



A PUBLICATION
OF THE SUPERFUND/
BROWNFIELD
RESEARCH INSTITUTE

Brownfields Redevelopment

A Guidebook for
Local Governments
and Communities—
Second Edition





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ABOUT ICMA

The International City/County Management Association (ICMA) is the professional and educational association of more than 8,000 appointed executive administrators serving local governments. Members manage cities, counties, towns, townships, boroughs, regional councils, and other local governments in the United States and throughout the world with populations ranging from a few thousand to several million people.

Founded in 1914, ICMA pursues the mission of enhancing the quality of local government through professional management. Its members turn to ICMA for information, research, and technical assistance on many issues of special interest. ICMA's management assistance includes a wide range of publications, training programs, research, information, and training services.

ICMA's Research and Development Department seeks to enhance the quality of local government management through information sharing, technical assistance, research, and partnership building among concerned stakeholders. The Research and Development Department has been studying the role that local government can play in a variety of brownfield issues through a cooperative agreement with the U.S. Environmental Protection Agency, Cooperative Agreement No. CR-825713-01-0. Other ICMA publications made possible by this cooperative agreement include:

- *Beyond City Limits: Best Practices from ICMA's 1998 Brownfield Peer Exchanges*
- *Beyond Fences: Brownfields and the Challenges of Land Use Controls*
- *Building New Markets: Best Practices from ICMA's 1999 Brownfield Peer Exchanges*
- *Land Use Controls on BRAC Bases: A Special Report from ICMA's Base Reuse Consortium*
- *Putting the Pieces Together: Local Government Coordination of Brownfield Redevelopment*
- *Snapshots: A Preliminary Report on the 1998 Brownfields Showcase Communities*

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All information contained herein is based on the research and expertise of the ICMA Study and Research Teams unless otherwise noted.

ACRONYM LIST

A

AAC	Alaska Administrative Code
ABA	American Bar Association
ACE	Arlingtonians for a Clean Environment
ADEC	Alaska Department of Environmental Conservation
ADEM	Alabama Department of Environmental Management
ADEQ	Arizona Department of Environmental Quality
ADPCE	Arkansas Department of Pollution Control and Ecology
ADR	alternative dispute resolution
AHP	Affordable Housing Program
ANR	Agency of Natural Resources
ARRA	Alameda Reuse and Development Authority
ASTM	American Society for Testing and Materials
ATSDR	Agency for Toxic Substances and Disease Registry

B

B&I	Business and Industry
BAB	Brownfields Advisory Board
BCRLF	Brownfields Cleanup Revolving Loan Fund
BDC	business development corporation
BEA	baseline environmental assessment
BEDI	Brownfields Economic Development Initiative
BPRA	Brownfields Property Reuse Act
BRF	Brownfields Redevelopment Fund, Brownfield Revolving Fund
BSRA	Brownfields Site Rehabilitation Agreement
BTC	base transition coordinator
BVHP	Bayview-Hunter's Point

C

CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAP	Corrective Action Plan
CBA	collective brownfields area
CDBG	Community Development Block Grant
CDC	community development corporation
CDFI	Community Development Funding Initiatives
CDHPE	Colorado Department of Public Health and Environment
CEAM	conceptual exposure assessment model
CEQ	Commission of Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CGL	commercial general liability
CHDC	Cobourg Harbour Development Corporation
CICA	Community Investment Cash Advance
CIP	Community Investment Program
CMAA	Cambodia Mutual Assistance Association
CMAQ	Congestion Mitigation and Air Quality
CMP	Coastal Management Plan
COA	consent order and agreement
CP	certified professional
CPEO	Center for Public Environmental Oversight
CRCQL	Chester Residents Committed to Quality Living
CRS	Community Relations Service
CSO	Combined Sewer Overflow
CWA	Clean Water Act
CWT	Compensation Work Therapy
CZMA	Coastal Zone Management Act

D

DATCP	Department of Agriculture, Trade, and Consumer Protection
DBED	Department of Business and Economic Development
DBP	Dallas Brownfields Program
DCED	Department of Commerce and Economic Development
DEC	Department of Environmental Conservation
DED	Department of Economic Development
DEP	Department of Environmental Protection (Connecticut, Florida, Massachusetts, New Jersey, Pennsylvania, West Virginia)
DEM	Department of Environmental Management
DENR	Department of Environment and Natural Resources (North Carolina, South Dakota)
DEQ	Department of Environmental Quality, Division of Environmental Quality (Idaho, Montana, Oklahoma, Oregon, Virginia, Wyoming)
DES	Department of Environmental Services
DHD	Department of Housing Development
DHEC	Department of Health and Environmental Control
DNR	Department of Natural Resources (Iowa, Wisconsin)
DNREC	Department of Natural Resources and Environmental Control
DOC	U.S. Department of Commerce
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOH	Department of Health
DOI	U.S. Department of the Interior
DOJ	U.S. Department of Justice
DOL	U.S. Department of Labor
DOT	U.S. Department of Transportation
DPD	Department of Planning and Development

DSF	Division of Superfund
DTSC	Department of Toxic Substance Control
DWU	Dislocated Worker Unit
<u>E</u>	
E & O	errors and omissions
Ecology	Washington State Department of Ecology
EC	enterprise community
ECC	Earth Conservation Corps
ECOSS	Environmental Coalition of South Seattle
ED	U.S. Department of Education
EDC	economic development conveyance, Economic Development Corporation
EDI	Economic Development Initiative
EDWAA	Economic Dislocation and Worker Adjustment Assistance Act
EES	Environmental Extension Service
EIL	environmental impairment liability
EIP	eco-industrial park
EIS	Environmental Impact Statement
EJ	environmental justice
EJIF	Environmental Joint Insurance Fund
EOBD	Executive Office of Business Development
EOWS	Executive Office of Weed and Seed
EPA	U.S. Environmental Protection Agency
EPC	Environmental Planning Commission
EPCRA	Emergency Planning and Community Right-to-Know Act
EPD	Environmental Protection Division
ESA	Endangered Species Act
EZ	empowerment zone

F

FAMU	Florida A&M University
FDIC	Federal Deposit Insurance Corporation
FHFB	Federal Housing Finance Board
FHLBank	Federal Home Loan Bank
FHWA	Federal Highway Administration
FLH	federal lands highway
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FTZ	foreign trade zone
FUDS	formerly used defense sites
<u>G</u>	
GIS	geographic information systems
GSA	General Services Administration
GLNPO	Great Lakes National Program Office
GLWQA	Great Lakes Water Quality Agreement
GLIN	Great Lakes Information Network
<u>H</u>	
HAP	hazardous air pollutant
HASP	health and safety plan
HAZWOPER	Hazardous Waste Operations and Emergency Resonse
HCP	habitat conservation plan
HDOH	Hawaii Department of Health
HEBCAC	Historic East Baltimore Community Action Coalition
HHS	U.S. Department of Health and Human Services
HPF	Historic Preservation Fund
HRS	Hazard Ranking System
HSES	High School of Environmental Studies

HUD U.S. Department of Housing and Urban Development

I

IC institutional control

ICMA International City/County Management Association

ICP Independent Cleanup Pathway

IDB industrial development bond

IDEM Indiana Department of Environmental Management

IHSB Inactive Hazardous Sites Branch

Illinois EPA Illinois Environmental Protection Agency

IPA intergovernmental personnel assignment

IRAP Independent Remedial Action Program

ISTEA Intermodal Surface Transportation Efficiency Act

IWG interagency working group

J

JMU James Madison University

JTPA Job Training Partnership Act

K

KDHE Kansas Department of Health and Environment

L

LCBP Lake Champlain Basin Program

LCRA Land Clearance for Redevelopment Authority

LDEQ Louisiana Department of Environmental Quality

LDR Land Disposal Restriction

LEPC local emergency planning committee

LETS Leadership Environmental Training Series

LHD Lowell Health Department

LISS Long Island Sound Study

LNAPL light, nonaqueous phase liquid

LOC Letters of Credit

LRA local redevelopment authority

LRP Land Recycling Program (Pennsylvania, Wisconsin)

LUC land use control

LWMD Lake and Water Management Division

M

MACT maximum achievable control technology

MARAD U.S. Maritime Administration

MBVCRA Mississippi Brownfields Voluntary Cleanup and Redevelopment Act

MCLG maximum contaminant level goal

MDE Maryland Department of the Environment

MDEQ Michigan Department of Environmental Quality, Mississippi Department of Environmental Quality

MDNR Missouri Department of Natural Resources

MFS Marine Fisheries Service

MIC manufacturing industrial center

MOU Memorandum of Understanding

MPCA Minnesota Pollution Control Agency

MPO metropolitan planning organization

N

NA No Association

NAAQSs national ambient air quality standards

NADO National Association of Development Organizations

NCCP National Community Conservation Program

NCP National Contingency Plan

NDC Neighborhood Development Corporation

NDDOH North Dakota Department of Health

NDEP Nevada Department of Environmental Protection

NDEQ	Nebraska Department of Environmental Quality
NEJAC	National Environmental Justice Advisory Council
NEP	National Estuary Program
NEPA	National Environmental Policy Act
NFA	No Further Action
NIR	Notification of Intent to Remediate
NJIT	New Jersey Institute of Technology
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NFR	No Further Remediation
NGO	nongovernmental organization
NIEHS	National Institute for Environmental Health Sciences
NJDEP	New Jersey Department of Environmental Protection
NMED	New Mexico Environment Department
NMREC	National Maritime Resource and Education Center
NOAA	National Oceanic and Atmospheric Association
NOFA	notice of funding availability
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NRDC	National Research Defense Council
NREPC	Natural Resources and Environmental Protection Cabinet
NRPE	National Religious Partnership for the Environment
NSPSs	New Source Performance Standards
NYDOS	New York Department of State
NYDEC	New York Department of Environmental Conservation

O

OCC	Office of Comptroller of the Currency
ODEQ	Oregon Department of Environmental Quality
ODOD	Ohio Department of Development
ODR	Office of Dispute Resolution
OECA	Office of Enforcement and Compliance Assurance
OECDD	Oregon Economic and Community Development Department
OECI	Office of Economic Conversion Information
Ohio EPA	Ohio Environmental Protection Agency
OIRM	Office of Information Resources Management
OJP	Office of Justice Programs
OPA	Oil Pollution Act
OSD	Off-site Source Determination
OSHA	Occupational Safety and Health Act
OTS	Office of Thrift Supervision
OTTED	Office of Tourism, Trade, and Economic Development
OWDA	Ohio Water Development Authority

P

PADEP	Pennsylvania Department of Environmental Protection
PAT	planning action team
PBS	Public Building Service
PCB	polychlorinated biphenyl
PCPC	Philadelphia City Planning Commission
PIDC	Philadelphia Industrial Development Corporation
PMN	premanufacture notice
POTWs	publicly owned treatment works
PPA	prospective purchaser agreement
PRB	permeable reactive barrier

PRP potentially responsible party
 PSA public service announcement

R

RAB Restoration Advisory Board
 R & HA Rivers and Harbors Act
 RAW remedial action work plan
 RBCA risk-based corrective action
 RBSL risk-based screening level
 RCPP Redevelopment of Contaminated Properties Program
 RCRA Reserve Conservation and Recovery Act
 RDA Redevelopment Authority
 RDO regional development organization
 RFP request for proposal
 RGI Regional Geographic Initiative
 RLF revolving loan fund
 RI/FS remedial investigation/feasibility study
 RRIF Rail Rehabilitation and Improvement Financing
 RTAP Rural Transit Assistance Program
 RTCA Rivers, Trails, and Conservation Assistance
 RUL Rural Utilities Loan

S

SARA Superfund Amendments and Reauthorization Act
 SBA Small Business Administration
 SBDC Small Business Development Center
 SCA Student Conservation Association
 SDWA Safe Drinking Water Act

SEC State Environmental Commission
 SERC state emergency response commission
 SIC Standard industry classification
 SHPO state historical preservation officer
 SFRPC South Florida Regional Planning Council
 SMOA Superfund Memorandum of Agreement
 SPCC Spill Prevention, Control, and Countermeasure
 SPWF Special Public Works Fund
 SRF state revolving loan fund
 SSSL site-specific target level
 SVE soil vapor extraction
 SVOC semi-volatile organic compound

T

TAA Technical Assistance Approval, Trade Adjustment Assistance
 TANF Temporary Assistance for Needy Families
 TCSP Transportation and Community System Preservation
 TDEC Tennessee Department of Environment and Conservation
 TEA-21 Transportation Equity Act for the 21st Century

TIF tax increment financing
 TIP Transportation Improvement Program
 TNRCC Texas Natural Resource Conservation Commission
 TPL Trust for Public Land
 TRRP Texas Risk Reduction Pattern
 TSCA Toxic Substances Control Act

U

UST underground storage tank
 USACE U.S. Army Corps of Engineers
 USDA U.S. Department of Agriculture
 USFWS U.S. Fish and Wildlife Service
 UGB urban growth boundary
 UMASS University of Massachusetts
 USF University of Southern Florida
 USX U.S. Steel
 UIC Underground Injection Control
 UDEQ Utah Department of Environmental Quality

V

VA U.S. Department of Veteran Affairs
 VAP Voluntary Action Program
 VCP voluntary cleanup program
 VCRP Voluntary Cleanup and Redevelopment Program
 VIC Voluntary Investigation and Cleanup
 VEMUR voluntary environmental mitigation use restriction
 VOAP Voluntary Oversight and Assistance Program

VOC volatile organic compound
 VRA voluntary remedial action
 VRP Voluntary Remediation Program
 VRRRA Voluntary Remediation and Redevelopment Act

W

WARN Worker Adjustment and Retraining Notification
 WIA Workforce Investment Act
 WPCLF Water Pollution Control Loan Fund
 WRT Waterfront Regeneration Trust

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CHAPTER 1
INTRODUCTION



1.1

Overview Of The New Edition

When *Brownfields Redevelopment: A Guidebook for Local Governments and Communities* was published in 1997, it was the first comprehensive brownfields guidebook written specifically for local government officials and community leaders. In the brief time since then, the emerging field of brownfields redevelopment has grown exponentially with many changes and transformations.

In 1997, the U.S. Environmental Protection Agency (EPA) had recently expanded its Brownfields Initiative with the Brownfields National Partnership Action Agenda, which created an unprecedented partnership among fifteen federal agencies. EPA's tally of Brownfields Redevelopment Pilot grants had reached 113, and the term "brownfields" was becoming fashionable at all levels of government.

To date, EPA has designated and launched 362 Brownfields Assessment Demonstration Pilots accompanied by grants that exceed \$69 million; the latest round of pilots included fifty-four communities announced in April 2000. In addition, thirty-seven EPA Brownfields Job Training and Development Demonstration Pilots are underway and ten additional communities were announced in December 2000. In addition, EPA has awarded 104 Brownfields Cleanup Revolving Loans to numerous Brownfields Assessment Demonstration Pilot and Brownfields Showcase Communities. Finally, in addition to the initial sixteen Brownfields Showcase Communities, twelve additional communities entered the initiative in October 2000.

Brownfields are a valuable community resource that through redevelopment and reuse could easily bring important benefits to many economically depressed communities.

Supplementing the Action Agenda, the new Brownfields Economic Development Initiative from the U.S. Department of Housing and Urban Development has helped various levels of government recognize the cross-cutting issues (e.g., clean air, workforce development) that are part of a successful brownfields redevelopment program. In the legislative arena Congress is now considering passing separate brownfields legislation, as comprehensive Superfund reauthorization remains elusive. Locally, almost every state has a brownfields or voluntary cleanup program (VCP)—contractual agreements whereby property owners and future developers are exonerated from liability concerns by voluntarily funding cleanup expenses—and many local governments are incorporating brownfields redevelopment into long-term land-use plans.

Since 1996, the International City/County Management Association (ICMA) has worked with EPA under a cooperative agreement to research

and report on the best practices of managing a brownfields program at the local level, as well as on innovative ways to restore sites to a state of productive use. As the association for professional local government management, ICMA is well positioned to research methods of brownfields management or, more accurately, brownfields coordination at the local level.

With the increasing awareness of brownfields issues at all levels of government, ICMA has been compiling its research for the past three years into this second edition of its brownfields guidebook, *Brownfields Redevelopment 2000: A Guidebook for Local Governments and Communities*. As brownfields redevelopment practices evolve, ICMA's research will keep pace with the challenges related to management and coordination of successful brownfields programs at all community levels.

This chapter answers basic questions concerning brownfields, land use, and redevelopment tools and strategies available to local governments. In addition, it summarizes information that has surfaced since the release of the first edition of the brownfields guidebook and maps out the rest of the resources available in this reference guide. This chapter is organized as follows:

- 1.2 An Introduction to Brownfields and Land Use
- 1.3 What's New with Brownfields?
- 1.4 How to Use this Reference Guide
- 1.5 Answers to Commonly Asked Brownfields Questions

1.2

An Introduction to Brownfields and Land Use

What are brownfields?

Brownfields are rural or urban industrial and commercial sites that are abandoned or underused because of real or perceived contamination. Communities across the country face the challenge of

putting these idle sites back to work, from old industrial cities with thousands of acres of abandoned factories to rural villages built around derelict mines or timber mills. Brownfields are a valuable community resource that through redevelopment and reuse could easily bring important benefits to many economically depressed communities.

What are the benefits and costs for brownfields redevelopment?

Improved Quality of Life

One benefit of reusing brownfields sites is the positive effect that redevelopment projects have on the people and communities who once depended on those sites for their livelihoods. Many of the neighborhoods surrounding brownfields were traditionally stable, working-class areas that have deteriorated since the departure of local, anchor industries. Some of the nation's highest concentrations of poverty, crime, and other social problems are located in areas close to brownfields. Responsible assessment, cleanup, and redevelopment can help remove blight from those neighborhoods and generate jobs and income. Many municipalities are using brownfields projects and programs as a catalyst to revive their older communities and neighborhoods.

