize that all the improvements in air quality have occurred at a time of growing population and strong economic growth. From 1970 to 1997, U.S. gross domestic product has grown by 114 percent, the U.S. population has grown by 31 percent, and the number of kilometers traveled by motor vehicles has increased by 127 percent.

"Those are all pressures pushing things in the opposite direction—toward greater pollution," said a spokeswoman with the EPA Office of Air and Radiation. "However, during this period of strong economic growth, we've been able to decrease air pollution. That I think is a significant way of highlighting the success of the Clean Air Act."

According to the Congressional Office of Technology Assessment, the cost of complying with all environmental regulations combined has amounted to 1.5 percent of the U.S. gross domestic product. And yet, according to an EPA report required by Congress, the Clean Air Act has yielded human health and environmental benefits that have exceeded costs by more than 40-to-1.

"We also did a prospective study, looking ahead from 1990 to 2010, and again the benefits exceeded the costs by a ratio of four-to-one," the spokeswoman said. "In any case, the benefits of these programs are far outweighing the costs."

According to Perciasepe, environmental rules have forced the development of new, cleaner technologies—often at lower costs than originally predicted.

"The Clean Air Act requirements have created market opportunities and pressures for technology breakthroughs and performance improvements," he said. "Over and over again industry has responded ... producing breakthroughs such as alternatives to ozone-depleting chemicals and new super-performing catalysts for automobile emissions."

Perciasepe said there are many examples of technologies that were not commercially available 10 years ago, but that now are important parts of pollution control programs, such as reformulated gasoline, selective catalytic reduction for nitrogen oxide emissions from power plants, and cleaner-burning wood stoves.

"EPA has also identified a number of emerging technologies, ranging from fuel cells to (ground level) ozone-destroying catalysts, that may hold promise for achieving additional cost effective reductions of smog, nitrogen oxide, and particulate matter," he said.

One of the most innovative ideas for controlling pollution has been a market-based program that allows utilities to "trade" emissions allowances to reduce acid rain. When sulfur dioxide and nitrogen oxides from burned fossil fuels mix with water and oxygen in the air they form sulfuric and nitric acids, which fall to the ground as precipitation, damaging trees and acidifying lakes and streams. Higher sulfate levels in the air also increase the frequency and severity of asthma, bronchitis, and other respiratory conditions.

A National Surface Waters Survey found that hundreds of lakes in New York's Adirondack Mountains were too acidic to support a host of fish species, and some of the region's lakes and their estuaries are completely barren to sensitive species like brook trout.

Electric utility plants powered by coal or oil account for about 70 percent of sulfur dioxide and 50 percent of nitrogen oxide emissions in the United States each year. Under the pollution allowance trading system, one allowance equals the right to emit one ton of sulfur dioxide per year. A utility that emits less than that amount accumulates pollution credits, which it can then either sell or save to use later. So far U.S. utilities have exchanged over 23 million trading allowances in more than 660 transactions.

"The results have been dramatic," Perciasepe said. "So far, national sulfur dioxide emissions have been cut by more than five million tons, mostly through this program—and at lower cost than predicted. As a result, rainfall in the eastern United States is up to 25 percent less acidic, and some ecosystems in New England are showing signs of recovery."

He said separate requirements for nitrogen oxide controls for utilities are expected to achieve a two-million-ton reduction of those emissions beginning next year.

When fully implemented in 2010, the Acid Rain Program, passed as part of the 1990 amendments to the Clean Air Act, calls for sulfur dioxide emissions to be reduced by 10 million tons per year. An industry study in 1989 predicted the cost of fully implementing the program at between \$4,100 million and \$7,400 million. But most recent

estimates by the U.S. General Accounting Office estimate the cost at only \$2,000 million, and estimates by independent economists put it as low as \$1,000 million.

However, despite continued improvements in air quality, the EPA reports that approximately 107 million people lived in U.S. counties with unhealthy air in 1997. Emissions of nitrogen oxides, which contribute to the formation of ground-level ozone or smog, increased by 11 percent between 1970 and 1997. Smog can reduce lung capacity and decrease the body's ability to fight off infection.

Even some national parks have experienced high levels of air pollutants being transported over great distances from their original source. For example, concentrations of smog in remote locations of the Great Smoky Mountains National Park in the eastern United States have increased nearly 20 percent over the last 10 years.

In 1997, the EPA drafted new national air quality standards for soot and smog, two of the most harmful and persistent criteria pollutants. The new rules sought to control even finer particles of soot—those as small as 2.5 microns across (a human hair is 40 microns wide). Allowable levels of smog were reduced from 120 parts per thousand million to 80 parts per thousand million.

The new standards were based on the most intense review ever undertaken by the EPA, involving 250 peer-reviewed scientific studies on particulate matter and ozone, plus three Congressional reviews.

But in May 1999, in a suit brought by several industry groups and coal-dependent states, a federal appeals court overturned the agency's new smog and soot rules, saying the EPA had gone beyond its constitutional authority. The court ruled that the EPA had overstepped its legal regulatory bounds by imposing the new standards, and that such rules had to be passed by Congress. The same court upheld its own decision in October 1999, rejecting an EPA appeal. The Department of Justice has filed a petition to have the case heard by the U.S. Supreme Court, but a decision on whether to hear the case will take some time.

In the meantime, Perciasepe has expressed concern that progress on reducing smog appears to have slowed or stopped in a number of areas in the last couple of years, and that in some areas "we are in danger of backsliding." He said the national average ozone level increased by 5 percent in 1998. Also, in recent summers, the agency has seen increases in the number of times air quality exceeded national standards in certain cities and national parks.

Most environmentalists agree that better standards for ozone and particulate matter are needed. Frank O'Donnell of the Washington, D.C.-based Clean Air Trust said the new standards struck down by the court "were an updating of the science and clearly would provide better health protection—and to more people."

On the other hand, the Justice Department has just announced settlement of a major Clean Air Act action against a Florida utility that will prevent tens of thousands of tons of air pollution from entering the atmosphere each year. The suit charged that the utility's aging power plants made major upgrades without installing equipment required to control smog, acid rain, and soot.

The settlement—which could influence the outcome of additional lawsuits against utilities representing 32 aging power plants in 10 states, is unprecedented in scope, and marks a major step in the government efforts to stop pollution illegally released from coal-fired power plants.

---

*Jim Fuller writes on global issues for the Office of International Information Programs, U.S. Department of State.*

# It Takes Us All, It Takes Forever

By Charlene Porter

*The U.S. city of Chattanooga, Tennessee, has received international attention for its progress in cleaning up the environment. Citizen participation and partnership have been crucial to this success.*

A crowd gathers in the assembly room of a public school building as winter's afternoon light fades on the Cumberland Mountains that surround the riverside city of Chattanooga, Tennessee. The evening meeting culminates a four-day series of work sessions in which hundreds of citizens have come together to exchange ideas and envision how the city's Alton Park neighborhood can be revitalized.

Alton Park needs help desperately. The school where the meeting is held is surrounded by blocks of bleak, aging, public housing. The area is pockmarked with shuttered businesses, abandoned industries, and hazardous waste sites, and is rimmed by Chattanooga Creek, considered one of the most polluted waterways in the Southeastern United States.

A consultant makes a presentation of what the community envisions for itself—new housing, new businesses and restaurants, a park along the creek, linked to a network of "greenways" that wind through the city, connecting to Chattanooga's Riverwalk, a 12-kilometer recreational trail that follows the winding river on its course through forested mountains.

The plan seems ambitious, if not unachievable, for a neighborhood where poverty and desperation seem to line the streets. But Chattanooga is a city that has learned "opportunity thinking," a city that

has already proven a riverfront industrial wasteland can be transformed into a public place of such elegance and innovation that visitors from around the world come to wonder at the achievement of urban renewal. Considering the transformation that Chattanooga has made in the last 30 years, revitalization of an inner-city neighborhood like Alton Park seems like a goal within reach.

## History

In 1969, the federal government conducted a national air quality survey and found Chattanooga, Tennessee, had the most polluted air of any city in America. The particulate matter in the air was three times the level designated safe by federal health standards. Chattanoogaans who remember those days still talk about how drivers had to use their automobile lights in daylight hours, how businessmen would change their shirts at midday after a morning exposed to soot in the air.

"You couldn't see Lookout Mountain (elevation 600 meters) just standing a quarter mile away from it," recalled Bobby Davenport, a businessman-turned-land preservationist whose family has been in the city since the 1860s. "We had a reputation of being a lousy place with dirty air and dirty water and no vision for its future."

"People were embarrassed," remembered Elizabeth Bryant, development director for the Tennessee River Gorge Trust. Chattanoogaans began to mobilize for environmental improvement, Bryant believes, because of self-pride.

Robert Colby is the director of the Chattanooga-Hamilton County Air Pollution Control Bureau, which is the chief regulatory authority in the area. After the findings about the city's poor air quality

became national news, Chattanooga quickly took action, he said in an interview. "So the community pretty much came together. Civic groups, government, the medical community, and industry came together to do something."