Elimination of Contamination

Another benefit of brownfields reuse is the immediate improvement to the local environment brought about by removing or containing the contamination. Cleaning the property can provide long-term public health benefits to residents who live in the vicinity of the brownfields site. Communities must not forget the importance of protecting public health and their local environments when they start to redevelop brownfields.

Preservation of Greenspace

Developing abandoned land also can divert growth away from undeveloped "greenfields" sites in suburban and rural areas by stimulating infill into revitalized downtowns. This diversion can protect farmland and open space, reduce the need for construction of new infrastructure, and prevent unnecessarily long commuting times for workers. Many ways exist to address sprawl and its associ-

ated environmental effects, but putting brownfields back to work is one of the most crucial.

Increased Local Tax Revenues

In addition to these broader positive effects, reusing brownfields can directly benefit the finances of local governments. When they were active, industrial sites served as crucial sources of local government revenues, whether directly through property and other taxes paid by owners or indirectly through property, sales, and other taxes paid by workers and residents. Idle brownfields sites, in contrast, are fiscal dead weight. Redeveloping abandoned sites can increase local tax revenues by raising the value of the properties being developed, by bringing in viable owners for tax-delinquent or government-owned sites, by generating sales taxes through commercial development, by employing taxpaying citizens, and by creating public amenities like parks or recreation centers that increase the value of surrounding properties. For heavily developed areas, redevelopment of previously used sites may represent one of the few available alternatives to boost revenues.

Despite the potential benefits of brownfields development, it has long been difficult for communities to put contaminated sites back to use. The costs of remediation have made otherwise attractive development projects economically infeasible. Uncertainty about the presence of contamination at many sites has meant that suspicion of contamination can, by itself, obstruct development. A far-reaching and sometimes unpredictable environmental liability system under the federal Superfund law has deterred lenders and developers from becoming involved at sites with even a hint of contamination.

A series of recent trends, however, has made it much easier to overcome those barriers and put sites back to work. One of those trends involves actions by governments at all levels designed to encourage the cleanup and reuse of contaminated or potentially contaminated sites. Those actions resulted from a growing understanding of the importance of brownfields and a realization that traditional policies were not doing a good enough job to bring brownfields back into use.

Many local governments, recognizing how crucial brownfields were to their future, took action themselves to promote redevelopment and urged other levels of government to take complementary steps. Most states have changed their hazardous-waste laws and regulations to make it easier for parties voluntarily to clean up and reuse brownfields sites. EPA took a leadership role in promoting reuse through measures such as clarifying liability and providing a number of brownfields assessment and job training grants to local, state, and tribal governments.

At the same time that governments were taking these actions, other trends further increased the feasibility of reuse. Developers, lenders, insurers, and other private sector parties were gaining experience with the cleanup and development of contaminated sites and were becoming more confident that brownfields projects could generate profits without entailing excessive risk. Rapid advances in assessment and remediation technology were making cleanup less costly, more predictable, and protective of public health. A strong economy and a tightening market for industrial land made development of sites that had previously been considered marginal more attractive.

Such trends have made brownfields reuse far more workable and have led to successful development projects at many contaminated sites. They have not, however, made reuse easy. A community trying to promote the development of brownfields sites will still face all the difficulties that accompany any development project, combined with an added layer of challenges related to contamination. This guidebook is designed to provide local governments and communities with information that will help them overcome those challenges and put brownfields back to work.

Brownfields Sites versus Superfund Sites
Often, communities confuse brownfields sites with EPA's Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, commonly referred to as Superfund for the fund it authorized to clean up abandoned hazardous waste sites) sites. Because the brownfields program is covered under the Superfund law, it is easy to see why there can be

some confusion. Generally, Superfund sites are large, heavily contaminated sites that are undergoing federal action for cleanup. Brownfields sites are smaller parcels of land with smaller amounts of contamination that are redeveloped by parties seeking for economic benefit. The definition of brownfields sites is unspecific; anything from an old factory to an empty lot could be considered brownfields. The only site that cannot be called a brownfields (or at least that cannot receive federal funding for its redevelopment) is one that is listed on the National Priorities List (NPL)—that is, a Superfund site.

Superfund Sites

Contaminated sites referred to as Superfund sites have achieved a ranking of 28.5 or higher on the Hazard Ranking System (HRS). Sites meeting this requirement can be listed on the NPL and are considered the country's most contaminated sites. Once listed on the NPL, a Superfund site goes through a lengthy, federally driven process, and it often takes years simply to begin cleanup.

While the HRS could serve as a defining element in identifying the difference between Superfund and brownfields sites, its usefulness falls short at two points. First, the break point of 28.5 was arbitrarily selected to meet requirements dictated by Congress when the Superfund law was enacted in 1980. In the law's initial enactment, Congress required EPA to list at least 400 sites on the NPL and to update the list as appropriate. A score of 28.5 on the HRS allowed EPA to satisfy that requirement. Thus, the number 28.5 is not a realistic indicator for estimating the levels of risk posed by a site. Sites attaining a 28.5 or higher are not always listed on the NPL. Today, sites attaining a score of 28.5 or higher are still waiting to be put on the NPL and are referred to as "NPL-caliber" sites. This stigma can be detrimental to the redevelopment potential of a contaminated site because of the stringent, yet indiscriminate, nature of Superfund statutes. Because they seek to steer clear of any possibility of incurring financial liabilities for cleanup costs, investors and developers often disregard contaminated sites associated with the NPL or Superfund.

Second, many potentially responsible parties (PRPs) and states have begun to look toward state

VCPs in an attempt to avoid listing on the NPL, CERCLA's unforgiving liability standards, and the Superfund stigma. Essentially, a PRP who applies to participate in a state VCP avoids the possibility of the site in question being ranked by the HRS and being listed as a Superfund site. Thus, some hazardous waste sites that are contaminated enough to be listed on the NPL, have been purposefully left off this list to undergo brownfields redevelopment. When funding measures are considered, the lines between Superfund and brownfields sites become even more complicated.

EPA cannot spend any of its funds to encourage the cleanup and redevelopment of sites on the NPL without going through the lengthy Superfund process. Therefore, Superfund sites are not eligible for EPA brownfields funds. Confusing the issue, however, is that many communities refer to Superfund site redevelopment as "brownfields redevelopment," using the term to mean redevelopment in general of any hazardous waste site. In addition, Superfund sites that have been cleaned up and deleted from the NPL could easily be considered for brownfields redevelopment because of the perceived threat of residual contamination. Brownfields sites may certainly pose an "imminent and substantial danger to the public health or welfare,"¹ which requires such sites to be listed on the NPL.

Together with inconsistencies in definition, an underlying difference in the scope and purpose of the two programs still exists. Historically, the goal of the Superfund program has been to clean up, not redevelop, hazardous sites,² while the motivating factor in brownfields cleanup is redevelopment and economic revitalization. The brownfields program is primarily a state and local government program of redeveloping sites to revitalize the community and to put property back on the tax rolls. The Superfund program's purpose is to maintain public health by cleaning up the most hazardous of sites in the nation. Reuse of Superfund sites is certainly an added bonus, but it has not been the purpose of the program. Table 1.1 summarizes these differences.

Some of the confusion between the two types of sites has come from the evolution of the two programs. Most notable is that CERCLA was initially established as a federal law, whereas brownfields cleanups and redevelopment have been authorized and implemented by states, normally in coordination with a state's VCP. This evolution has created brownfields programs that differ widely from state to state. For example, although the ultimate goal of most brownfields programs is redevelopment of blighted urban properties for purposes of economic revitalization, exactly what sites are eligible for brownfields

Table 1.1: Differences Between Brownfield Sites and Superfund Sites

Program Characteristics	Brownfield Sites	Superfund Sites
Size	Generally smaller parcels.	Generally much larger parcels (perhaps hundreds of acres).
Level of Contamination	Generally less contaminated than Superfund sites.	The country's most contaminated sites.
National Priorities List	May not be listed on the NPL to receive federal brownfields funding.	Listed on the NPL (the nation's worst hazardous waste sites).
Focus of Program	Generally focuses on cleanup and redevelopment.	Historically focuses on cleanup.
Level of Government Supervision	Generally the local government leads the effort.	Federal and state governments lead the cleanup effort.
Cleanup Standards	Based largely on state VCP standards.	Governed by federal standards for cleanup.
Cleanup Funding	EPA cannot fund the cleanup but can fund assessment, community outreach, and education programs.	Often, EPA (or PRPs) funds the cleanup.

programs differs from state to state. Furthermore, not every state has a brownfields or voluntary cleanup program.

Why Local Governments?

The brownfields program is one of the few EPA programs in which the federal government provides funds directly to local governments. The reasoning behind this funding method is clear: because redevelopment and land use are the domain of local governments, the local level is the focal point for brownfields redevelopment.

Land-use planning is one of the basic functions of local government. A brownfields redevelopment project may require local government to develop:

- Transportation planning;
- Adjusted comprehensive land-use plans;
- Zoning ordinances;
- Sewer, water, and storm drainage facilities;
- Refuse collection and disposal;
- Environmental strategies;
- Plans to use data from geographic information systems;
- Business development districts; and
- Special service areas to raise funding.

All of those activities fall under the domain of local land-use planning. Local governments must play a role, if not the lead role, in any brownfields redevelopment.

Coordination is, at heart, a management tool.

Furthermore, local governments should be involved in the brownfields redevelopment process because of the coordination issues involved. Most often, a brownfields redevelopment requires the expertise of multiple disciplines, such as environmental science, economic development, infrastructure engineering, civic planning, financing, and community development. In most jurisdictions, practitioners of each of those disciplines are housed in separate departments, making coordination a challenge to brownfields program managers. Many

successful brownfields redevelopment projects are the result of effective interoffice coordination within a local government.

Coordination is, at heart, a management tool. In *Putting the Pieces Together: Local Government Coordination of Brownfields Redevelopment*, ICMA identified coordination as a key to successful brownfields redevelopment programs and projects. Local governments must coordinate the various interests involved in a brownfields redevelopment both internally and externally. Internally, local governments have to coordinate the redevelopment effort among various departments. Externally, local governments must coordinate brownfields projects with state VCPs, federal support programs, private businesses, and the community. In addition, some brownfields projects cross city and county boundaries, which requires regional or intergovernmental coordination. Local coordination involves managing a wide range of concerns, from environmental cleanup to economic development. Local governments are in the opportunistic position to bridge the gap between environmental cleanup and economic reuse.

Building a Case for Brownfields Redevelopment

Although a few communities may still consider brownfields liabilities instead of assets, a growing number of local government managers, elected officials, and community leaders now recognize that brownfields programs can serve as catalysts for designing new redevelopment plans and initiatives. One should consider the following reasons in building a case for brownfields cleanup and reuse in a community:

- Brownfields projects are consistent with the following traditional community redevelopment purposes (reclaiming abandoned or underused land and restoring it to productive use, increasing the property tax base, and contributing to the local economy (i.e., by creating additional sales tax revenues, jobs, new businesses, etc.);

- Brownfields projects protect public health and improve the environment by cleaning up contaminated properties;
- Reuse plans with innovative designs can help reestablish a sense of community and place in older neighborhoods;
- Participation in a collaborative, consensus-building process as part of a brownfields initiative can improve community governance and create stronger connections between local government and its citizens;
- Brownfields projects can have a positive effect on a region's growth patterns by encouraging the redevelopment of abandoned properties within the urban core and by discouraging new development of pristine land in the outlying suburbs and exurbs; and
- Timing is ideal for brownfields redevelopment given the momentum created by various public and private initiatives (EPA Brownfields Pilot grants and the Brownfields National Partnership Action Agenda provide the necessary federal funds and will help coordinate federal brownfields efforts; state voluntary cleanup laws provide different combinations of incentives and protections for prospective developers; and new public-private partnerships to redevelop brownfields have involved a wide array of stakeholders: community groups, environmental organizations, businesses, developers, local financial institutions, and environmental justice advocates).

Given the convergence of these factors, a strong consensus exists in many communities throughout the nation that redeveloping brownfields is the right thing to do. The benefits far outweigh the costs. Brownfields are too valuable a redevelopment resource to leave idle.

1.3

What's New with Brownfields?

Over the past few years, the brownfields program has been evolving. Many communities have

moved well past the stage of creating a brownfields program and are now focusing on the new challenges such programs face today.

New Brownfields Issues

Rural Brownfields

Smaller communities in rural areas face many of the same issues as urban brownfields programs. Redeveloping rural brownfields not only helps preserve farmland, but it also has a greater economic impact on smaller communities because of the smaller proportional size of their brownfields problems. Consequently, a movement exists to educate smaller, rural communities on the benefits of brownfields redevelopment.

For more information see section 5.8: Rural Brownfields.

Cross-Cutting Issues

Many communities are linking brownfields redevelopment with related issues not usually associated with environmental projects. Issues such as job training, education, housing, transportation, and planning are all being tied to brownfields programs.

For more information see section 3.6: Public Education; sections 5.3 and 5.4: Transportation Redevelopment and Housing Redevelopment.

Regional Approaches and Coordination

Some local governments are partnering with nearby communities to address multijurisdictional brownfields. These clusters of local governments face the difficult challenge of coordinating among various counties and different levels of various governments.

For more information see section 7.4: Regional Approaches and City and County Partnerships.

Alternative Development Options

While early brownfields successes turned brownfields located on valuable property into huge economic gains for the community, many of the brownfields sites still left undeveloped are less economically viable. Communities are now considering alternative development options (e.g., greenways, recreational uses) for these difficult-to-develop sites.

For more information see sections 5.5, 5.6, and 5.7: Greenspace Development, Recreational Redevelopment, and Historic Preservation and Brownfields.

TEA-21 and Brownfields

The 1998 passage of the Transportation Equity Act for the 21st Century (TEA-21) provided interesting funding for many transportation-related brownfields projects. TEA-21 is helping many communities link their transportation and brownfields programs in a way that benefits both. *For more information see section 5.3: Transportation Redevelopment.*

Brownfields Cleanup Revolving Loan Funds (BCRLF) Program

Many communities are using revolving loan funds for brownfields projects. While EPA's new BCRLF program has not met the success of its sibling programs, some local governments are using it to start successful brownfields programs. *For more information see section 6.2: Public Financing.*

Brownfields Showcase Communities

Since March 1998, EPA has used the Showcase Communities to highlight cooperation efforts among different stakeholders. Showcase Communities have become national models for demonstrating the positive results of public and private collaboration in addressing brownfields issues. *For more information see section 7.7: The Showcase Communities.*

Environmental Insurance

Environmental insurance costs have significantly dropped in the past two years, making more brownfields projects (especially smaller projects) more viable.

For more information see section 6.4: Banking Policies and Regulations.

The greatest change in the brownfields arena is the way communities address brownfields in the context of larger issues. Unless brownfields are addressed as a part of larger community issues, redeveloped sites may eventually become abandoned and become brownfields again.

Communities with multiple brownfields sites often face additional problems, such as unemployment, substandard housing, outdated public infrastructure, crime, or an unskilled local workforce. Too often, programs in place to address those issues operate in isolation. By coordinating programs and resources, a brownfields redevelopment project can grow to address issues at a site in addition to the redevelopment itself.

Tying together a variety of disciplines to form one comprehensive program is the future of brownfields redevelopment.

Many local governments are establishing interdepartmental working groups to leverage a diverse range of public and private technical expertise for brownfields redevelopment. Environmental assessment and cleanup activities might be linked with workforce and job-development programs through the creation of permanent jobs after the redevelopment. Economic development at the site can be coordinated with transportation departments to ensure transportation access for new workers in the redeveloped areas. Reuse options might include the development of urban agriculture and green spaces, which would require the expertise of the planning department. Tying together a variety of disciplines to form one comprehensive program is the future of brownfields redevelopment. The successful brownfields program will have coordination both internally among departments and externally among stakeholders and different levels of government.

1.4

How to Use this Reference Guide

The list of frequently asked questions in section 1.5 can be used to find information quickly on common brownfields issues. Questions are

organized into several categories, and each question is accompanied by a short, general answer along with a cross-reference to sections of the guidebook.

Chapters 2 through 6 of this guidebook provide detailed explanations of the major issues that local governments and communities will confront in reusing brownfields, from partnerships to public financing to community involvement. Chapter 7 highlights some of the best practices for brownfields redevelopment and provides detailed information on EPA's Brownfields Showcase Communities, while Chapter 8 examines the future of the brownfields program. Finally, series of appendices contain various resources that will be helpful in planning a brownfields program, including new legislation, new technologies, and a list of federal and regional programs and contacts.

1.5

Answers to Commonly Asked Brownfields Questions

The following section provides the answers to various questions about brownfields redevelopment, as well as sections within the guidebook that provide further discussion of such topics.

Brownfields Basics

What is a brownfields site?

Generally, brownfields sites are defined as abandoned, idled, or underused industrial or commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. Some federal, state, and local programs use slightly different definitions.

For more information see section 1.2: An Introduction to Brownfields and Land Use.

What are the benefits and costs for brownfields redevelopment?

Benefits such as positive effect on the community, improvement to local environment, preserved greenfields, and economic gains often outweigh

the costs of uncertain contamination and strict liability schemes.

For more information see section 1.2: An Introduction to Brownfields and Land Use.

What are the differences between brownfields sites and Superfund sites?

Generally, Superfund sites are large, heavily contaminated sites that are undergoing federal action for cleanup. Brownfields sites are smaller parcels of land with smaller amounts of contamination that are redeveloped by parties for economic benefit.

For more information see section 1.2: An Introduction to Brownfields and Land Use.

What roles can local governments play in brownfields redevelopment?

Local governments are the closest authoritative link to community stakeholders and brownfields sites. Thus, they have the greatest knowledge of physical sites as well as of the historical and other cultural links between sites and the surrounding community. More important, local governments represent the vested interests of the entire community and must interpret and synthesize diverse opinions into a comprehensive redevelopment strategy. Finally, local governments have knowledge about protocols necessary to engage related state and federal programs and policies.

For more information see Appendix VII: Brownfields Internet Resources

Partnerships

What are common barriers to governmental partnerships?