New air quality standards were adopted and new monitoring techniques were instituted. Industrial leaders began to set the example by cleaning up their emissions. Within only a few years the efforts paid off, and Chattanooga again rose to national attention for its progress in reversing air pollution.

But other forces were at work in this mid-size southern city at the same time. It was besieged by many of the same problems that troubled American cities from coast-to-coast through the 1970s and 1980s. Heavy industry fell on hard times. Plants closed and left abandoned, polluted sites behind. A population move toward the suburbs resulted in a decline of the downtown district.

Those trends brought Chattanooga to another realization, Davenport said. "In order to create a place, an environment for attracting new activity, new jobs, new wealth, we had to remake Chattanooga."

Through the 1980s, a process began that involved citizens in their city's makeover in a way that was rare for a community in which power had been closely held by a small circle of people. The leaders began to reach out and involve the public in decision-making. Rather than turn to consultants and experts for new ideas, Chattanooga city officials sought public opinion on how to remake the city, how to create a new vision for its future.

"The people were the think tank," said City Councilman David Crockett, who first became involved in the city's transformation as a community activist and has served in government since 1990. He credits these public outreach sessions as being the initial source for ideas that ultimately became projects now recognized as the linchpins of downtown Chattanooga's renaissance: a riverside aquarium, a big-screen theater, the Riverwalk, a pedestrian bridge spanning the Tennessee River.

"One of the reasons that the stuff we've done is so well loved is because a lot of people had a role in making it have that shape and form," Davenport said. "And that was a big shift in how things were done."

Virtually every American city has had similar urban problems during the last 30 years, and struggled for solutions. But what sets Chattanooga apart is the degree of consideration given to environmental preservation throughout these efforts, and the degree to which the environment itself has been a key to the city's renewal, and is now a critical part of its future.

### Connections

Councilman Crockett takes a visitor to one of the parks constructed along the meandering Riverwalk route, and points out the blue herons that have returned to the area in the years since environmental cleanup began. He greets other visitors to the water's edge—the joggers, the walkers, the cyclers, the fishermen—people who come from every class, color, profession, and neighborhood in Chattanooga, the urban core of a metropolitan region with a population of about 450,000.

"The Riverwalk has done more to bring people together than anything else," he said. Not only has this outdoor recreational resource brought together people who may otherwise have little social contact, he believes, but it has also re-connected people to the river, and reawakened them to their personal responsibility for their city, captured by the slogan, "It takes us all; it takes forever."

Descended from the legendary American frontiersman Davy Crockett, Councilman Crockett insists that urban Americans have lost touch with the natural world. They believe their water source is the kitchen faucet, and don't connect their own lives and well-being with the natural sources of water that supply their cities. The Riverwalk has reestablished that connection for Chattanooga, Crockett said, and in turn, has helped to create an ever-growing awareness for the importance of preserving water quality and other environmental protections.

"Connections are what it's all about," Crockett said, and in his mind such connections should be a foremost concern in any innovation that the city undertakes. "The greenways are about connections."

The current 12-kilometer Riverwalk is slated for expansion to become more than a 35-kilometer trail. It is also part of a larger plan to preserve green space and create parks throughout the metropolitan region, all linked by a network of greenways that will be a source of recreation, but also a commuting route for cyclists who might leave their cars at home and bike to work.

Greenway Park is 200 hectares of green space, a farm within the city limits, acquired by the city government for public use. A creek, tinted blue by the native limestone, winds under arching trees; a grassy bank stretches off to a wooded hillside. Calling the green space endeavor the most important of all the projects the city has built, Crockett sweeps his arm across the scene saying, "You can't build this."

"The thing that fascinated me about the greenway concept was the ability to connect all the public and private land conservation initiatives around the periphery of the city to the city center," said Davenport, who is director of the Trust for Private Land, a non-profit organization that is active in the acquisition and preservation of green space for public use.

Supplementing the city's work, private organizations have been key players in the green space effort. "A great number of people have come together over the last decade to say these are really important places and they are worthy of our affection and they're worth preserving," Davenport said.

The Tennessee River Gorge Trust is another private group, working to protect a unique river canyon that borders the city. Since it was founded in 1986, the group has assured protection of more than half of the 10,000 hectares in the gorge. Like many of the efforts that have contributed to Chattanooga's revival, the River Gorge Trust was an ad hoc creation, by citizens who felt a love for the land, and a responsibility to their community.

Director James Brown said, "We didn't need the government to tell us how to do these things. We did it ourselves, and we kind of did it in this amorphous, non-organizational way."

### Partnering

The private sector and the public sector—business and city government—have an unusual record for successful partnerships throughout the history of Chattanooga's renaissance. Many who have been involved in the process through the years cite those arrangements as key to the city's success.