On an intragovernmental basis, various levels of government lack specific departments qualified to address the complex issues of site contamination, community collaboration, and environmental justice that are synonymous with brownfields development. Revising existing management programs and creating appropriate agencies and programs to synthesize brownfields redevelopment initiatives might resolve the problem. On an intergovernmental basis, overlapping jurisdictions, traditional departmental mandates, and private interests all hinder coordination among

governmental agencies. To bridge these gaps, agencies must acknowledge the immediate and long-term benefits of revitalization projects and develop comprehensive strategies to facilitate compromises and collaboration among various federal, state, and local authorities.

For more information see section 2.4: Partnerships and Planning.

What role can state and federal governments play in brownfields redevelopment?

State and federal governments often have greater financial and technical resources, as well as more advanced programs geared toward brownfields redevelopment, than do local governments. Not only are they able to provide grants, loans, technical assistance, liability assurance, and oversight intervention, but also they may provide an umbrella under which local governments can function, as well as frameworks to serve as models for emerging local departments and programs.

For more information see section 2.3: Stakeholder Roles.

What role can the private sector play in brownfields redevelopment?

Most commonly, private sector developers and lending institutions must be involved in brownfields redevelopment to fill in the gaps among government funding and technical assistance programs. Yet, many private organizations fear financial and liability burdens surrounding remediation of contaminated sites. To assuage those fears, programs including tax and building code revisions, liability assurances, and voluntary cleanup agreements are available or under development in most states.

For more information see section 2.3: Stakeholder Roles.

How have local governments used public-private partnerships in brownfields redevelopment?

Though public-private partnerships can be difficult to forge and manage, a private partner can bring new resources and strategies that a local government does not have. Provo, Utah's experience in working with U.S. Steel exemplifies both the types of obstacles a local government may face and ways to overcome such obstacles.

For more information see section 7.5: Public-Private Partnerships.

What are some ways that different local government agencies coordinate their efforts when they each have a role in a brownfields redevelopment project?

Different local governments have different structures, and in brownfields redevelopment, many local governments may be involved in some aspect of one brownfields project. Though the organizational structure and the number of agencies involved in brownfields may vary among local governments, Philadelphia's model demonstrates some strategies that could work, or be modified to work, for other cities and communities.

For more information see section 7.3: Local Government Intracoordination.

Community Issues

How can an entire community be educated on brownfield redevelopment issues?

The best forms of community outreach are education and direct contact. Education on brownfields redevelopment issues may be accomplished through pamphlets, workshops, and site visits. Contact may be established by convening town meetings and seminars, as well as by door-to-door efforts in neighborhoods especially close to brownfields sites. Most important, staff members must be properly trained to deal with diverse members of a community and to reach citizens through appropriate channels and language.

For more information see section 2.7: Partnerships and Community Involvement, Outreach, and Education; section 3.6: Public Education.

What role can a community play in brownfields redevelopment?

The term "community" can refer to numerous facets of brownfields redevelopment. For example, a community may refer to an ethnic, racial, or cultural neighborhood, to an alliance of business owners, or to the general public. To address brownfields redevelopment effectively, however, one must view the community as all stakeholders—regardless of perceived or actual membership—affected by local brownfields and subse-

quent redevelopment projects. Therefore, all redevelopment strategies must acknowledge stakeholder interests, with the understanding that community members will voice opinions when called upon.

For more information see section 2.3: Stakeholder Roles.

Why should decision makers promote and ensure community involvement in the brownfields redevelopment process?

Decision makers should consider community needs and feelings while planning for redevelopment because community members have to live with the final product of redevelopment. Involving community members will help ensure that the final product benefits the community.

For more information see section 3.2: Local Government Strategies.

What tools are available for resolving disputes between stakeholders in the brownfields redevelopment process?

One useful tool for resolving disputes between stakeholders in the brownfields process is alternative dispute resolution (ADR), a process that involves the facilitated and mediated negotiations as alternatives to litigation or conventional negotiation.

For more information see section 3.3: Alternative Dispute Resolution.

Why should decision makers consider environmental justice when planning a brownfields redevelopment?

Decision makers should consider environmental justice issues because many brownfields are located in communities and areas that are predominantly made up of minority, low-income populations, or both. Identifying environmental justice factors early in the decision-making process helps ensure that redevelopment benefits the community.

For more information see section 3.5: Environmental Justice.

What role can local government officials play in communication about risk?

Local government officials can act as facilitators or communicators between risk assessors and the public. The role of communicator will help local officials fulfill their duties to protect public health and to improve the community's quality of life.

The local official acts as facilitator by exchanging information among risk assessors, risk managers, and the public. Local officials can also ensure that the concerns of the entire community are heard and that members of disadvantaged communities are not left out of the process.

For more information see section 3.4: Risk Communication.

What are the benefits of risk communication?

The benefits of risk communication include (1) informing the public of risks so that it can make an informed decision about matters that may impact its health and safety; (2) establishing credibility among citizens, local government, and industry; (3) making technical data and policy information accessible to the public; and (4) providing the media with accurate information so that they can disseminate it to the public.

For more information see section 3.4: Risk Communication.

Why is public education essential to brownfields redevelopment?

Public education is essential because little information is available to individuals and communities concerning brownfields and redevelopment techniques. Public education can provide information to communities on how to clean up a site and how to prevent future contamination of redeveloped sites.

For more information see section 3.6: Public Education.

Is funding available for public education programs?

Yes, EPA and many other federal agencies and nonprofit organizations provide funding for these types of programs.

For more information see section 3.6: Public Education.

Why is job training an important part of the brownfields redevelopment process?

Many brownfields sites are located in low-income and minority communities where unemployment rates are high. Job-training programs can help remedy high unemployment rates by teaching participating community members the skills and knowledge needed to work in the environmental field, including skills specific to cleaning up the brownfields in their community.

For more information see section 3.6: Public Education.

What kind of funding is available for job-training programs?

Several federal agencies offer funding for job training at brownfields cleanups. Some of those agencies include EPA, the U.S. Department of Justice, the U.S. Department of Transportation, the U.S. Department of Veterans Affairs, and the U.S. Department of Labor.

For more information see section 3.6: Public Education.

Cleanup and Land Use

What determines if contamination presents a threat to a community?

The process of risk assessment evaluates the potential threats to human health and the environment caused by contamination.

For more information see section 4.2: Risk Assessment.

How can considerations of risk affect environmental cleanup at brownfields?

If specific information is available about what level of cleanup is needed to protect health and the environment, remediation measures can be designed that are more cost effective than they would otherwise be. Many states' hazardous waste laws permit cleanup standards based on risk.

For more information see section 4.2: Risk Assessment.

How is the future use of a site determined?

Land use assumptions are developed based on state regulations, local land-use plans, community priorities, environmental limitations, and various

of other readily available documentation and literature. These assumptions are then compared and evaluated.

For more information see section 4.3: Land Use in Remedy Selection.

Is there a guarantee that a site cleaned up to industrial standards will not become a playground someday in the future?

There is no 100 percent guarantee, but correctly applied institutional controls provide a legal safeguard against changing land uses on risk-based cleanup sites.

For more information see section 4.4: Institutional Controls.

What measures can be used to control future land use at sites where risk-based cleanup standards are used?

Controls of future land use, or institutional controls, generally fall into two categories: (1) government controls, such as a variety of zoning tools, and (2) private controls, such as covenants or easements.

For more information see section 4.4: Institutional Controls.

How can local governments ensure stable long-term management of brownfields sites?

Effective long-term management of brownfields facilities is based on several factors that can be addressed before groundbreaking. First, management plans must be comprehensive to address present, and to anticipate future, concerns and bumps in the road. In addition, plans must be firm enough to establish credibility but flexible enough to accommodate issues of staff and political turnover. Plans must also be based on realistic goals that were contrived with the input of as many community stakeholders as possible. Finally, local governments must work carefully to manage stakeholder expectations to ensure sustained support for redevelopment initiatives.

For more information see section 8.2: Community Development and Land-Use Planning; section 8.3: Institutionalizing Staff Knowledge and Resources; section 8.4: Maintaining Funding and Technical Assistance; section 8.5: Preparing for the Future; and section 8.6: Policy Development.

What is the best way to obtain information about voluntary cleanup programs?

Voluntary cleanup programs are administered through state governments and are typically supervised by the environmental protection or natural resources department of a state government.

For more information see Appendix IV: State Voluntary Cleanup Programs.

How can local governments facilitate community land-use planning?

The most important way to ensure community satisfaction with land-use plans is to make every effort to reach and include stakeholder opinions to develop comprehensive redevelopment initiatives. In turn, local governments should seek to integrate innovative programs and technologies into planning regimens tailored for each site or district within a community. Finally, local governments must do their homework and learn from their own failures and successes as well as those of other communities.

For more information see section 8.2: Community Development and Land-Use Planning.

Redevelopment

What are the major aspects involved in brownfields redevelopment?

Generally speaking, the major aspects of brownfields redevelopment can be broken down into economic and non-economic issues. Economic issues include transportation and housing initiatives that garner vast funding resources from state and federal agencies and that renovate transit and residential infrastructures within communities. Non-economic issues embody initiatives that primarily convert and preserve undeveloped or historical areas to conserve intangible community resources such as greenspaces, historical districts, and recreational areas. When synthesized, all of the aspects of brownfields redevelopment contribute to the overall well-being of a community.

For more information see section 5.3: Transportation; section 5.4: Housing; section 5.5: Greenspace; section 5.6: Recreational; and 5.7: Historical Preservation and Brownfields.

What are the major barriers to infill development?

Because of a range of misconceptions and fears often surrounding brownfields sites, local governments must be cognizant of the private interests of landowners, developers and business owners, and citizens and neighborhoods in the vicinity of a proposed infill site. Common programs offered by local governments to combat such fears include technical assistance, liability assurance, financial subsidy, and community involvement programs. By creating incentives for infill development efforts such as brownfields revitalization, local governments encourage community reinvestment by demonstrating leadership and commitment to community vitality. In addition, municipal authorities lay groundwork for redevelopment efforts among community stakeholders by shouldering the burden of complicated technical, legal, organizational, and financial tasks.

For more information see section 5.2: Infill Development.

What challenges and opportunities typify rural brownfields?

Rural brownfields are different because they usually possess qualities that are the reverse of those at contaminated sites in urban settings. Rural communities are typically geographically isolated, lack financial and technical resources, and have vast amounts of undeveloped land. Often, such factors lead rural communities to overlook the advantages of redevelopment. However, brownfields renovation can be especially prudent in rural communities because of the potential for economic revitalization and job creation.

For more information see section 5.8: Rural Brownfields.

What challenges and opportunities typify waterfront brownfields redevelopment?

Waterfront brownfields redevelopment provides an example of a broad range of challenges and opportunities that can be effectively addressed to preserve land resources with great industrial, transportation, historic, recreational, and aesthetic significance. However, these projects face challenges linked to the twofold dilemma of massive,

multijurisdictional watersheds and the physical characteristics of water and the hydrologic cycle. Therefore, planning initiatives must be comprehensive not only to accommodate an extensive scale of land and hydrologic factors, but also to coordinate a broad array of stakeholders. In addition, contamination issues must be meticulously examined and modeled before remediation because of the dispersive nature of waterborne particles.

For more information see section 5.9: Waterfront Brownfields.

What challenges and opportunities typify military base reuse?

Military base reuse illustrates two important factors of brownfields development: (1) the need for creative program development among a single agency or a small group of agencies, and (2) the consequences to a “one-factory” town when a predominant industry leaves a community and eliminates numerous primary and support employment opportunities. Most commonly, military installations with facilities used to produce or house highly toxic materials, such as arsenals of chemical or nuclear weapons, are subject to jurisdictional requirements that supersede public laws and agencies. Therefore, military base reuse demonstrates a form of brownfields redevelopment where a single institution or a few institutions must develop appropriate funding and remediation protocols to address contamination and economic concerns.

For more information see section 5.10: Military Base Reuse.

What kind of roles have universities and local academic institutions had in brownfields redevelopment?

Working with universities can provide a community or local government with resources that it may not have access to otherwise. Establishing these lines of communication could also lead to other opportunities for collaboration. University staff members and students with knowledge and experience in brownfields-related subjects such as planning may lend their expertise to a local project.

For more information see section 7.2: University Partnerships.

How can gentrification be avoided in brownfields redevelopment?

To avoid the gentrification of disadvantaged or lower-income neighborhoods, redevelopment strategies must account for those districts when planning and projecting the effects of revitalization. To do so, local governments and community development commissions must provide opportunities for all stakeholders to contribute to the planning process. Therefore, city planners must engage the proper channels for community outreach so that the special interests of communities intended to be revitalized are not isolated from the benefits of brownfields development.

For more information see section 8.6: Policy Development.

How can local governments promote non-economic uses of remediated brownfields?

In addition to structural and economic revitalization, renovated brownfields may be converted to undeveloped open space after remediation. While many lenders and developers are influenced by financial returns on real estate, communities may benefit from parks within or on the fringes of metropolitan areas. These renovated parcels of land may be reforested or simply left to grow unhindered as natural urban buffers. Local governments are able to promote such practices by packaging these projects as community open space and recreational resources available for the enjoyment of all citizens.

For more information see section 8.6: Policy Development.

How can a community measure the success of brownfields redevelopment?

Economically, increased tax revenues from construction and new residential, commercial, and industrial establishments, as well as new employment opportunities, indicate the benefits of brownfields redevelopment. Along the same lines, measures such as the number or acreage of sites remediated from derelict to productive properties demonstrate changes for the better within communities. With respect to issues of environmental justice and improved livelihoods among community members, standards may need to be further developed or even left intangible. Instead of

relying on a numerical formula, local governments can ensure the well-being of citizens through sustained outreach and feedback after redevelopment projects.

For more information see section 8.6: Policy Development.

What is the best way to select a remedial technology for a brownfields site?

Brownfields remedial technologies are as different as the sites they are used to clean up. Like most brownfields and environmental issues, numerous interconnected factors relating to local geology, hydrology, and human ecology must be considered before selecting from an expanding list of innovative remedial technologies. In addition, project limitations including budget and time frame affect decisions concerning what techniques are most appropriate for a specific project.

For more information see Appendix V: Brownfields Remediation Technologies.

Financing

What is an EPA Brownfields Pilot grant and how can a local government apply for one?

A Brownfields Pilot grant is an award of up to \$200,000 to a local, state, or tribal government that can be used for activities before cleanup. Eligible activities include identification, assessment, characterization, and cleanup planning at brownfields sites. The grants are awarded through a competitive process. A local government interested in applying should obtain an application from EPA.

For more information see section 6.2: Public Financing.

How can developers use revolving loan funds in brownfields redevelopment?

Revolving loan funds are loans made from a funding source at low interest rates that are eventually circulated back into a pot of money enabling more loans to be made. EPA is currently offering Brownfields Cleanup Revolving Loan Funds, which local governments can use to attract developers.

For more information see section 6.2: Public Financing.

How do banking regulators affect financing for brownfields development?

State and federal financial regulators require some lenders, including banks and savings and loans, to limit the level of risk in their lending portfolio. As a result, lenders may not make loans for activities that are perceived as risky by regulators (e.g., the redevelopment of contaminated properties). Several regulatory agencies, including the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision, have issued specific policies concerning environmental risk.

For more information see section 6.4: Banking Policies and Regulations.

What can be done to reduce lenders' concerns about brownfields redevelopment?

Strategies for reassuring lenders include enacting new federal and state laws and regulations that minimize the risks of lender liability, providing examples of lenders that have successfully made loans for brownfields reuse, and developing strategies such as environmental insurance to ensure that funds are available to cover unexpected remediation costs.

For more information see section 6.3: Private Financing.

What other incentives can the public sector provide for private sector involvement in brownfields development?

Many of the traditional economic development incentives, such as infrastructure development and tax abatements, can easily apply to brownfields sites. In addition, some special incentives, including grants for preliminary environmental assessments and streamlined regulatory processes, may encourage brownfields development.

For more information see section 6.2: Public Financing.

Can state economic development tools help with brownfields?

A number of state agencies provide grants, loans, and tax incentives to developers of brownfields. In addition to providing state VCPs, many states implement their own loan, grant, or tax incentive programs to help encourage brownfields redevelopment.

For more information see section 6.2: Public Financing.

How can a local government identify other area organizations that are receiving federal funding to work on brownfields-related issues?