"It's this catalytic thing.... The government is there to partner with the private sector," according to Stroud Watson, the director of the Riverfront/Downtown Planning and Design Center. He discusses Chattanooga's progress in an office cluttered with models, drawings, and photographs of the city during various stages of this urban transformation.

The Design Center itself provides further testament to the importance of partnership in Chattanooga. It serves as a resource for planning and design of urban development projects, whether proposed by private or government interests. Its very existence is the result of a cooperative vision and funding arrangement between the regional planning agency, the University of Tennessee, and a private foundation.

Perhaps the single-most successful example of creative partnership is the effort that has made Chattanooga an international trailblazer in the use and manufacture of hybrid electric vehicles. Electric passenger buses provide transportation service in the downtown area, as part of the Chattanooga Area Regional Transportation Authority (ARTA) system.

The buses are manufactured by local company Advanced Vehicle Services (AVS), which was founded to fulfill ARTA's order for a non-polluting transportation alternative for the downtown area. AVS, ARTA, and other groups interested in electric vehicle technology are partners in what they call a "living laboratory," the real-world operation of these innovative vehicles on city streets each day. The buses are carefully

monitored in their performance, and AVS is able to use that information to modify its manufacturing processes.

"We take the thing and we make it, we break it, we fix it, and we try again," said Rick Hitchcock, president of AVS. He also praises CARTA for its willingness to accept an ever-evolving fleet of vehicles, and to work with the private company in an ongoing experiment with a cutting-edge technology

AVS has built just over 110 hybrid-electric buses since production began seven years ago. About one million riders a year are on the buses, instead of in personal cars, according to local estimates, keeping air pollution levels down and easing city traffic congestion. AVS is building a market for the vehicles outside Chattanooga, and its buses are now on the streets in a number of cities also concerned with reducing air pollution, including Los Angeles, California; Tempe, Arizona; and Miami and Tampa, Florida.

But the electric-hybrid buses that cruise quietly up and down the main street from morning till night have done one more thing in Chattanooga's effort to become one of America's greenest cities. "The electric bus program has been the most visible and most successful element of this broad palate of sustainable ideas," Hitchcock said. As the clean buses have become a fixture of daily life in Chattanooga, people have become more familiar with the broader concepts of environmental preservation and sustainable living.

"We don't just carry people who know how to spell sustainable.... We carry everybody. And they all take pride in knowing that they're riding in a unique transportation system," Hitchcock said in an interview at the AVS manufacturing plant.

### The Future

Hitchcock is now president of a company pursuing a cutting-edge technology, but he's played various roles in city government, as a community activist, and as a member of the CARTA board. The city

has followed a multi-pronged strategy for change in the last 20 years, he said, a strategy that will also shape its future. "One of the things that has made it go well is that instead of focusing on one thing, we have put in play 20 things. Then when 11 succeed, four get delayed, five are abject failures, we still have a net that is positive."

Expansion of the greenway network, enhancement of the riverfront, and further urban renewal projects are ongoing priorities for the city. But the most comprehensive plan now in play seeks to further revitalize the downtown business district at the same time it establishes Chattanooga as a center for innovation in environmental design and technology.

Councilman Crockett drives past the vacant lots and abandoned warehouses in the area known as Southside, and describes the city's vision for what's to come. With construction of a trade center, a conference center, and an array of other facilities in this area, Crockett describes a project that will be "pushing the envelope on building, energy, and transportation systems."

In construction of these facilities, the city will employ the most advanced techniques and technology to recycle water, generate energy, and create virtually self-sustaining buildings according to the plans now underway. The city will work to make the area an international center for conferences and meetings on environmentalism and sustainability.

The "living laboratory" is a tag initially hung on Chattanooga's experiment with hybrid-electric buses, but Crockett envisions a time when the whole city is involved in the laboratory concept. "The goal is to be a defining place for breakthroughs in sustainability," he concludes.

*For further information on Chattanooga visit [www.chattanooga-chamber.com/](http://www.chattanooga-chamber.com/).*

---

*Charlene Porter writes on global issues for the Office of International Information Programs, U.S. Department of State*

# Sustainable Development: A Wave of Local Innovation

*Following are excerpts from a May 1999 report released by the President's Council on Sustainable Development, "Building Livable Communities for the 21st Century." Formed in 1993, the council has been a leading force in the movement to promote prosperity and opportunity in communities while at the same time seeking to reduce pressures on the environment. These goals are reinforced by the council's vision statement calling for a "life-sustaining Earth" that supports "a dignified, peaceful and equitable existence." The preface of this report states: "The council, building on the wisdom of citizens, and business and government leaders, has sought in this report to articulate the goal of a sustainable America in terms of concrete ideas, examples of success and proposals for national policy. From creative ways to eliminate pollution to mortgages that fight sprawl, the council's report highlights approaches that work and has built consensus around innovative ideas."*

Effective responses to the challenges and opportunities posed by the new American landscape cannot originate in Washington, D.C. They must arise in communities across the nation as concerned citizens join in partnership with civic and business leaders.