There is no single source for identifying recipients of federal funding, but the regional EPA

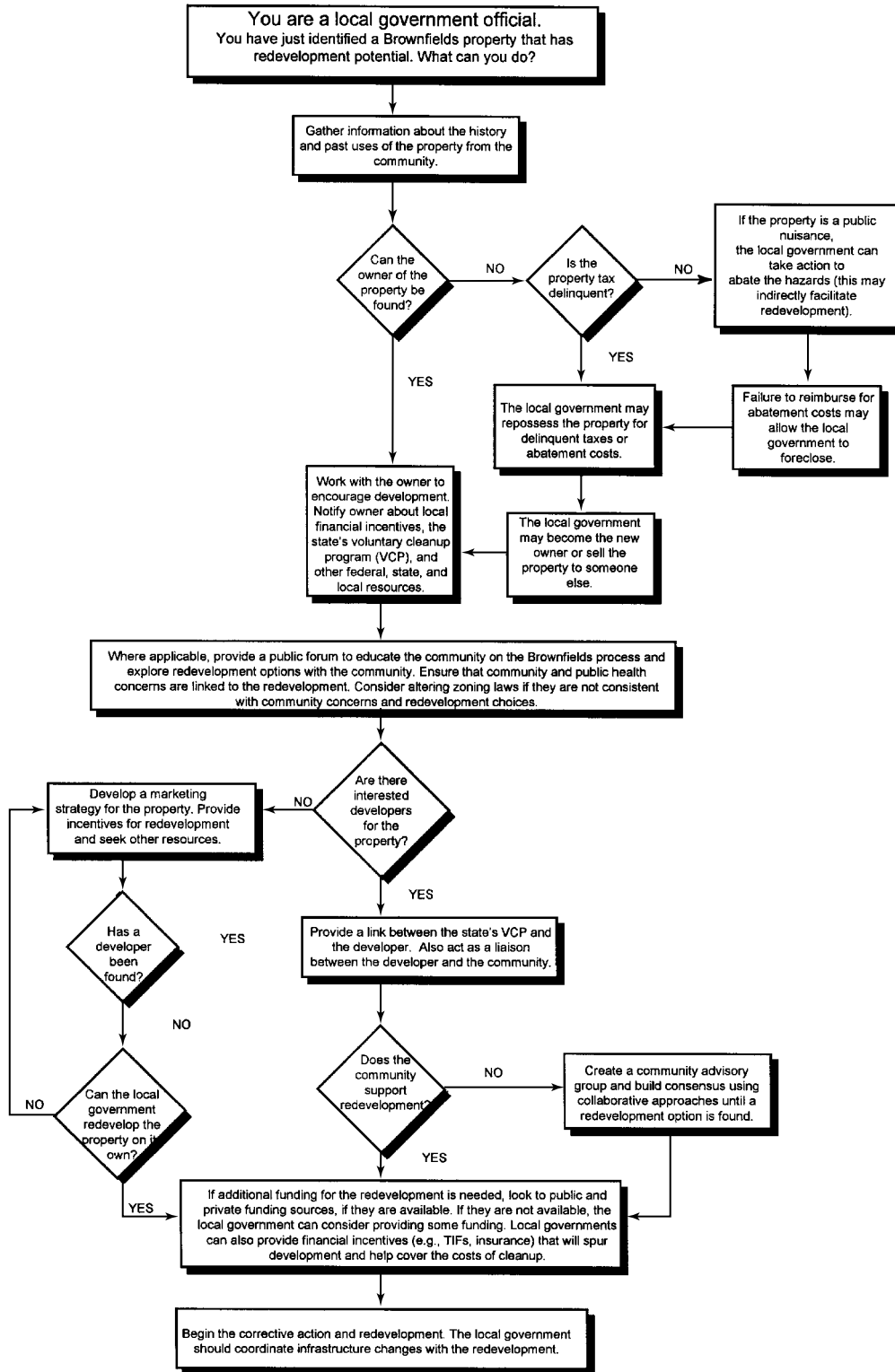
brownfields coordinator can provide information and suggest contacts at other federal agencies.

For more information see Appendix I: Federal Interagency Working Group Summary and Contacts.

¹See 42 U.S.C. section 9604(a)(1)(B).

²This perception is changing with the announcement of the Superfund Redevelopment Initiative (July 1999), which creates EPA pilot programs to look at ways to redevelop or reuse Superfund sites.

Exhibit 1.1: Local Government Decision Tree for Brownfields Redevelopment



PARTNERSHIPS IN BROWNFIELDS REDEVELOPMENT



2.1

Overview

Redeveloping contaminated property is often a project that extends beyond local resources and necessitates partnering. Other governments or their agencies—be they local, state, or federal—can provide a city with the human and financial resources as well as technical assistance that it needs. Local, state, and federal governments or agencies can all play roles in implementing comprehensive redevelopment projects that consider the social, cultural, economic, and environmental aspects of brownfields. Likewise, community development corporations, universities, nongovernmental organizations, and private industry are all important partners and stakeholders in brownfields redevelopment.

The following sections examine the various roles that stakeholder groups may play in the process of revitalizing communities through brownfields and economic redevelopment:

- 2.2 Components of Partnership
- 2.3 Stakeholder Roles
- 2.4 Planning
- 2.5 Environmental Programs
- 2.6 Economic Planning
- 2.7 Community Involvement, Outreach, and Education
- 2.8 Public Health
- 2.9 Coalition Building and Relationships
- 2.10 Preventing Staff Turnover
- 2.11 Expanding Community Involvement, Outreach, and Education
- 2.12 Increasing Stakeholder Involvement
- 2.13 Managing Expectations
- 2.14 Voluntary Cleanup Programs
- 2.15 Conclusion

2.2

Components of Partnership

Local governance relies on the coordination of various multijurisdictional agencies and multidisciplinary professionals, as well as all members of the general public. In order to facilitate such coordination efforts, an approach must be implemented that accommodates the interests of a diverse group of stakeholders and addresses issues in a practical and integrated manner. Two essential aspects of such a strategy are a team approach and an effective means of communication.

The Team Approach

Many brownfields pilot projects use the project team approach, a popular method to maximize individual stakeholder efforts and to unify separate redevelopment efforts by creating buy-in to the overall objectives among the partners. This method enables stakeholders to fulfill their individual project responsibilities while keeping focused on overall project objectives. Assembling

a team to carry out brownfields redevelopment can help create a sense of solidarity among local government representatives, community groups, residents, and private sector partners. Local governments using the team approach have demonstrated the following:

- Employing a team-based strategy helps to acquire technical assistance and to share information;
- Using team meetings generates synergy for the project and brings diverse groups together; and
- Committing human capital, involving the public and private sector, and building consensus are invaluable assets to achieving project or program goals.

Communication

Successful coordination requires open lines of communication between staff members of the brownfields program and its key stakeholders. Most successful projects require that everyone involved be in the communication loop and aware of project activities. Often, communication can be improved just by having a brownfields coordinator who can act as the central point of contact. Holding regular meetings with all stakeholders and circulating newsletters are practical communication strategies.

How different forms of communication are used depends on the structure of the brownfields program and on the stakeholders involved. In surveys, local governments have reported that increased communication has benefited their coordination efforts in the following ways:

- Increased communication prevents confusion and duplicative efforts that can slow the redevelopment process;
- Quarterly meetings supplemented by smaller, more frequent, project-specific meetings present opportunities for brownfields partners to discuss the status of redevelopment projects and to identify ways to improve the process;

- Weekly meetings are usually the only place representatives of local and state government agencies interact with community groups and the private sector;
- E-mail and conference calls can be used to accommodate stakeholders on tight schedules; or
- More creative forms of communication, such as Internet Web sites and television programs, provide the capability to reach larger audiences.

Communities and local governments face a number of other issues concerning coalition building and developing partnerships.

2.3

Stakeholder Roles

The Role of Local Governments

Local governments have historically controlled the fate of brownfields redevelopment because of their ties to land-use processes. The role that a local government can play in brownfields redevelopment varies widely according to the size, skills, and resources of its staff. Ideally, local government should include planning, economic development, environmental services, community programs (including housing and public programs), and public health education and risk assessment. Besides contamination, brownfields-afflicted communities often face problems such as unemployment, substandard housing, or an outdated infrastructure. Each of these perspectives is important in examining the breadth and depth of brownfields. By coordinating programs and resources, a brownfields redevelopment project can grow to address issues at a site in addition to the redevelopment (e.g., an environmental assessment and cleanup activities might be linked to workforce and job-development programs by creating permanent jobs after the redevelopment).

The degree to which each local government office is involved in the cleanup process depends on the nature of the cleanup and the capacities of those offices. Most important, local governments

must work with individuals from business, environmental, economic development, social service, and community organizations to coordinate the long-lasting effects of redeveloping brownfields. The degree of coordination depends on who is developing the site. When a local government is redeveloping properties, it must work closely with constituents and consider all the components of redevelopment in a balanced manner. Sites that are being privately redeveloped need less coordination by local government.

When a local government is redeveloping properties, it must work closely with constituents and consider all the components of redevelopment in a balanced manner.

Local governments maintain the day-to-day operations of redevelopment projects; they see specific brownfield projects within the scope of a community-wide plan. Because brownfields are basically land development projects, which are the domain of local government, brownfields programs are usually housed within local governments. While roles may differ depending on the makeup of individual local governments, departments share certain common responsibilities, as outlined in Table 2.1.

The Role of Regional Entities

Local governments are often involved in region-wide partnerships because economic, environmental, and social problems such as poverty, unemployment, or environmental contamination can be endemic to entire regions. The same holds true for brownfields, which are often similar across many jurisdictions. In addition, brownfields often have cumulative effects that transcend jurisdictional boundaries.

A number of benefits impel local governments and community groups to use regional entities to address brownfields redevelopment, including the following:

Table 2.1: Common Roles of Local Government Departments	
Departments	Common Roles
Local Government Administrator	Managing projects, recruiting business, planning, and reaching out to the community.
Economic Development Department	Managing projects, recruiting businesses, identifying sites, marketing, hiring consultants, controlling Community Development Block Grant (CDBG) funding, conducting feasibility analyses, developing of financial incentive packages, and gathering research and statistics.
Planning Department	Managing projects, land-use planning, identifying sites, managing brownfields databases, providing technical assistance, hiring consultants, reaching out to the public, education, development planning, negotiating with property owners, and ensuring compliance with comprehensive land-use planning and zoning regulations.
Public Works Department	Coordinating local government-owned brownfields redevelopments, managing environmental contracts, planning infrastructure, maintaining properties, facilities, and labor, and disposing and reusing local government-owned brownfields.
Environmental/Solid Waste Department	Administering projects, overseeing sites, developing cleanup standards, approving remedial action plans, remediation planning, monitoring site prioritization, developing technical and regulatory material to assist potential brownfields customers, stormwater planning, reaching out to the community, supervising developer activities, ensuring compliance with waste regulations, and coordinating site materials removal.
Housing Department	Reaching out to the community, marketing, redeveloping residential property, promoting public housing development.
Public Safety Department	Reaching out to the community, identifying sites, providing public safety during redevelopment, and providing fire safety.
Engineering Department	Conducting Phase I and Phase II environmental investigations, managing environmental contracts, and designing construction and infrastructure projects.
Transportation Department	Transportation planning around the brownfields site, providing traffic control at the site, encouraging the development of an intermodal transportation center, administering Transportation Efficiency Act for the 21 st century (TEA-21) projects, and coordinating with state departments of transportation.
Health and Human Services Department	Conducting site sampling plans, coordinating with state and federal health departments, ensuring compliance with public health codes during and after redevelopment, and developing the workforce.
Parks and Recreation Department	Creating and maintaining greenways, parks, recreational areas, and waterways, coordinating with community groups, and parks programming.
Legal Department	Providing legal advice, negotiating contracts, liability consulting, and designing prospective purchaser agreements.

- Enabling the sharing of resources of multiple governmental jurisdictions, private sector firms, community groups, and nonprofit organizations to solve problems associated with brownfields;
- Promoting the use of nontraditional management techniques and problem-solving methods;
- Facilitating and coordinating services that more logically spread themselves across jurisdictions, such as public transportation; and

- Using transportation and regional planning councils. Metropolitan planning organizations (MPOs) can be great regional partners. MPOs work across jurisdictional boundaries to determine transportation needs and resources.

In metropolitan areas, U.S. Department of Transportation (DOT) funds are funneled through MPOs to local jurisdictions. Given their familiarity with federal funding, MPOs can be important partners in strategizing for funding and in developing comprehensive land-use and transportation plans.

The Role of State Governments

High assessment and remediation costs can often be a hardship for local governments and the small businesses they work with. Involving the expertise and capital of state environmental agencies might lessen the fiscal burden for local government. States are well positioned to help with many aspects of brownfields redevelopment. Many states have included land reuse directives in their overall land-use and planning guides and have provided economic incentives for brownfields reuse and redevelopment. State agencies often have greater resources and staffs with more expertise in specific areas, such as environmental issues or public health programs, to help local governments and community members. States also have the resources, authority, and responsibility to enforce environmental and public health laws. Such enforcement is often the best incentive for redeveloping properties. Memoranda of Understanding (MOUs) between local government and community groups and state government agencies help partners coordinate activities and distinguish the scope of a project partner's work.

The Role of the Federal Government

The federal government can provide both funding assistance and expertise to local governments. Many federal agencies use regional offices to provide technical assistance on brownfields issues to local governments and communities. The federal government is working very hard through thirty agencies to provide many resources, including grants, loans, and technical assistance, to communities that are addressing brownfields

issues. This initiative began in 1997, when Vice President Al Gore announced the Brownfields National Partnership Action Agenda, which encourages cooperation among agencies to link environmental remediation, economic development, public health, community revitalization, and other efforts to address the multifaceted nature of the brownfields problem. Many of the

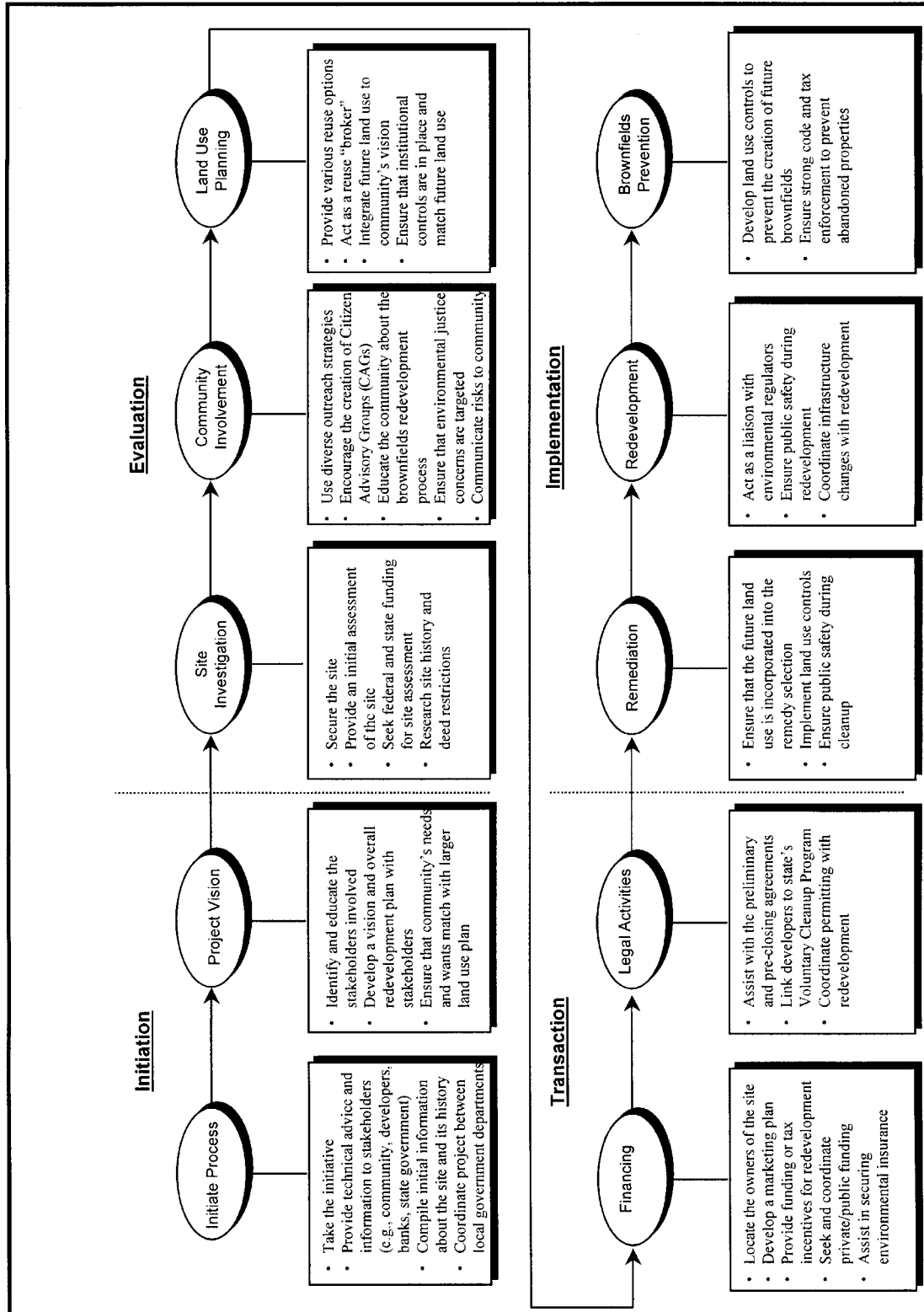
The Brownfields Showcase Communities Initiative

The Brownfields Showcase Communities Initiative was developed as a model to test the coordination of federal, state, and local resources and agencies. Twenty federal agencies were charged with collaborating to develop a two-year agenda wherein federal agencies can commit resources, dedicate programs, and develop partnerships to work in a coordinated manner with State and local governments and communities to address the multifaceted nature of brownfields.

Representatives from the agencies formed the Inter-agency Working Group on Brownfields to jointly address brownfields and urban redevelopment issues. The Brownfields National Partnership Action Agenda grew out of that working group. That agenda contains more than 100 action items that the participating agencies committed to accomplish over a two-year period. The working group decided that the 100 action items were good first steps and important indicators of collaboration, but that measuring the implementation—and the ultimate success of the partnership—would be difficult without a coordinated approach in communities throughout the country. Thus, the Brownfields Showcase Communities Initiative was born.

The Brownfields Showcase Communities Initiative has four main goals: (1) to promote environmental protection; (2) to foster economic redevelopment and community revitalization through the assessment, cleanup and sustainable reuse of brownfields; (3) to link federal, state, local, and nongovernmental actions and resources to restore and reuse brownfields; and (4) to develop national models demonstrating the positive results of public and private collaboration addressing brownfields challenges that can be adapted and applied to many programs. Showcase also has larger conceptual goals that will be applied to any number of federal initiatives. Those goals include an exploration of new forms and methods for delivery of services by and among federal agencies.

Exhibit 2.1: The Role of Local Government in Facilitating a Brownfields Redevelopment



federal brownfields programs are a recasting of other programs, modified to address the specific characteristics of brownfields. For example, the U.S. Department of Housing and Urban Development (HUD) has a Brownfields Economic Development Initiative (BEDI) that gives a grant and a loan to jurisdictions to help finance brownfields redevelopment activities. The grant is very similar to the Economic Development Initiative (EDI) that funds general revitalization activities. Other programs are new and are still being tested against the practical needs of communities. For example, HUD has dedicated some of its staff, in a program called Community Builders, to helping communities redevelop brownfields.