Indeed, a wave of local innovation already is sweeping across America. Communities and regions are taking imaginative steps to tackle economic, social, safety, and environmental challenges posed by our new patterns of development. This wave of community-based activity was recently described in the final report of the National Commission on Civic Renewal, chaired by William Bennett and former Senator Sam Nunn.

Within the neighborhoods, the towns, the local communities of America are the stirrings of a new movement of citizens acting together to solve community problems. It is a nonpartisan movement that crosses traditional jurisdictions and operates on a shoestring. It is a movement that begins with civic dialogue and leads to public action.

In many cases, communities are making progress not by treating their problems in isolation, but by reaching out to partners in their neighborhoods and regions. New partnerships are emerging in a few places as cities, suburbs and rural areas begin to work together, recognizing that their problems—such as abandoned brownfields in cities and the loss of open space in the outer suburbs—are tied together. Other partnerships emerge as the private sector and community-based groups join together with civic leaders to tackle the economic, social, safety, and environmental challenges facing their communities.



Some communities are beginning to question common assumptions about growth and development. While growth is essential to our continued economic prosperity, the individuals and communities involved in these partnerships are beginning to evaluate the costs of current growth patterns. They are questioning the economic costs of abandoning infrastructure in the city, only to rebuild it in the suburbs. They are questioning costs to our quality of life from ever increasing traffic congestion. In other words, people and communities are trying to distinguish types of growth that solve and prevent problems from those that cause problems. They want to promote sustainable growth—growth of jobs, wages, educational achievement, and time with family—but not growth of pollution, poverty, commute times, and crime. Those who make such distinctions are not “no growth” advocates, or even “slow growth” advocates. They want the jobs, tax revenues, and amenities that development can provide. But they want it without degrading their environment, unduly raising their local taxes, or diminishing their quality of life. And, they are beginning to believe that continuing our current development patterns won’t achieve these goals. They are in the vanguard of a consensus emerging at the community level in support of a better way to grow: smart growth.

Smart growth represents efforts to promote new patterns of development that are:

- Economically smart because they build upon past investments in existing communities; do not require heavy tax increases in suburban areas to pay for new public services; reduce congestion and thereby increase personal time; and preserve prime farmland for agricultural use.
- Environmentally smart because they encourage the redevelopment of brownfields sites; and reduce threats to air quality, water quality, and open space.
- Socially smart because they promote economic opportunity and encourage a “sense of community” and a “sense of place” within communities and across regions by bringing citizens, businesses, and governments together to solve common problems.

Once the province of a small group of citizen activists, smart growth efforts have blossomed into a broad-based movement intent upon improving America’s communities. Citizens once silent are finding a voice. Places once abandoned are being reborn. Land once endangered is being preserved. Battlegrounds are giving way to common ground, as people once adversaries are becoming partners in place.

#### Local and State Smart Growth Efforts

Proof that smart growth efforts are spreading across the country can be found in the November 1998 election returns. From Ventura County, California, to Cape Cod, Massachusetts, voters approved more than 200 ballot measures addressing growth-related concerns. In New Jersey, voters overwhelmingly approved \$1,000 million in expenditures over 10 years to preserve half of the state’s remaining open space. Voters in Michigan approved \$675 million in bonds that can be used for brownfields cleanup, parks, and urban waterfront redevelopment. In Florida, \$3,000 million will be provided over the next 10 years for acquiring and maintaining land for recreation and preservation. In total, over \$7,000 million was approved for preserving open space that is threatened by development pressures.

This new movement didn’t materialize overnight. For several years, new partnerships have been emerging as concerns about sprawl have grown. The breadth of these new partnerships was demonstrated in 1995 when four very different organizations—the Bank of America, the State of California’s Resource Agency, the Greenbelt Alliance, and the Low Income Housing Fund—joined together to produce a report entitled “Beyond Sprawl: New Patterns of Growth to Fit the New California.” The groundbreaking report declared that:

One of the most fundamental questions we face is whether California can afford to support the pattern of urban and suburban development, often referred to as ‘sprawl,’ that has characterized its growth since World War II.

This is not a call for limiting growth, but a call for California to be smarter about how it

grows—to invent ways we can create compact and efficient growth patterns that are responsive to the needs of people at all income levels, and can also help to maintain California's quality of life and economic competitiveness.