The Role of Communities

Cities and towns consist of many communities. Within a jurisdiction, even within the same few blocks, several communities may coexist. Local business owners who know each other and work together are a community as much as local ethnic groups, parents, and residents. Often an individual may be a member of several communities. For example, a local Hispanic business owner who lives in the neighborhood is aware of the issues that businesses, residents, and Hispanics all face. Most local governments understand the importance of involving community members in the decision-making process. Many successful brownfields programs involve community groups in the early planning stages of a redevelopment project in order to help such groups develop a sense of ownership in community problems and their solutions. Moreover, local residents living near brownfields properties are most affected by economic and environmental problems.

Bringing local residents to the table when planning a brownfields redevelopment benefits the project in the following ways:

- Integrating neighborhood ideas into the redevelopment helps the community develop a sense of ownership of the problem and its solutions. This involvement can help prevent abandonment of properties from recurring.
- Familiarizing local residents with issues of community development and public administration facing the community enables those residents to participate more freely with local government officials and private sector partners.
- Knowing the community's needs and wants can help local government shape the redevelopment and prevent disagreements from occurring.

The Role of the Private Sector

Private sector entities, including banks, consultants, engineering firms, private developers and local businesses, are important partners in brownfields redevelopment. Because most brownfields are privately owned, most local government brownfields programs focus on facilitating the cleanup and reuse of sites by private sector developers. Local government strategy is to create a business climate that encourages brownfields redevelopment over suburban or greenfields development. Representatives from the private sector can often provide valuable insight about economic activity, job creation, and other aspects of redevelopment. Also, like local residents, local business owners must have their priorities considered when planning the redevelopment project. No one would benefit if one successful business were gained but another lost.

Often, the private sector is the first to inquire about the availability of property. Local governments report that benefits of involving the private sector include:

- Mutually beneficial agreements between local government and private enterprises that lead to the cleanup and redevelopment of brownfield properties (cooperative agreements);
- Brownfield problem-solving that involves the private sector, the local community, and government at the local, state, and federal levels; and
- Education about the brownfields process that may prompt developers to become involved with brownfields projects.

Historic East Baltimore Community Action Coalition, Baltimore, Maryland

Until recently, CDCs, like many other groups, have been unwilling to look at brownfields redevelopment mainly because of fears of possible legal liability associated with remediating contaminated property. However, several CDCs have redeveloped brownfields sites with excellent results.

The Historic East Baltimore Community Action Coalition (HEBCAC) has worked to redevelop brownfields sites. HEBCAC's primary concern in redeveloping properties has been to maintain property values. HEBCAC is currently redeveloping two sites. One is a 50,000-square-foot building that when redeveloped HEBCAC feels will be the anchor for its other economic development activities. The 1890 building, was contaminated primarily with asbestos and lead. The site has been remediated, and redevelopment for commercial business is under way.

The second site, a former clothing and textile plant, is an 85,000 square foot building located in a residential area that HEBCAC has redeveloped. The building contains lead, asbestos, and pigeon guano. HEBCAC plans to redevelop the building into a business incubator and community center.

Both projects are located within Baltimore's federal empowerment zone enabling HEBCAC to use \$34.2 million in HUD grants and loans through the Section 108 loan program. The CDC purchased the 85,000-square-foot building at half its value because the owner was able to write off the difference as a tax deduction.

Communities often hire consultants for specific or multiple brownfields tasks. Private consultants have numerous capabilities that many local governments may not have in their own staffs, such as the ability to conduct environmental assessments, market studies, and site remediation. In some instances, local government staff members may have such skills but may not have the time to take on additional projects. Both small and large communities have reported benefits from working with consultants, including the following:

- Application of greater technical expertise;
- Increased community involvement;
- Enhanced brownfields planning; and
- Improved brownfields projects and program management.

The Role of Community Development Corporations

"The mission of . . . [community development corporations] . . . is to foster the revitalization of the . . . community. Working in collaboration with community stakeholders, . . . [community development corporations] . . . act as catalysts for positive change by providing leadership in the areas of planning, advocacy, image building, and investment."¹

Community development corporations (CDCs) are nonprofit entities of local governments or communities that function to maintain economic growth and create new opportunities for residents and businesses within the CDCs boundaries. CDCs can represent entire regions, such as the Economic Development Council of Seattle and King County, Washington, or smaller areas, such as the Lowerton Redevelopment Corporation, which represents a small neighborhood in St. Paul, Minnesota. According to the 1998 Economic Development CDC Census of the National Congress Community, CDCs have produced 550,000 units of affordable housing, 71 million square feet of commercial or industrial space, and 247,000 private sector jobs. Fifty-two percent of CDCs are located in urban areas, and another twenty-two percent serve a combination of urban and rural areas.

CDCs provide services and valuable assistance in identifying prospective locations to develop; provide demographic and economic data and produce business climate and community profiles for potential developers. For example, many CDCs keep databases of available buildings and property within their boundaries and can help match land or buildings to a developer's facility requirements. CDCs provide guidance through the labyrinth of zoning and permit regulations inherent in any redevelopment effort. They can help in development projects by providing funding through numerous federal and state development grants and loans available to nonprofit entities. CDCs are also often capable of leveraging local financing, such as Tax Increment Financing zones, for redevelopment projects. Finally, CDCs are often the best available link to the communities they serve. CDCs can facilitate needed community involvement and support in a development

project. Their role as a nonprofit community developer puts them in a pivotal position as brownfields developers.

The Role of Faith Organizations

Faith organizations can serve as centerpieces in communities, both physically and emotionally. Churches, synagogues, and mosques are often open for a range of community activities beyond the faith-based ones, including child care, after-school programs, and adult-education classes. Faith leaders often serve as informal leaders for congregates and community members and have an institutional knowledge of the community and its history. These leaders can serve as a resource for garnering interest in and disseminating information about issues. Faith institutions can also serve as community-based centers to hold public meetings and information sessions, especially in neighborhoods where public transportation is not convenient and many citizens do not have cars. Faith leaders are often skilled at dispute resolution and other methods of negotiation and can help facilitate discussions among stakeholders.

In addition to efforts that draw upon the strengths of local parishioners, numerous coalitions have evolved to represent national environmental concerns from a religious standpoint. For example, the National Religious Partnership for the Environment (NRPE) was established in 1993 to promote environmental stewardship among multiple faiths and denominations. Current members include: the U.S. Catholic Conference, the National Council of Churches of Christ, the Coalition on Environment and Jewish Life, and the Evangelical Environmental Network. NRPE operates to focus national concerns as well as to provide information that assists environmental programming by interpreting sacred texts and that encourages tailoring environmental services to accommodate religious values. Many of NRPE's efforts are accomplished through public outreach and education such as delivering adapted sermons and providing environmental fact sheets for parishioners.

Jesus People Against Pollution, Columbia, Mississippi

In Columbia, Mississippi, concerned citizens formed the nonprofit, nonsectarian Jesus People Against Pollution (JPAP) to address environmental contamination and justice issues in several low-income, racially diverse neighborhoods. Central to the group's concerns were suspicious human and livestock health problems that surfaced after the explosion and abandonment of the Reichhold Chemical plant in 1977. Shortly thereafter, over four thousand buried and leaking drums of toxic chemicals were discovered on the Reichhold site. As years passed, local residents developed abnormal incidences of cancer, respiratory illness, immune deficiency disorder, and skin discoloration. In addition, intermittent cattle and fish kills were linked to groundwater contamination.

To date, JPAP has successfully mustered community support and lobbied for action among local, state, and federal governments. The Reichhold Chemical site is currently undergoing Superfund remediation, and JPAP is advocating its own monitoring programs in addition to U.S. Environmental Protection Agency studies. JPAP is also developing plans to relocate residents currently living on properties adjacent to the Reichhold site and creating medical care programs for people afflicted with pollutant-related health conditions.

The Role of Colleges, Universities, and Nongovernment Organizations

Nontraditional partners such as universities and nongovernment organizations (NGOs) can be valuable allies to brownfields communities. By partnering with a university, a local government can gain insight and expertise, often at little cost. Smaller communities are finding that collaboration with universities saves time and money for redevelopment projects. Professors, researchers, and graduate students can supply a bounty of professional knowledge and job skills that can benefit communities facing brownfields redevelopment. Professors and graduate students are often experienced at writing grants and turning kernels of ideas into full-blown projects. Having university support and resources as a base can propel brownfields redevelopment projects forward.

Likewise, university resources, such as meeting facilities, laboratories, advanced computer systems, geographic information systems (GIS) software, and public health and population data, can be useful tools in addressing brownfields and related issues.

Professors designing public affairs courses, students developing research projects, or civic-minded students looking for an interesting volunteer experience can all contribute to and learn from brownfields projects. Local colleges are also proving to be effective laboratories for job-training and public health grants available to communities from federal agencies. Community members who participate in brownfields job-training programs through colleges also have access to resources to help them in their own professional and personal development.

NGOs often have expertise in many fields and may work through grants from government agencies. The benefits of involving an NGO in a brownfields project include:

- Quality technical assistance with environmental assessments, grant writing, and project management; and
- Lower costs of services, which is especially important for smaller communities that lack the technical staff and financial resources to hire additional personnel and private consultants.

Growth Management through Zoning in King County/Seattle, Washington

In 1990, King County, Washington, developed a growth management plan that severely curtailed new industrial zoning in the city of Seattle. This law forced new industries coming into Seattle to look into the city's Duwamish Industrial Corridor. The law also required that established businesses would have to do the appropriate environmental cleanup on their own properties, to expand or to move into other industrial spaces. Consequently, the Duwamish Industrial Corridor has a very high occupancy rate, and, Seattle, King County, and private industries are committed to appropriate environmental remediation.

2.4

Planning

Local Governments and Planning

Local governments are situated to promote the successful reuse of brownfields by including such redevelopment in long-term plans and space needs. Localities can do this by integrating brownfields with other development projects, thus creating the necessary crossover to move brownfields redevelopment past environmental cleanup to economic activities and community development. In considering brownfields redevelopment and land-use planning, local governments should also attend to infrastructure needs in brownfields zones. Properties will be redeveloped less quickly if the infrastructure (roads, sewers, and water lines) around them is not improved at the same time. Another way that communities can greatly facilitate brownfields redevelopment is by developing smart growth plans that severely limit the ability of industry and business to expand into greenfields. If industries are forced to occupy spaces in industrially zoned areas, and the infrastructure needs of those areas are met, communities will have taken two steps in the right direction to redeveloping brownfields through careful planning.

Local governments can facilitate brownfields redevelopment through planning and public education. City planners can extend the planning process and land-use decisions to residents, local businesses and economic development corporations simply by making planning information available. Interested parties can understand and plan for their own future land use if the following sorts of materials are available:

- Current land use;
- Zoning laws and maps;
- Comprehensive community master plans;
- Population growth patterns and projections (e.g., Bureau of the Census projections);
- Accessibility of the site to existing infrastructure (e.g., transportation and public utilities);
- Institutional controls currently in place;

- Site location in relation to urban, residential, commercial, industrial, agricultural, and recreational areas;
- Federal or state land-use designation (federal or state designated lands range from land established for use by the general public, such as national parks or state recreational areas, to governmental facilities providing extensive site-access restrictions, such as Department of Defense facilities);
- Historical or recent development patterns;
- Cultural factors (e.g., historical sites or Native American religious sites);
- Natural resources information;
- Location of on-site or nearby wetlands;
- Proximity of the site to a floodplain;
- Proximity of the site to critical habitats of endangered or threatened species; and
- Location of wellhead protection areas, recharge areas, and other areas identified in the state's comprehensive groundwater protection program.

State Governments and Planning

State governments can play an important role in brownfields redevelopment through their planning agencies. State governments have the authority to develop comprehensive land-use plans that set urban and rural goals. A state government can also identify incentives and barriers to achieving those goals and set forth a statewide plan of action for appropriate land-use, urban land redevelopment, and growth strategies. State agencies have the ability and authority to work with each other to develop comprehensive plans to deal with environmental, economic development, transportation, and housing issues. The state planning office also can achieve its planning goals by working with public and private interests to guide future growth into compact forms of development and redevelopment, located to make the most efficient use of existing infrastructure systems and to support the maintenance of delivery capacities in other systems.

State governments have the authority “to set statewide guidelines so that certain classes of land uses develop in a specified way in order to achieve certain objectives, as in setting minimum

Smart Growth Planning in Maryland

The Smart Growth and Neighborhood Conservation Implementation Plan of the Maryland Department of the Environment (MDE) is a significant first step toward realizing the vision of a state environmental management system designed to meet the needs of Marylanders. It is one part of a larger state plan being crafted as the result of Maryland's Smart Growth. MDE's Smart Growth Implementation Plan uses a results-oriented approach that can be measured and tracked over time; the plan seeks to guide actions in a range of areas that affect growth and development in Maryland. The targeting of funding for growth-related environmental infrastructure, the facilitating of brownfields redevelopment, and the fostering of transportation plans that support air-quality improvement goals are but a few of the many ways in which the plan contributes to the state's larger smart growth and revitalization effort.

The Governor's Neighborhood Conservation and Smart Growth Initiative directs the expenditure of specific types of State funding to geographic areas of Maryland that have been locally designated as growth areas. In addition to transportation, housing, community, and industrial development funding, Senate Bill 389 and its companion, House Bill 508, target certain environmental funds to these designated growth areas. Included are the following funds administered by MDE:

- Water Quality Revolving Loan Fund;
- Drinking Water Revolving Loan Fund;
- Water Supply Financial Assistance Fund; and
- Supplemental Assistance Grants.

density ranges for urban development in an effort to prevent or reduce urban sprawl.”² Some state governments also have the ability “to engage in the direct regulation of land development, as in areas of the state where there are no capable governmental units to undertake such regulation or because of the impact of development on state-owned or state-financed facilities.”³

State governments are in the position of creating laws to implement institutional controls to monitor potential long-term hazards and other issues related to brownfields redevelopment. Local governments are often without the authority,

knowledge, or resources to establish or enforce institutional controls.

The Federal Government and Planning
Few federal agencies are involved in local land-use decisions, but many have resources and technical assistance that local professionals can access in considering long-term land-use policies. For example, the U.S. Environmental Protection Agency provides environmental assistance. HUD provides expertise and technical assistance in housing and economic development issues. HUD also has some public health and substance-abatement programs. The U.S. Army Corp of Engineers (USACE) has worked extensively with local jurisdictions on land-use decisions and retrofitting natural and manmade features to accommodate each other. Another increasing use of federal resources in the brownfields arena is that of military base closure reuse. As bases close, the property and all of its structures are given to the local jurisdiction. Local governments have been working with base realignment officials to use all available resources to find a best remediation plan and next use for what is often thousands of acres of a heavily contaminated former military base.

The Economic Development Administration (EDA) is an agency within the Department of Commerce whose purpose is to generate new jobs, to help retain existing jobs, and to stimulate industrial and commercial growth in economically distressed areas. The agency assists rural or urban areas experiencing high unemployment, low income, or other severe economic distress. Since 1997, EDA has identified brownfields as strategic priorities for the projects that it funds at the local level. Staff members emphasize how brownfields redevelopment is a component of the agency's activities that is not necessarily seen as an end in itself. EDA provides communities with funds to make infrastructure improvement a begin capitalized revolving loan funds, and with other forms of support. One economic development specialist exists for every two or three states in the country. Economic development specialists work with communities in planning projects, writing proposals and grants, and implementing programs.

Representatives from private sector organizations, . . . are important contributors to a community's planning process.

EDA polices do not allow communities without comprehensive long-term planning documents to receive grants or loans. This policy is the agency's way to encouraging all jurisdictions to develop a comprehensive economic development and land-use strategy. Such long-term planning serves many functions in brownfields redevelopment. First, it allows communities to better coordinate the multifaceted local approaches to brownfields. Second, long-term planning allows communities to understand how redevelopment and land use are part of larger goals. Last, and perhaps most important on the local level, communities will be able to better coordinate local, state, regional, and federal resources if they have long-term planning documents that demonstrate their dedication to methodical redevelopment and their commitment to partnerships.

For more information see discussion of the U.S. Department of Commerce, Economic Development Administration in Appendix I.

The Private Sector and Planning
Representatives from private sector organizations, including engineering firms, consultants, developers, and local businesses, are important contributors to a community's planning process. Local industries and businesses should be consulted about their own growth plans and their organizations' needs for additional infrastructure services, expanded buildings, additional job creation, or other factors that influence a community's overall development and progress. Private sector representatives can also contribute expertise to a community's planning process. Consultants and engineering firms may have knowledge of process or developments that would benefit the community's long-range plans. For example, such firms may have computer or mapping technology that can demonstrate the effects of projected growth on an area.

Communities and Planning

In the same way that private sector businesses should be considered important stakeholders in the planning process, so, too, should community development and neighborhood organizations. These organizations have important knowledge about the changing demographics and needs of citizens, about how future resources should be allocated, and about how land-use decisions should be made. Likewise, local faith leaders can offer a perspective on community needs.

2.5

Environmental Programs

Local governments play an important role in the environmental component of brownfields cleanup. Few local governments have staff dedicated solely to environmental policies and evaluations. Rather, most rely on various agencies to educate the local government staff members about environmental issues appropriate to their work. Nonetheless, local governments should manage certain environmental issues in redevelopment of contaminated properties. Local governments are responsible for setting environmental standards and objectives. Often, the management may have to be accomplished with state or federal agencies that have more appropriate resources and knowledge. Therefore, fostering intergovernmental relations is an important role for local governments to play in the environmental aspects of brownfields cleanup. Local jurisdictions can develop good working relationships by consulting early and often, by communicating consistently about sites and cleanup efforts, and by working through appropriate channels of other governmental entities.

Local Government Environmental Programs

Local governments should readily engage in communicating and educating citizens and businesses about environmental issues so that all stakeholders are kept abreast of environmental information, state and federal environmental programs, and procedures for site cleanup. Local governments should undertake the important task

of disclosing environmental effects by discussing initial studies, examining environmental impact reports, and addressing incorrect information or negative publicity. A second important local government role is to identify and prevent any further environmental damage at a site. Local governments can do this by mitigating the source of contamination, helping the site find alternatives to replace the cause of contamination, and monitoring the site. Local governments should also disclose the decision-making process for environmental issues, disclose findings, and discuss all statements being considered. Such disclosure is the first step in enhancing public participation. Other steps include educating citizens about zoning laws and areas, posting public notices, responding to public questions, following legal enforcement procedures, and giving citizens full access to information.

Schlotzsky's Deli, Dallas, Texas

The role of the Dallas Brownfields Program (DBP) to coordinate efforts at redevelopment sites and to troubleshoot when problems arise was demonstrated in its work with developers for a closed landfill—the Centennial Plaza addition. The site had been a municipal landfill from 1951 to 1964 and in later years, hosted a cement company. The site also contained several under and above ground storage tanks. The owner of the site was eligible to participate in the state's voluntary cleanup program and planned to develop a fifteen-acre portion of the site for restaurant, hotel, and office/warehouse use.

Schlotzsky's Deli purchased one of the restaurant sites at Centennial Plaza, but reached an impasse with the city over landscaping. The state approved the closure plan for the landfill, which included planting guidelines, but Schlotzsky's had not been able to procure the landscaping stock it had proposed in the planting guidelines. The DBP convened a meeting of city and state representatives, the developer, foresters from Texas A&M (the state's land grant college), and a U.S. Forest Service representative. After a careful review of the structural needs of the landfill cap and the vegetation options was conducted, an acceptable plan for landscaping was developed and implemented.

Local government must also monitor the redevelopment process closely to ensure that site remediation is happening in a safe and expedient manner. Local government agencies must work together to divulge all known information about a particular site before the cleanup so that remediation can occur in the proper order, not jeopardizing any materials, property, or people in the cleanup effort.

Continuing communication and monitoring is important in brownfields redevelopment after the site has been cleaned. Local governments must set and enforce policies about the types of industries and businesses allowed to operate in their jurisdictions. These policies should be made with consent from community groups and residents, especially those that would be the most likely victims of industrial insults. In this regard, local governments must work closely with state agencies to enforce industrial emission standards. Local governments can do their part to accommodate industry by maintaining appropriate infra-

structure. Adequate sized roads and proper water and sewage systems are important for handling the transport and effluents of industrial components.

State Government Environmental Programs
Both state and federal agencies can find themselves in a dilemma about how to be both flexible regulatory agencies that assist businesses and industries that provide jobs and services, while being a good community citizens by enforcing environmental laws and cleaning up properties. Often, those two forms of citizenship seem to conflict with each other. Over the past decade, states have overwhelmingly developed flexible programs to work with property owners and perspective property owners to cleanup sites to acceptable standards without suffering enforcement actions that are expensive and can potentially harm long term land values.

Almost every state has an active brownfields program that assists property owners in redevelop-

Smart Growth and Neighborhood Conservation Implementation Plan, Maryland

The Maryland Department of the Environment's (MDE's) Smart Growth and Neighborhood Conservation Implementation Plan is a significant first step toward realizing the vision of a state environmental management system designed to meet the needs of Marylanders. Brownfields, places that have suffered from neglect over the years, may be found within urban, suburban, and rural landscapes across Maryland and across the country. From inner-city neighborhoods adjacent to land that became contaminated years before current laws were in place, to abandoned mines that continue to pose environmental threats to the landscape and to precious water resources, these places represent opportunities for accommodating growth that is truly smarter and for improving the quality of life of Maryland's citizenry. The Voluntary Cleanup Program and Brownfields Revitalization Incentive Program were established in February 1997 as part of Governor Glendening's Smart Growth policy. These programs are intended to encourage the cleanup and redevelopment of industrial and commercial properties in Maryland and to promote economic development, especially in distressed urban areas, by creating new job opportunities, expanding the tax base, using the existing infrastructure and preventing urban sprawl.

The voluntary cleanup program administered by MDE streamlines the environmental cleanup process for sites—usually industrial or commercial properties—that are contaminated, or perceived to be contaminated, by hazardous substances. Developers and lenders receive certain limitations on liability, and participants in the program receive certainty in the process by knowing exactly what cleanup will be required. The Brownfields Revitalization Incentive Program, managed by the Department of Business and Economic Development, provides economic incentives such as loans, grants, and property tax credits to clean up and develop certain properties.

ing contaminated properties. State programs, generally called voluntary cleanup programs (VCPs), vary in specifics. Overall, the program allows property owners to enter into a cleanup program, possibly access some technical assistance, and avoid enforcement as long as the property owner is following appropriate cleanup procedures. Many states also have prospective purchaser agreements (PPAs) whereby individuals who knowingly buy contaminated properties can negotiate a cleanup procedure with the state authorities. If the cleanup is completed according to the negotiated standards, the property owner will not be subject to any enforcement by the state because every good-faith effort was made to clean the property. States also have fiscal incentives for developers to buy contaminated properties. Incentives vary from state to state but include state tax write-offs for cleanup costs, tax abatements, and low-interest loans.

For more information see the discussion of incentives for participation in state voluntary cleanup programs in Appendix IV.

Federal Government Environmental Programs
The U.S. Environmental Protection Agency is the largest resource of funds and assistance for local brownfields cleanup. The agency has numerous programs, both competitive and non-competitive, to help local governments redevelop brownfields. Assistance is available through both regional and national EPA offices. Assistance comes in the form of assessment funds, assessments, and professional consultation. EPA has a grants program that provides funds to local governments to address many brownfields issues. In general, the funds are used for assessments, but compared with many other federal programs, the conditions for use of the money are very flexible.

Additional federal programs are discussed in other sections of this guidebook; see in-depth discussions of federal agencies and brownfields-specific programming in Appendix I.

The U.S. Department of Commerce's National Oceanic and Atmospheric Association (NOAA) provides funds, resources, and technical

U.S. Department of Agriculture

Brownfields redevelopment is an issue for the U.S. Department of Agriculture (USDA) because it can help save farmland. Typically, developers in rural American cities move to a greenspace rather than redevelop brownfields. By promoting and supporting brownfields redevelopment, USDA strives to prevent prime farmland from being sacrificed, while helping bolster rural economies. USDA Service Centers have staff to help connect local efforts to federal resources. It is through these Service Centers that USDA disseminates information and supports efforts with regard to brownfields redevelopment.

While USDA does not offer any grant programs, it supports brownfields and other development initiatives through loan programs. These loans can be used to finance parts of brownfields redevelopment projects or to leverage additional funding and support. While none of the USDA's programs for communities can be used toward site remediation, the agency's programs can be used to assist in the redevelopment of brownfields or in the development of a business on a brownfields. The programs that most directly relate to brownfields are the Business and Industry Guarantee Loan, the Rural Utilities Service, and the Rural Empowerment Zone (EZ)/Enterprise Community (EC). The Business and Industry Guarantee Loan can be used to fund the start-up or development of a business on a brownfields. These loans function much like loans from banks, except USDA offers technical assistance to its borrowers. The Rural Utilities Service lends money to fund infrastructure development or improvements, including those relating to brownfields projects. The EZ/EC program is designed to promote and support economic opportunity, sustainable community development, community-based partnerships, and strategic visions for change.

For more information see discussion of the U.S. Department of Agriculture in Appendix I.

U.S. Department of Defense, U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) operates within the U.S. Department of Defense (DOD) and is charged with providing comprehensive engineering, management, and technical support to DOD and other federal agencies, as well as to state and local governments. USACE offers technical brownfields assessment, consultation, and service to communities and to other federal agencies. Many of these services focus on waterfront or waterway projects, commensurate with USACE's history of waterborne navigation works. However, the agency is developing a new emphasis that balances the creation of public works with the maintenance of livable cities.

USACE's primary role in the Brownfields National Partnership is to provide technical consultation to brownfields redevelopment projects that require engineering services. USACE fulfills this role by developing comprehensive plans, reviewing and revising civil works policies, maintaining an inventory of Formerly Used Defense Sites, and offering planning assistance to Brownfields Pilot communities. Planning assistance includes providing appraisal, title, and deed restriction services; performing market impact studies and cost-benefit analyses; sharing laboratory and field research data; developing environmental and structural frameworks for projects with contractors in Pilot communities; and carrying out projects to protect, restore, or create aquatic and ecological habitats related to the disposal of dredged materials.

For more information see discussion of the U.S. Department of Defense, U.S. Army Corps of Engineers in Appendix I.

assistance to support brownfields development efforts on the local level. NOAA's commitment to brownfields stems from the agency's desire to engage in land use planning to protect the aquatic environment. NOAA does not offer resources for brownfields through a consolidated brownfields program, nor are brownfields issues managed by one particular office within the agency. Rather, existing agency programs and funding have been modified to include brownfields redevelopment. NOAA is promoting such programming to be used to further brownfields redevelopment efforts.

For more information see discussion of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration in Appendix I.

Similarly, the U.S. Fish and Wildlife Service (USFWS) operates under the U.S. Department of the Interior (DOI) as the principal agency charged to conserve, protect, and enhance the quality of aquatic and land ecosystems in the United States. For example, if a revitalization project can be linked to habitat restoration or to protection and conservation of potentially affected ecosystems, USFWS is likely to get involved—under its Environmental Contaminants Program, USFWS

assesses the effects of oil spills, point- and nonpoint-source pollution, and hazardous waste contamination. In addition, USFWS undertakes remedial efforts to living resources in Superfund and brownfields cleanups. In other cases, although USFWS may not be providing direct resources or funding to a project, it may be called upon for technical consultation where relevant.

For more information see discussion of the U.S. Department of the Interior, U.S. Fish and Wildlife Service in Appendix I.

Community Organization and Educational Institution Environmental Programs

Community groups and local colleges can provide resources to conduct public outreach and to share information about environmental issues. Local government professionals should use all informal contacts with community groups to have information disseminated through newsletters and in public places. Likewise, schools for students of all ages can be used to develop projects and to create learning opportunities based on community issues and to teach students how the environment is a local issue.

Jamaica Plain Neighborhood Development Corporation and Boston Community Ventures, Boston, Massachusetts

By using a brownfields site, the Jamaica Plain Neighborhood Development Corporation (NDC), located in Jamaica Plain, Massachusetts, helped develop a \$14 million supermarket and state-of-the-art health center. Jamaica Plain NDC partnered with Boston Community Ventures, a private developer, and the Bromley Health Tenant Management Corporation. The supermarket and health center were built on the remains of a Boston shoe factory. The site had been passed over by developers because of preliminary estimates of a \$20 million cleanup. Jamaica Plain NDC conducted a thorough environmental analysis of the property in the early 1990's revealing the following contamination: four underground storage tanks, 600 tons of solidified sludge, and 38,000 gallons of contaminated water. This contamination and an additional 2.6 million gallons of contaminated groundwater were removed. The total price for the cleanup was \$2.4 million, well below the original estimated cost.

The city of Boston owned the site before Jamaica Plain NDC purchased it, and the city agreed to finance the environmental remediation by utilizing CDBG funds. Development of the property cost \$14 million. A \$500,000 grant from the U.S. Department of Health and Human Services provided the major equity for the project. Both Stop & Shop (the supermarket) and Children's Hospital (the health care center) also contributed significantly to the project.

2.6

Economic Development

Economic development is an important part of brownfields cleanup. Often, brownfields are abandoned properties with structures or other facilities that can be redeveloped for various economic activities, such as industrial and business facilities, restaurants, housing, or shopping centers. Local government officials must consider what sort of economic activity is needed and appropriate for their communities. Likewise, employment opportunities for and needs of local residents must be considered. All economic development should avoid environmental problems and improve the quality of life for residents.

Local Governments and Economic Development

Local governments often can provide economic subsidies and incentives to motivate private sector industries to redevelop brownfields and contribute to an area's economic revitalization. Potential incentive programs include tax increment

financing, tax abatements, area-wide environmental insurance, and cost underwriting for remediation. Some communities also work with private property developers to help them through the local and regional bureaucratic processes of assessments, permitting, zoning and other land-use issues that can delay a project for months. In this way, local governments are removing barriers to redevelopment.

Another important aspect of economic development is the appropriate management of spatial resources—especially in balance with environmental and planning needs. Communities must be careful not to create industrial ghettos with densely packed industries or businesses. Instead, they should create employment centers that feature a range of job types and require a variety of job skills. Communities must work hard to develop infrastructure to support the transportation or other needs of products and workers.

Economic development activities should be considered in balance with the aesthetic planning and environmental principles of the community. The local government should develop economic projects that match the work skills of its citizens.

The Dallas Brownfields Program, Dallas, Texas

The mission of the DBP is the economic redevelopment of Dallas real estate with perceived or real environmental contamination. The program is a resource that assists developers in troubleshooting and overcoming obstacles. The DBP also performs outreach and educational efforts within the community and the private sector, functions as a point of contact for developers, acts as a liaison between developers and other city departments, and identifies potential sites for redevelopment. Objectives of the program include:

- One-stop assistance in securing tax benefits and other related city assistance;
- One-stop assistance in securing city permits;
- Environmental regulatory assistance;
- Direction and guidance for entering into the state's voluntary cleanup program;
- Guidance in what to expect after selecting an environmental consultant for the site assessment; and
- Lending recommendations for brownfields.

Economic development must be considered in light of and as a contributor to the social and community infrastructure of the region . . . businesses must be good neighbors and support citizens in the same ways that citizens support businesses.

If the community is bringing in technology or industry that is new to the workforce, it should provide job training for its citizens. Likewise, economic development activities should provide job ladders and skills for workers. Economic development must be considered in light of and as a contributor to the social and community infrastructure of the region. In other words, businesses must be good neighbors and support citizens in

the same ways that citizens support businesses. For example, businesses should contribute to school activities and observe community traditions. In the best partnering atmosphere, all economic development activity will strengthen social and community activities, such as through appropriate job development. To gain productive and equitable economic development, local governments must pursue partners that have resources to help in creating economic and brownfields development successes. Local business groups, employment councils, and community development corporations could all be valuable partners in bringing economic development to brownfields redevelopment.

One important feature in brownfields redevelopment and downtown revitalization that cuts across agencies and redevelopment categories is that of public transportation. An efficient and well-used public transportation system reduces the use of cars and their negative effects on the environment. Beyond reduced automobile emissions, public transportation systems reduce the need for parking spaces, which in turn reduces opportunity for nonpoint-source run-off and increases a community's opportunity to create open spaces and that which enhance the environment and improve the physical landscape of the area. Public transportation also allows people who do not have cars get to work at places that they would otherwise not be able to get to.

State Governments and Economic Development

States can enhance the resources of local governments—including local governments' knowledge of the history and context of communities and local economic settings—with comprehensive technical assistance and larger-scale resources, such as tax abatements, loans and enterprise zones. State economic development agencies can provide larger scale training and evaluation for jobs as well as business incubation. However, in looking for assistance, local jurisdictions should not limit themselves to seeking partnership opportunities solely from state economic development agencies. Other state agencies, including human services, agricultural, environmental, and

Favorable Conditions for Redevelopment in Portland, Oregon

The City of Portland is in an enviable brownfields situation, if there is such a thing, because it has recently become one of the new hot spots to live in the United States. The city has seen an extraordinary influx of jobs and people over the past ten years and is expecting 500,000 more residents in the next five. Given this population and economic expansion, Portland's challenge is to manage its growth in a socially and environmentally responsible way, which it is making every effort to do. Local government has been preparing for this growth by creating an urban growth boundary (UGB), public transportation systems, and high-density housing options.

While the city has been calling old industrial properties brownfields only since 1995, it has actually been addressing the issue since 1969, when it developed its urban growth boundary to limit new development and protect the state's natural resources. The UGB separates urban and urbanized land from rural land. State law requires the inclusion of a twenty-year supply of land that may be urbanized inside the UGB's borders at all times. Urban reserves are lands outside the present UGB that are designated for future urban development. The UGB results in a densification of urban neighborhoods and redevelopment of inner-city properties.

Many of the new industries coming into Portland are technology industries. The city is remediating brownfields sites, rehabilitating buildings, and improving infrastructure to create attractive and functional buildings. It is also creating attractive housing and transportation systems to accommodate workers. All of the new housing in Portland must represent the general financial demographic of the city and be affordable. The City of Portland is attracting developers to its brownfields and leveraging resources from various city agencies, the regional government, the state of Oregon, and numerous federal agencies to accomplish its goals of long-term planning and careful growth.

community development, often have programs offering services and assistance that can be used for specific economic development projects.

The Federal Government and Economic Development

In addition to the range of state agencies that offer resources for local economic development activities related to brownfields redevelopment, many federal agencies also have a range of programs and resources that can be applied to specific projects. Certainly, EPA's revolving loan fund, although complicated in its implementation, can be useful for local governments in recruiting businesses to redevelop brownfields. EPA has also funneled funds to other agencies, including the Agency for Toxic Substances and Disease Registry (ATSDR) and the National Institute for Environmental Health Sciences (NIEHS), to develop job-training programs to educate and strengthen work forces in brownfields communities. In addition, EDA has a number of technical assistance and grant programs to assist local governments.

Environmental Quality and Economic Development in Oregon

The Oregon Department of Environmental Quality (ODEQ) and the Oregon Economic and Community Development Department (OECDD) work together to address the environmental and economic aspects of brownfields. ODEQ and OECDD staffs worked on a legislative committee to address brownfields issues. One of the recommendations from that committee was to establish a brownfields ombudsperson at OECDD. This person answers brownfields financing questions, and ODEQ staff members or brownfields clients can use the ombudsperson as a resource for any questions that they have about OECDD's programs.

OECDD has funding programs related to brownfields redevelopment. The programs are geared toward funding what statute defines as environmental evaluations. Site assessment activities are eligible. Remediation planning and remedial activities are not eligible. If a business has poor credit and is seeking private financing, OECDD's Capital Access Program can provide loan portfolio insurance, or the Credit Enhancement Fund can provide an individual loan guarantee.