Across the nation cities, counties, and towns are pioneering a wide range of innovative responses to the challenges posed by sprawl:

- In February, 1998, the Austin, Texas, City Council announced a Smart Growth initiative and charged a council subcommittee with overhauling the city's land development code to develop a neighborhood-based planning framework, provide incentives for in-fill development, and simplify the development process.
- Over the past 18 months, 11 cities in northern California have enacted urban growth boundaries in an effort to focus future development in existing communities.
- In March 1999, the city of Tucson, Arizona, working with local developers and the federal Partnership for Advancing Technology in Housing, inaugurated a new 2600-unit housing development with a pedestrian-friendly design and homes that will use half the energy of typical new homes in the area. The community worked together to craft regulations that encouraged the design of a mixed residential, commercial, and light industrial development that is an attractive place to live and work, and offers enormous environmental benefits.
- The city of Fort Collins, Colorado, is expediting permitting (issuance of building permits) for exemplary developments with superior environmental performance.
- The city of Charleston, South Carolina, is creating dispersed affordable housing that revitalizes neighborhoods and spurs private investment.
- The city of St. Louis, St. Louis County, and the state of Missouri are using their new "Metrolink" transit system as a potential focal point for new development. This "transit-oriented

development" approach seeks to integrate land use and transportation planning to provide more walkable communities while easing traffic congestion.

- The city of Minneapolis recently joined the Minnesota Smart Growth Network, which includes more than 20 nonprofit, government, and business organizations, including the Metropolitan Council, the St. Paul Port Authority, and the Builders' Association of the Twin Cities. The network is facilitated by the nonprofit 1000 Friends of Minnesota, which works to balance growth with conservation and social equity.

States share land use responsibilities with local communities, and a growing number are launching innovative programs to encourage and support local smart growth efforts:

- Under the leadership of Governor Parris Glendening, the state of Maryland has taken the first steps toward implementing a statewide smart growth strategy. Citing exploding fiscal costs, loss of green space, threats to the health of the Chesapeake Bay, and infrastructure maintenance shortfalls, Glendening formed a bipartisan coalition within the state legislature to enact smart growth legislation in 1997. Under the new legislation, local governments designate "smart growth areas" using state criteria (e.g., density, existing roads, water and sewer service). Local governments continue to designate where development may and may not go. But state dollars will only support development in smart growth areas served by existing infrastructure.
- Georgia Governor Roy Barnes recently signed landmark legislation creating the Georgia Regional Transportation Authority to coordinate and oversee the Atlanta region's fight against traffic, pollution and sprawl. The Authority's 15-member board is charged with producing a comprehensive transportation strategy for the region by year's end. Alan Ehrenhalt, editor of *Governing* magazine, commented in *The New York Times*: "The law places Governor Barnes at the head of a sprawl-fighting superagency that can practically dictate land-use decisions all

over the metropolitan area. It can tell the state transportation department not to build a highway. It can tell a county not to allow a new shopping mall. It can build and operate a mass transit system in any of the jurisdictions surrounding Atlanta, then force those jurisdictions to pay for it by threatening to take away their state financing."

- In Pennsylvania, the final report of Governor Tom Ridge's 21st Century Environment Commission concluded that "the need to change our patterns of land use (is) the most immediate issue to address." The commission found that:

Growing communities are good, but our sprawling patterns of growth are not. It is important that Pennsylvanians acknowledge the difference and recognize that we are using land inefficiently and unsustainably....Sprawl harms the environment, increases the cost of infrastructure and exacerbates the abandonment of existing communities.

In response, Governor Ridge this year launched a five-year \$1,300-million Growing Greener Initiative, which redirects \$425 million to the new Environmental Stewardship Fund, adds \$44 million for open space protection, and restructures \$900 million to promote sound land use across the state.

- Utah Governor Mike Leavitt recently signed into law the Utah Quality Growth Act of 1999, which establishes a Quality Growth Commission to help lawmakers and localities with sound growth planning and management. It also creates a \$6 million fund to preserve agricultural land and open space.
- Gov. Don Sundquist and the Tennessee legislature approved a bill in May 1998, directing cities and counties to develop joint plans for urban growth and open space preservation. The plans will project growth for 20 years, with adjustments every three years.
- In January 1998, former Ohio Governor George V. Voinovich issued an executive order, titled Ohio Farmland Protection Policy, directing state agencies to take the protection of productive farmland into consideration when they make policy decisions affecting land acquisition and development.
- In her 1998 "state of the state" address, Governor Christine Todd Whitman emphasized the need for smart growth. "Every part of New Jersey suffers when we plan haphazardly," she said. "Sprawl eats up our open space. It creates traffic jams that boggle the mind and pollute the air. Sprawl can make one feel downright claustrophobic about our future."