Connecticut's Urban Remedial Action Plan

Connecticut's Department of Economic Development (CTDED) is involved in brownfields redevelopment through the state's Urban Remedial Action Plan. The program provides that CTDED acquire polluted properties, assume liability, and retain authority to lease or sell the property to a developer after the state has completed remediation. State bond funds are used to complete investigation and remediation of sites where the responsible party is unwilling or unable to complete the work. However, to be eligible for the bond funds, the site must be located in an enterprise zone and must be determined to have economic potential by CTDED.

CTDED is authorized to acquire and remediate a site under the following circumstances:

- The commissioner of economic development finds that the state owns the site or has the power to approve future site use after remediation;
- The commissioner of environmental protection is unable to determine the party responsible for the contamination, or the responsible party has not complied with remedial orders issued by the state; or
- The property is polluted and undeveloped or developed and abandoned, and the commissioner determines there is an economic incentive to remediate the property.

CTDED will provide loans to those developers and site owners participating in the state's voluntary program. Loans are granted based on factors such as anticipated commercial value of the property, future tax revenue, and economic development benefit to the community. As security, CTDED will place a lien on the property to cover the amount of the loan.

The U.S. Department of Housing and Urban Development is working very hard to meet the changing needs of communities that are working to revitalize their neighborhoods. HUD programming ranges from housing revitalization to low-interest grants and loans to technical assistance programs. Community Development Block Grants funds can be used very flexibly by local governments. HUD has also established a number of Empowerment Zones and Enterprise Communities throughout the country. The EZ and EC programs are based on the same principle of helping distressed low-income areas access tax incentives, tax abatements, and other economic advantages that will attract businesses and help community members develop their own businesses. The results of EZ and EC programs are the creation of jobs and increased economic activity in the neighborhood. The differences between the EZ and EC programs lie in the degree of aid the programs provide and the degree of

resources they dedicate to a community. EZ communities are considered to require a higher degree of aid and receive more resources than EC areas. Specific benefits include wage tax credits for employers, tax relief for business equipment purchases, tax incentives for brownfields cleanup, tax credits for school renovation, and priority status for CDBG funds. Other HUD funding resources are awarded on a competitive basis; they can be applied for through a number of avenues, including state, regional, and national HUD grants.

In trying to achieve economic development, local governments should not limit their scope. Often, improved transportation will bring new traffic to a neighborhood. Likewise, new schools, parks, and other community changes will create a new atmosphere and new opportunities for economic activity. In this light, local governments should see how they are able to creatively cooperate with federal agencies to combine resources to

HUD's Brownfields Economic Development Initiative

Brownfields Economic Development Initiative grants allocate funds to communities—that have already ascertained CDBG funding—to leverage toward additional brownfields redevelopment costs. BEDI grants are administered in tandem with a HUD Section 108 Guaranteed Loan, whereby CDBG funds become the collateral for that loan. Section 108 Loans are restricted to economic development, housing rehabilitation, public facilities, and large-scale physical development projects.

HUD requires that projects receiving BEDI grants have a significant degree of investment from other community organizations and stakeholders. In most cases, a 2:1 leveraging ratio is sufficient; communities able to leverage 5:1 or 10:1 ratios between local funding and HUD allocations are preferred. BEDI funds can support a wide variety of activities. For example, a local government may use BEDI funds to address site remediation costs, or a local government may use a combination of Section 108 and BEDI funds to acquire a brownfields property and convey the site to a private sector party at a price discounted from the purchase price. The redevelopment focus for BEDI-assisted projects is prompted by the need to provide security for the Section 108 loan guarantee in addition to the pledge of CDBG funds.

The purpose of BEDI funds is to minimize the potential loss of future CDBG allocations used to secure matching Section 108 Loans (the amount of a Section 108 Loan—and any future funding—is based on the remaining CDBG funding). In other words, by strengthening the economic feasibility of projects financed with Section 108 funds, HUD is increasing the probability that the project will generate enough cash to repay the guaranteed loan. In addition, by directly enhancing the security of the Section 108 Loan or by applying a combination of these financial risk-mitigation techniques, HUD encourages projects and activities that will provide near-term results and demonstrable economic benefits such as creating jobs and increasing the local tax base.

However, there are certain limitations on the use of BEDI grants and Section 108 funding: BEDI funds may not immediately repay the principal of a loan guaranteed under Section 108 legislation, nor may they be used to provide public or private sector entities with capital to remediate contamination. Instead, HUD encourages local communities to integrate projects proposed for assistance under HUD's BEDI and Section 108 program with other federal, state, and local brownfields redevelopment efforts.

achieve compounded benefits of neighborhood improvements.

For more information see discussion of U.S. Department of Commerce, Economic Development Administration; U.S. Department of Health and Human Services, Agency of Toxic Substances and Disease Registry and National Institute of Environmental Health Sciences; and the U.S. Department of Housing and Urban Development in Appendix I.

In most instances, state funding measures are more flexible than federal funds, meaning that they can be used as the local jurisdiction sees fit, whereas federal funds usually require a specific project outline and detailed plan for how the money will be spent before the money is allocated.

Such requirements are sometimes restrictive for local governments that need the funds and resources actually to develop projects and programs. Local governments often do not have enough staff-member time to dedicate to developing programs and writing complicated grant applications that they may not even be awarded.

The Private Sector and Economic Development

Private sector community members should not be left out of economic development plans. Local governments need to communicate frequently with local businesses and industries about the government's plans for economic activities as well as about the private sector's plans for changes or

expansions that will affect the overall economic health of the community. If the local government includes in its long-term development plans infrastructure or other services needed by the private sector to continue to contribute to the community, then the private sector can be confident that the local government supports the private sector's plans to grow and change. Local governments and community development corporations should also communicate with private sector organizations about economic incentives. Often, communities will develop economic incentives that are not necessarily the best alternative for businesses. For example, a business may be offered tax increment financing or a revolving loan fund when other commitments from the city, such as infrastructure or roadway improvements, would be more welcomed.

CDCs and community organizations should also be included in an area's economic development plans. These organizations, which sponsor job training, business incubation and other economic development programs, can learn what types of businesses a city is trying to attract and make sure that they are appropriately training citizens for potential jobs. Likewise, the CDCs and community organizations can relate back to the city what sorts of job skills and interests citizens have. Such skills and interests can be used to attract appropriate businesses to the community. In the same manner, colleges and universities are important economic development partners because graduates and students are important human resources to the city who should not be lost because of lack of appropriate jobs. Colleges and universities can suggest the sorts of businesses that will keep students in the vicinity and prevent brain drain to other areas.

2.7

Community Involvement, Outreach, and Education

Brownfields are disproportionately located in poor and minority communities that have historically endured industrial insults that are, at the very least, unpleasant to see, hear, and smell and, at most, life threatening. The effect of a single brownfields redevelopment on a neighborhood or community can be significant, bringing it much-needed jobs or services and removing blight. For the most part, brownfields redevelopment is a local issue. The great majority of properties that need redeveloping are single lots scattered throughout neighborhoods and in cities. Brownfields redevelopment the most directly and importantly affects the community interacting with it. Of course, this economic activity has ripples through a larger area but the most visible and tangible results are in the community at hand. For this reason, local governments and brownfields redevelopers should work closely with those communities in redeveloping brownfields. Local governments are making every effort to include and inform community members about brownfields redevelopment. However, including the community is often a more difficult task than it might seem.

Brownfields redevelopment directly affects communities in a number of ways. First, even though communities may not call such sites brownfields, the visual blight left by former businesses and industries concerns all communities. In addition to being visually unattractive, brownfields are potentially dangerous because they may still have toxic substances, may be inadequately secured and therefore dangerous to adventurous children playing around them, or may be attractive to criminals and drug users.

On the one hand, brownfields also represent the lost opportunities of work and the present blighted social and economic conditions of the neighborhood. On the other hand, redeveloping brownfields represents the potential for the

community, including new job training, new jobs, new commercial activities, and the absence of urban blight.

Barriers to Community Involvement

Many factors impede community involvement, including ineffective communication, insufficient resources, and a lack of understanding about the community's needs and issues. First, staffs tasked with redeveloping brownfields usually work in economic development or environmental protection offices and are not experienced at or familiar with community outreach and education programs. The staff members have skills in their particular fields and generally do not have skills in or professional knowledge about community development. Therefore, it is naive for an office without training in community programming to consider itself qualified to conduct it.

A second factor that makes community outreach more difficult is that populations living and working near brownfields may not be engaged in the civic process; thus, the typical "due process" of information dissemination and public notice may not adequately serve those largely poor and minority populations. For example, residents may not read the city newspaper because it does not represent their interests. Instead, they may depend on conversations at the local grocery store or laundromat for important news. Likewise, residents may not consider the city council member to represent their issues or to be their community leader. Rather, they may think of a minister, a schoolteacher or a successful businessperson as the real leader in the community because the effects of that individual's actions are more immediately realized than those of a city council member.

In such ways, communities are more directly influenced by local people, places, and events, which is precisely why brownfields redevelopment will be of interest to them. Because community members will not be familiar with the language of brownfields; with local government officials and agencies; or with complex economic, social, political, and environmental issues, materials related to brownfields must be presented to them in their own terms, in a familiar setting, and by people whom they trust. Therefore, some

Cambodian Mutual Assistance Association, Lowell, Massachusetts

In Lowell, Massachusetts, the Cambodian Mutual Assistance Association (CMAA) has turned one brownfields property and its building into a community and economic development center, complete with commercial fish tanks and hydroponic vegetables in the basement. CMAA envisions developing the building into a one-stop center for Lowell's Cambodian community. CMAA has developed several fine economic programs at its center. The fish tanks and hydroponics in the basement yielded 90,000 pounds of fish and produce in 1998. This food industry not only trains and employs people in maintaining the harvests, but it also supplies local grocery stores with affordable, healthy, and culturally important foods for the Southeast Asian population of 30,000 in Lowell. CMAA created the fish and vegetable program through a grant from USDA's Urban Forestry program, which supplied technical assistance and resources to the organization.

actions that local governments take to reach community members may not work. For those reasons, local government professionals can benefit from partnerships with community groups that are trained and familiar with a jurisdiction's communities.

Local Governments and Community Involvement, Outreach, and Education

Local governments must work with communities and partner community groups on a number of levels in redeveloping brownfields. First, they should provide education about brownfields, environmental contamination, and redevelopment issues. If appropriate, the local government should explain remediation processes and stages of redevelopment. Often, communities that have historically suffered industrial insults see themselves as victims and distrust government because they have not received the services that have been due to them. Careful information sharing and education can be the first step to mending ways between local government and residents. If successful, this dialogue could lead to greater civic participation and a mutual long-term invest-

ment between the community and the local government.

The second stage of community involvement is outreach and assessment. Local governments work with communities to assess their needs and resources in order to learn the best reuse of a property. In partnership with community groups, local governments can survey residents to learn more about their needs. For example, what kind of jobs are most suitable for residents, and what job or life skills do residents need to keep livable-wage jobs that provide job ladders and opportunities for promotion? What sort of commercial

business does the community need: a grocery store, a pharmacy, a clothing store, a hardware store? A single brownfields redevelopment project is not a panacea for all of the community's ills. So, community-wide assessments should include a ranking of needs. It does not make sense to build a high-tech factory to provide jobs in a community if residents are not skilled at that sort of work. Instead, the community should address the need for job training. Not all community needs are economically based; often communities need green or open spaces, or social service agencies.

Job training is often a third important step in redeveloping brownfields. Two levels of job-training possibilities exist. The first level involves educating citizens about environmental remediation and training workers to conduct remediation such as lead abatement, asbestos removal, and abatement of other toxic substances. This sort of training for residents will allow them to participate in the redevelopment of their own neighborhoods and give them valuable job skills and knowledge. The second type of job training involves life and work skills that allow residents to apply competitively for livable-wage jobs that have promotion opportunities. In this way, citizens will be earning wages and participating in businesses and can also reinvest in their communities.

Executive Office of Weed and Seed

The Executive Office of Weed and Seed (EOWS) within DOJ's Office of Justice Programs has been most active in brownfields redevelopment. Essentially, Weed and Seed is a strategy that weeds out violent crime, gang activity, and drug use and trafficking in targeted neighborhoods, and then seeds the area with social and economic revitalization programs. The Weed and Seed strategy recognizes the importance of linking federal, state, and local law enforcement programs with social services, the private sector, and community efforts to maximize the effect of existing programs and resources. Law enforcement activities constitute the majority of the weed portion of the program, while revitalization efforts that include prevention, intervention, and treatment services, as well as neighborhood restoration constitute the seed element. Community policing acts to link both the weed and seed elements.

DOJ incorporates EOWS programming into brownfields pilots by offering up to \$50,000 in flexible funding to be used at the discretion of local communities for brownfields activities. Weed and Seed funds can be used in brownfields for any of the following activities: conducting education and outreach to inform and involve citizens and businesses; building partnerships among stakeholders; planning community involvement or environmental justice initiatives; assessing and evaluating potential reuse sites; renovating existing facilities; fostering local job development and training initiatives; and assisting not-for-profit entities in economic development projects.

For more information see discussion of the U.S. Department of Justice, Executive Office of Weed and Seed in Appendix I.

Communication vehicles can range from posters in public offices to inserts in mailings to public education and outreach sessions at community centers.

State and Federal Governments and Community Involvement, Outreach, and Education

State welfare and health offices are often those with which community members are most familiar and already have established relationships. Therefore, it would be beneficial to use such agencies as a vehicle for communicating about brownfields issues. Communication vehicles can range from posters in public offices to inserts in

mailings to public education and outreach sessions at community centers. Likewise, partnering among state agencies such as the environmental department and the public health, housing, or community development departments could extend the reach of any one group trying to communicate a message. Such partnering also emphasizes to the public that brownfields redevelopment is a multifaceted issue that affects communities in numerous ways.

Local governments can find many partners from federal agencies to enhance community development programs. HUD is a familiar friend that is developing many new approaches to help communities address brownfields redevelopment. The U.S. Department of Justice (DOJ) is conducting programs to help brownfields communities. The Community Relations Service of the DOJ has a conflict resolution program that helps community groups, residents, business owners, and other stakeholders discuss brownfields-related issues with a moderator. The DOJ is also using its Weed and Seed program to address neighborhood nuisances such as abandoned buildings and crime. The program's goal is to "weed out" problematic elements and "seed" productive activities to enrich a neighborhood.

Community Development Corporations and Community Involvement, Outreach, and Education

Community development corporations provide many services that can spur brownfields redevelopment. The National Congress for Community Economic Development has outlined seven steps that CDCs can use in conjunction with their services to facilitate brownfields redevelopment.

- **Community Readiness:** CDCs must educate the community on how brownfields redevelopment fits with the community's overall goals and objectives for economic development.
- **Site Selection:** CDCs need to use their property-site databases to determine which properties are brownfields sites and which brownfields sites have the most development potential.
- **Buyer/Site Match:** The goal of brownfields redevelopment is to return the site to productive use. Whether a CDC plans to own the site itself or to form a partnership with another organization, it is important to match the developer with a site that will be best suited for its needs.
- **Environmental Assessment and Strategies:** CDCs need to determine the extent of potential environmental liability and the estimated cost of remediation before redevelopment can proceed.
- **Financing:** CDCs need to search for funding sources that may be available for redevelopment. Because of their nonprofit status, CDCs are eligible for a variety of grants and loans from the federal and state level specifically for brownfields redevelopment. Besides CDBG grant monies that can be used for brownfields development, HUD also offers BEDI grants that are used in conjunction with Section 108 loan entitlements. EPA offers a variety of brownfields development grants. Many states have also been proactive in creating grant and funding programs for brownfields development.
- **Negotiating:** CDCs should identify the needs of development partners and potential tenants and smooth over any roadblocks that could derail the development project.
- **Implementation:** CDCs must work with local government on needed infrastructure improvements and finalize financing of the property before construction or refurbishment can begin.

Community groups might include community development corporations that work to improve the social and economic lots of neighborhoods or ethnic groups. Other community-based groups that have the pulse of neighborhood activities and attitudes are faith-based groups, recreation centers, and local business organizations. Those groups represent the day-to-day activities and concerns of communities.

Isles, Inc., Trenton, New Jersey

Isles, Inc. (Isles), is a nationally recognized, nonprofit community development and environmental education corporation that revitalizes distressed communities in the Trenton area. Isles's goals are to address immediate challenges such as hunger, homelessness, underemployment and environmental decay by using long-term strategies that promote reliance and community empowerment. Isles works to broaden its effect by:

- Developing easily replicated programs; and
- Assisting other community groups and institutions in improving community-related public policy.

Isles's most significant contribution to the brownfields program, however, is through its work on community involvement and education about environmental contamination. Staff members found that one of the biggest challenges of working with communities on cleanup projects was that the engineering and legal language that surrounds the regulatory setting of brownfields remediation was impenetrable for lay people. In 1996, Isles initiated the Leadership Environmental Training Series (LETS) at the request of Trenton residents who felt they did not have enough education in about environmental and public health issues to productively engage in the decision-making process of a cleanup project. Isles had the foresight to know that interested individuals should be educated about community development issues in general before they were taught the specifics of environmental issues. Isles considered the community development education to be an investment that would teach students how to run meetings, meet public officials, and explore issue advocacy and general community education so they could return to their communities and effect changes.

LETS, which is now being used by organizations around the country, is a six-month course of study. Students meet every other Saturday afternoon, and classes involve guest speakers, such as the mayor of Trenton and other state or local officials, and field trips to contaminated properties in town so that students can learn first-hand the problems with these sites. Fieldwork also allows students to see economic development, affordable housing, brownfields and other related programs in action.

LETS students study local, state, and federal environmental agencies as well as specific programs. They are taught a great deal about regulatory language in environmental programs so that they can decode the alphabet soup that qualifies much of any conversation about the environment and economic development. In this way, students can be confident in their ability to learn and use the A(TSDR), B(CRLF);C(ERCLA)s of brownfields-related acronyms; to understand funding initiatives such as EDI and BEDI grants; and to form an opinion about the pluses and minuses of remediation techniques such as phytoremediation, a technology in use on at least one Trenton brownfields.