# departments

## Bibliography

### BOOKS AND DOCUMENTS

**Beatley, Timothy, and Manning, Kristy**

*THE ECOLOGY OF PLACE: PLANNING FOR ENVIRONMENT, ECONOMY AND COMMUNITY*  
Island Press, 1997. 225p.

*BUILDING LIVABLE COMMUNITIES FOR THE 21ST CENTURY: A REPORT FROM THE CLINTON-GORE ADMINISTRATION*

President's Council on Sustainable Development,  
1999. 23p.

(*excerpts available on the Internet at*  
[http://www.smartgrowth.org/library/gore\\_pr11199.html](http://www.smartgrowth.org/library/gore_pr11199.html))

**Cervero, Robert**

*THE TRANSIT METROPOLIS: A GLOBAL INQUIRY*  
Island Press, 1998. 400p.

**Collaton, Elizabeth, and Bartsch, Charles**  
*BROWNFIELDS: CLEANING AND REUSING CONTAMINATED PROPERTIES*

Greenwood Publishing Group, 1997. 144p.

**Downs, Anthony**

*NEW VISIONS FOR METROPOLITAN AMERICA*  
Brookings Institution Press, 1994. 272p.

**Fox, Kenneth**

*METROPOLITAN AMERICA: URBAN LIFE AND URBAN POLICY IN THE UNITED STATES,*

*1940-1980*

University Press of Mississippi, 1986. 288p.

**Frug, Gerald E.**

*CITY MAKING: BUILDING COMMUNITIES WITHOUT BUILDING WALLS*

Princeton University Press, 1999. 256p.

**Garvin, Alexander**

*THE AMERICAN CITY: WHAT WORKS, WHAT DOESN'T*

McGraw-Hill, 1995. 477p.

**Geddes, Robert, editor, et al.**

*CITIES IN OUR FUTURE: ENVIRONMENTAL HEALTH AND SOCIAL EQUALITY*

Island Press, 1997. 200p.

**Gratz, Roberta B., and Mintz, Norman**

*CITIES BACK FROM THE EDGE: NEW LIFE FOR DOWNTOWN*

John Wiley & Sons, 1998. 361p.

*GREENING INDUSTRY: NEW ROLES FOR COMMUNITIES, MARKETS, AND GOVERNMENTS*

A World Bank Policy Research Report

World Bank, 1999. 150p.

(*available on the Internet at*

[http://worldbank.org/nipr/greening/full\\_text/index.htm](http://worldbank.org/nipr/greening/full_text/index.htm))

**Hart, Maureen**

*GUIDE TO SUSTAINABLE COMMUNITY INDICATORS*

Hart Environmental Data, 2nd ed., 1999. 202p.

**Inoguchi, Takashi, Newman, Edward, and Paoletto, Glen**

*CITIES AND THE ENVIRONMENT: NEW APPROACHES FOR ECO-SOCIETIES*

United Nations University Press, 1999. 337p.

**Lerner, Steve**

*ECO-PIONEERS: PRACTICAL VISIONARIES SOLVING TODAY'S ENVIRONMENTAL PROBLEMS*

MIT Press, 1997. 440p.

**Nivola, Pietro S.**

*LAWS OF THE LANDSCAPE: HOW POLICIES SHAPE CITIES IN EUROPE AND AMERICA*

Brookings Institution Press, 1999. 120p.

**Sierra Club**

*1999 SIERRA CLUB SPRAWL REPORT*

Sierra Club, 1999. 25p.

(available on the Internet at

<http://www.sierraclub.org/sprawl/report99/>)

**Tellus Institute**

*PUTTING THE BRAKES ON SPRAWL: INNOVATIVE TRANSPORTATION SOLUTIONS FROM THE U. S. AND EUROPE*

Tellus Institute, 1999. 37p.

*U. S. President's Council on Sustainable Development TOWARDS A SUSTAINABLE AMERICA: ADVANCING PROSPERITY, OPPORTUNITY, AND A HEALTHY ENVIRONMENT FOR THE 21ST CENTURY*

President's Council on Sustainable Development, 1999. 165p.

(available on the Internet at

<http://www.whitehouse.gov/PCSD/Publications/index.html>)

**Urban Land Institute**

*SMART GROWTH: ECONOMY, COMMUNITY, ENVIRONMENT*

Urban Land Institute, 1998. 56p.

**World Resources Institute**

*WORLD RESOURCES 1996-97: THE URBAN ENVIRONMENT*

World Resources Institute, 1996. 365p.

(available on the Internet at

<http://www.igc.org/wri/wr-96-97/96tocful.html>)

## ARTICLES

**Annez, Patricia**

*LIVABLE CITIES FOR THE 21ST CENTURY*

(Society, Vol. 35, No. 4, May/June 1998, pp. 45-50)

*COOPERATING FOR CHANGE: STEPS TO STRATEGIC ACTION*

(Governing, Vol. 10, No. 5, February 1997, pp. 35-42)

**Farrell, Alex, and Hart, Maureen**

*WHAT DOES SUSTAINABILITY REALLY MEAN?*

(Environment, Vol. 40, No. 9, November 1998, p. 4-9+)

**Katz, Bruce, and Bradley, Jennifer**

*URBAN AFFAIRS: DIVIDED WE SPRAWL*

(The Atlantic Monthly, Vol. 284, No. 6, December 1999, pp. 26, 28, 30, 38-42)

**Knopman, Debra S., Susman, Megan M., and Landy, Marc K.**

*CIVIC ENVIRONMENTALISM: TACKLING TOUGH LAND-USE PROBLEMS WITH INNOVATIVE GOVERNANCE*

(Environment, Vol. 41, No. 10, December 1999, pp. 24-32)

**Lyman, Francesca**

*TWELVE GATES TO THE CITY: A DOZEN WAYS TO BUILD STRONG, LIVABLE, AND SUSTAINABLE URBAN AREAS*

(Sierra, Vol. 82, No. 3, May/June 1997, pp. 28-35)

**Motavalli, Jim**

*CHATTANOOGA ON A ROLL: FROM AMERICA'S DIRTIEST CITY TO ONE OF ITS GREENEST*

(E Magazine, Vol. 9, No. 2, March/April 1998, pp. 14-16)

**O'Meara, Molly**

*EXPLORING A NEW VISION FOR CITIES*

(State of the World 1999, January 1999, pp. 133-150)

**O'Meara, Molly**

*HOW MID-SIZED CITIES CAN AVOID  
STRANGULATION*

(World Watch, Vol. 11, No. 5, September/October 1998,  
pp. 8-15)

**O'Toole, Randal**

*DENSE THINKERS*

(Reason, Vol. 30, No. 8, January 1999, pp. 44-52)

**Reese, April**

*BAD AIR DAYS*

(E Magazine, Vol. 10, No. 6, November/December  
1999, pp. 28-35)

**Schilling, Joseph**

*THE NEXT WAVE*

(The Environmental Forum, Vol. 16, No. 6,  
November/December 1999, pp. 30-41)

**Stoel, Thomas B., Jr.**

*REINING IN URBAN SPRAWL*

(Environment, Vol. 41, No. 4, May 1999,  
pp. 6-11, 29-33)

**Wolinsky, Julian**

*LIGHT RAIL: ONE ROUTE TO LIVABLE CITIES*

(Railway Age, Vol. 200, No. 7, July 1999, pp. 47+)

# Selected Internet Resources

**Center of Excellence for Sustainable Development; A Project of the U. S. Department of Energy**

<http://www.sustainable.doe.gov>

**Center on Urban and Metropolitan Policy at Brookings Institution**

<http://www.brook.edu/urban>

**Cities Environment Reports on the Internet (CEROI)**

<http://www.grida.no/city/>

**Clean Water Action Plan**

<http://cleanwater.gov/>

**Council on Environmental Quality**

<http://www.whitehouse.gov/CEQ/>

**Joint Center for Sustainable Communities; The U. S. Conference of Mayors and the National Association of Counties**

<http://www.usmayors.org/USCM/sustainable>

**The Mega-Cities Project**

<http://www.megacities.org/>

**New Ideas in Pollution Regulation (NIPR); The World Bank Group**

<http://www.worldbank.org/nipr/index.htm>

**President's Council on Sustainable Development**

<http://www.whitehouse.gov/PCSD/>

**Sierra Club**

<http://www.sierraclub.org/sprawl/>

**Sustainable Communities Network**

<http://www.sustainable.org/>

**Sustainable Urban Environments; U. S. Environmental Protection Agency**

<http://www.epa.gov/reg5oair/sue/index.html>

**Urban Land Institute**

<http://www.uli.org>

**The Virtual Library on Urban Environmental Management**

<http://www.soc.titech.ac.jp/uem/>

**World Resources Institute**

**World Resources 1996-97: The Urban Environment**

<http://www.igc.org/wri/wr-96-97/96tocful.html>

# global issues

March 2000 Volume 5, Number 1

## Green Cities



Urban Environmental Solutions