LETS students range in age from early twenties to elderly. Many of the students are retired citizens with the interest and time to invest in their neighborhoods. The LETS class is accredited at the New Jersey Institute of Technology and at Rutgers University allowing students to earn college credits for their work. LETS assignments reflect back to the community, so students are asked to apply some element of their coursework to their community.

An example of Isles's commitment to community involvement and education about brownfields redevelopment is Isles's work on the Crane site. Trenton aggressively pursued the industrial reuse of the eleven-acre site after it was acquired by the city, and it set aside \$200,000 for site cleanup and preparation. When the site was being marketed, a poultry processing facility became interested. The neighborhood was adamantly opposed to the notion of a poultry processing plant in the area, so Isles organized visits to other facilities run by the interested poultry company. As it turned out, the neighbors were actually quite impressed with the cleanliness and minimal environmental effects of the other facilities and began a more positive dialogue with the poultry company. For internal reasons unrelated to the site, the poultry company pulled out of the negotiations, and in 1997 two companies, including a food distribution firm,

broke ground on redevelopment of the site. The neighbors were well informed and involved in the site planning and now benefit from the addition of 150 to 250 jobs to the area.

By providing residents with this education, Isles is giving the skills and knowledge to community members that enables them to lead their own organizations. This education allows community groups a level of independence so that they can better use the resources of CDCs rather than rely on them for leadership. CDCs can then take the role of mediator, facilitator, and advise for community groups, and their meetings and events. This relationship makes for a stronger, more effective partnership between the neighborhood groups and the CDC. Isles is building the capacity of community groups to do their own work and advocacy—empowerment. Through the community empowerment generated by the LETS program, community groups have the tools they need to take their concerns to the local government.

Stamford (Connecticut) Police Department Seeks to “Weed and Seed”

The Stamford Police Department has been aggressively addressing the social issues of the brownfields community as well as issues of blight and abandoned buildings through a grant provided by DOJ’s Weed and Seed program.

Stamford’s program has sponsored after-school and summer activities with youth, focusing particularly on adolescents. In this program, police act as mentors and friends in recreational, educational, or safety activities. The Weed and Seed program also has an educational aspect where officers go into the schools and help youth with school projects.

The program has also sponsored a community walk where police officers and residents walk through the neighborhood and discuss questionable activities, problematic properties, and shady-looking individuals. The goal of the program is manifold. The first is to share information between community members and police officers. Another goal of the program is to publicly point out individuals and properties that are not meeting community expectations. Police officers can contact negligent property owners and have their blighted property secured. The Stamford Weed and Seed program also operates a safe house where community individuals can access city departments to get help with problems such as health, housing, or family issues. The Stamford Weed and Seed program also works with residents, city departments, and community groups to rehabilitate housing.

One example of a way that the Weed and Seed program helped community members address their problems was in dealing with local muggings. The community has a large population of Latin Americans who are laborers and get paid in cash. For the most part, these individuals did not have bank accounts, so they would carry large sums of money on them rather than accessing it in small amounts through automated teller machines. On weekends, when community members were out socializing and carrying money, muggings were a common occurrence. The muggings were done by individuals not from the neighborhood. The police understood that if the community members did not carry so much cash so regularly, they would not be targets of crime. Weed and Seed officers worked with local banks to help the Latin American community develop bank accounts. Establishing a bank account was more complicated than usual because many residents do not speak English and do not have appropriate identification, such as driver’s licenses, birth certificates, or social security cards. The bank waived its usual requirements and helped community members establish bank accounts. This sort of program serves many functions beyond reducing the potential for crime. The residents are establishing a banking history and could be starting savings accounts that will lead to potentially greater investment in the community through purchasing houses or opening small businesses. Such an activity also increases the trust among community members, local businesses, and the police.

2.8

Public Health

Brownfields redevelopment is a public health issue in numerous ways. First, the immediate threat of contamination at a brownfields site and the potential health threats during site remediation are public health issues. In a larger sense, the social and physical condition of a neighborhood that has endured industrial insults and urban blight needs to be examined.

Local Governments and Public Health

Local governments and community groups can partner with public health agencies to use their expertise, skills, and knowledge to best address any potential public health issues without creating a scare while ensuring long-term health for residents. Local public health agencies should be included at all levels of brownfields redevelop-

ment ranging from assessment to community outreach and education efforts to worker training to the redevelopment process itself. It is very important that health professionals be included in all discussions about the brownfields so that they can address any potential obstacles in advance. It is important that health professionals be advised of the environmental assessment and information analysis, so that public health risks are measured and analyzed as well as environmental ones. More efficient assessments will lead to faster redevelopment because all factors can be measured at once instead of making numerous, expensive tests.

Health professionals should also be included in all public meetings and outreach sessions so that they may convey the safety of the redevelopment process and answer any questions about potential public health effects. Health professionals should continue long-term work with community groups and local government representatives to monitor the site and the community for any potential hazards that may have been overlooked.

U.S. Department of Health and Human Services

The U.S. Department of Health and Human Services (HHS) is the principal agency for protecting the health of citizens. The Agency for Toxic Substances and Disease Registry and the National Institute of Environmental Health Sciences are two divisions within HHS that have been especially engaged in brownfields programming.

ATSDR was created through Superfund 104 legislation to reduce exposure and to prevent the adverse effects on human health and the diminished quality of life that are associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution present in the environment. ATSDR's activities include public health assessments, applied research, emergency response, and education. ATSDR's brownfields work is administered through the Office of Urban Affairs, which provides leadership in the areas of environmental justice, brownfields, and minority health issues.

HHS also strives to reduce human illness through investigation and understanding of health issues resulting from environmental causes. To reach this goal, NIEHS conducts community outreach, prevention and intervention efforts, research, and education. NIEHS supports the brownfields initiative through its involvement with worker training, including the administration of the Superfund Worker Training Program, and through research conducted by the Superfund Basic Research Program (SBRP). NIEHS established a network of contacts related to worker training.

See discussion of the U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry and National Institute for Environmental Health Sciences, in Appendix I.

Lowell Health Department, Lowell, Massachusetts

The Lowell Health Department (LHD) has a one-year ATSDR grant for \$70,026. The Lowell Department of Planning and Development (DPD) has contributed an additional \$22,000 to the effort. The city received the grant through the Brownfields Showcase Communities Initiative and used funds to build the capacity of LHD to address brownfields issues. The grant was a collaborative effort between LHD and the Lowell Department of Regional Economic and Social Development of the University of Massachusetts (UMASS), Lowell. Its goals were:

- To build a core competency of environmental health and community outreach skills in the LHD;
- To gather information about brownfields sites' hazards and their relationship to community health;
- To develop outreach, educational, and programmatic materials and tools for community members;
- To provide community members with skills and tools to assist in community-based data collection and education;
- To develop citywide institutions to ensure meaningful community participation in the planning of brownfields site development.

The grant is being implemented by the LHD environmental coordinator, the regional ATSDR representative, the Massachusetts Department of Health Education Coordinator, the DPD Economic Development Director, and UMASS. The team developed a technical training program to introduce city staff to environmental health issues on redevelopment projects. Through the ATSDR grant, LHD has developed strong collaborative relationships with various state and federal environmental and health agencies that have provided important technical resources. Important contacts include: ATSDR, EPA, the Massachusetts Department of Environmental Protection, and the Massachusetts Department of Public Health.

Through the grant, the city has convened a Community Health Advisory Board to identify and address community interests regarding brownfields. The advisory board consists of representatives from neighborhood groups. The board, in coordination with LHD and DPD, will conduct a community needs assessment, using tools developed by ATSDR and the National Association of City and County Health Officials to establish a baseline measure of community brownfields knowledge and to identify the community's priority health issues.

One big step that LHD is taking is coordinating its efforts with DPD and the Massachusetts Department of Public Health in conducting assessments and reviewing assessment data. Currently, much of the data collected in environmental assessments cannot be applied to health studies because it does not measure qualities that health studies need to measure. The study's goal is to conduct a single assessment that will measure everything needed by federal, state, and local agencies to meet environmental and public health concerns.

State and Federal Governments and Public Health

State health agencies are well-equipped to work with local health offices and local governments to conduct health and education campaigns about brownfields. Since brownfields largely affect poor neighborhoods, state health officials can create the same kind of targeted information campaigns

that they use for lead poisoning and asbestos. That is, the health department can conduct an information-sharing campaign about brownfields issues even if such issues have not specifically emerged in a community. A health department also can conduct education sessions with its peer agencies on the state level, such as the environmental department. In this way, the agencies can

City of Clearwater and Pinellas County Department of Health, Florida

The City of Clearwater's brownfields program and the Pinellas County Department of Health have taken steps to work with a community member to establish a free health clinic and resource center for the North Greenwood community of Clearwater. The clinic is in a low-income and public-assisted residential neighborhood and is funded through state brownfields appropriations. Florida's brownfields programs were all but eliminated from the state budget, but the building of this clinic was one of the few items that the Florida State Legislature and the governor did not cut. The building will house a free clinic, an educational resource and training room, and a community room for social and other positive and health-oriented programs. Florida A&M University is also interested in placing a satellite pharmacy in the center.

The city holds the title to the brownfields property for the clinic and leases the property to a community member who is a nurse and serves as the gatekeeper and leader of the program. The city members involved in this project are also interested in increasing the capacity of neighborhood outreach through the HUD Healthy Homes project.

discuss the public health implications in brownfields.

State offices have expertise and resources to conduct comprehensive campaigns that include assessments of brownfields sites as well as of nearby community members and other individuals who may have been exposed to harmful contaminants. State health agencies can also work with state environmental departments to better coordinate health, environmental, and other scientific testing, ensuring all avenues of interest are assessed in the most efficient manner and saving time and money in the redevelopment of brownfields.

Many federal agencies are working in creative ways to address the known and potential public health implications of brownfields. ATSDR has made funds available to communities to conduct public outreach and education sessions about public health effects. NIEHS is also conducting health education and job training for remediation occupations where students learn about the public health hazards of brownfields and contaminated substances.

2.9

Coalition Building and Relationships

Given the increasingly multifaceted nature of brownfields redevelopment and the relative newness of such approaches among governmental entities, it is no surprise that one of the biggest—and unexpected—challenges facing brownfields professionals is building coalitions and fostering meaningful relationships among stakeholders. These sorts of challenges reveal themselves in a number of ways for all stakeholders and governmental entities. Types of issues include intragovernmental and intergovernmental coordination; staff turnover; community outreach; stakeholder involvement from the private sector, nongovernmental organizations, and community development corporations; and management of expectations among various stakeholders.

Coordination Issues

Brownfields redevelopment involves a series of exercises in coordination. Coordination is important not only among governmental entities, but also among resources and programs. Research indicates that one of the biggest barriers to success in coalition building and partnering is a lack of coordination among stakeholders on many levels. The more multifaceted and inclusive the program

The communities and agencies that have produced the most successful brownfields programs have, by and large, conducted the most widespread coordination and buy-in.

is, the more staff, stakeholder, and resource coordination it requires. However, the more time that is put into coordination, the greater the benefits for the brownfields community and all involved stakeholders.

Intragovernmental Coordination

The most significant barriers to more efficiently redeveloping brownfields are those communities generate themselves. Likewise, federal agencies and departments often create the biggest hurdles to fully effective collaboration. The nature of the intragovernmental challenges affecting both local and federal governments is similar. Strong territorial senses, different cultures of work, and different priorities among entities seem to be the three barriers to successful intragovernmental coordination.

Territorial Tendencies—“Turfiness”

Local, state, and federal agencies and departments tend to carve out specialty niches and resource bases needed to develop expertise and make programs run well. Departments and agencies do not easily concede such power bases to work on new projects or to work with other departments. This situation can create turf wars that obstruct the larger government mission to solve problems. Proper intragovernmental coordination among local, state, regional, and federal government agencies can reap benefits far beyond what is sown in time or resources.

Stamford, Connecticut, has been able to avoid turf issues and has realized great success in the depth and breadth of its brownfields redevelopment by coordinating activities with many city departments, community groups, and public and private sector organizations. Stamford’s programs address many economic, community, and environ-

mental issues. Each office that contributes to Stamford’s brownfields project does so within the context of its own programs. For example, Stamford combines the public safety component in brownfields neighborhoods with other citywide public safety initiatives instead of creating a new program or department. The Stamford Police Department maintains communication with the community development group and other municipal offices to coordinate comprehensive activities with programming tailored to brownfields neighborhoods. Similarly, in Glen Cove, New York, strong coordination among city departments has been achieved because the mayor has a direct role in many of the brownfield efforts and has made interagency cooperation a priority of his administration.

Differing Work Cultures

Agencies and departments often want to work together and have the best of intentions and full support in that endeavor; however, the cultures of the workplaces are not complementary, and progress is delayed while agencies come to agreement, official or otherwise, about how work should proceed. Sometimes two departments with seemingly compatible goals will struggle over the bureaucratic details of how to implement a program according to the authority of each agency. Several federal agencies have even had difficulties developing basic memoranda of understanding (MOUs) that simply state they will work together on brownfields endeavors. Other agencies have not been able to settle on an administrative mechanism to transfer funds for coordinating joint programs, even though top agency leadership wishes to do so. In spite of the best intentions among agencies, such details can disable a system.

Differing Work Priorities

Another challenge to intragovernmental coordination is differing priorities among agencies or departments that affect their abilities to deliver resources for a cross-cutting brownfields effort in a community. Departments focus on one objective without being able to consider how the goals of another department can be met at the same time. An example is the perception that economic development and public health must proceed

City of Los Angeles Brownfields Team

Working through the city's complex governmental structure, Los Angeles (LA) created a tri-partite team to tackle brownfields redevelopment. LA's process is a good model of intradepartmental cooperation that brownfields programs of all sizes can adapt to their own needs. The LA experience also facilitates strong external partnerships with both private sector and community stakeholders.

The Brownfields Executive Team provides the essential leadership and direction of the city's brownfields program. The team includes the general manager of the Environment Department, the deputy mayor for economic development and the director of the Community Redevelopment Authority. These team members meet quarterly to consider various policies and brownfields project issues.

The Resource Team is made up of senior level staff members who implement the city's brownfields programs and policies. They make key recommendations to the Executive Team about the program and demonstration projects.

The EPA Intergovernmental Personnel Assignment (IPA) serves as the city's brownfields coordinator or program manager. The coordinator works closely with senior staff from the Community Redevelopment Authority, the Mayor's Office, and the Environment Department, as well as with the City Council's legislative analyst. The IPA also oversees the city's Site-Specific Brownfields Team. This team manages LA's brownfields demonstration projects and works on the cleanup and reuse of each site.

Three levels of intracoordination are unique to LA. The Executive Team provides most of the political leadership and has direct communication with the mayor and city council. As a result of the Executive Team's efforts, LA designed its own Request for Proposal (RFP) process, through which each city council district is eligible for one brownfields demonstration project that is supported by the city's own revitalization fund. While the Executive Team monitors political issues, the Resource Team implements the policies and programs. It manages the city's revitalization fund and applies for federal assistance and grants. As a benefit, each team member becomes familiar with the language and perspective of the other city departments. This interdepartmental exchange helps each member develop a sense of ownership in the brownfields project. With more than twenty-six different city departments, better coordination further enhances the city's credibility and relationship with community groups and brownfields developers.

down different programmatic tracks. Staffs of local public health departments have historically believed that they were excluded from early brownfields discussions because other stakeholders feared that unnecessary health concerns would be raised and would delay projects. Local health professionals, however, believe that early involvement allows them to make important contributions that can expedite redevelopment by answering questions and addressing issues sooner rather than later.

The Program Champion

One of the strongest antidotes to intragovernmental breakdown is a program champion and executive-level support for brownfields reuse. A

local brownfields advocate who coordinates the multiple aspects of redevelopment, including cleanup, public health, infrastructure, education, and community and economic development, will realize better results than one who assumes coordination will happen on its own. Coordinating these aspects also requires a great deal of organization among local agencies and groups, which each have a different expertise and different resources to share. This coordination requires effective communication, vision-sharing, and logistical planning to include all stakeholders with consideration for their differing priorities. In addition to coordinating people and places, a brownfields coordinator must become a champion

for the effort, one to whom others can look for leadership and inspiration in achieving the final goals of redevelopment, rallying support, promoting the program, and maintaining the overall vision. In a sense, the coordinator should also be a coordinator of morale on the project. The federal, state, regional, and local brownfields programs that have experienced the greatest intragovernmental coordination success can often point to one individual or a small group of individuals championing the cause.

Executive-Level Support

In both local and federal governments, the support for brownfields and the ability to corral resources and finally realize results depend heavily on assistance from top leadership and executives. Such help goes a long way toward expanding the depth and breadth of partnerships for the program. City managers and mayors can become important champions of brownfields reuse and can offer the publicity and authority to a program that staff members need for building coalitions and mining resources. Also, government and community executives have access to other executives and can use personal relationships to promote the brownfields agenda. Likewise, obtaining buy-in and participation from private sector entities that have good standing or that are leaders in the community can benefit a brownfields project. Brownfields coordinators, private sector representatives, and federal staffers often credit brownfields coordinators with having the greatest influence on a project. Obtaining their participation can be a key role for a local mayor or city manager—or even a high-ranking federal agency executive—to play. Local and federal agency staff members who deal with brownfields on the ground level have noted that private sector validation of their projects has been critical in advancing broader brownfields reuse strategies.

Team Effort

Effective coordination of local staff along with executive-level support will help create a strong brownfields team working on local issues. The team effort is further enhanced in programs where players' responsibilities are clearly defined and articulated. Team efforts benefit from clear com-

munication and regularly scheduled meetings that allow all players to inform each other about their own activities and to seek the help and support of others in particular facets of brownfields redevelopment. These meetings also serve as an important opportunity to coordinate activities and move forward on long-term planning.

Intergovernmental Coordination

Many stakeholders become frustrated when they cannot effectively communicate and coordinate with various levels of government. While coordination within supporting agencies and city departments presents its own set of challenges, vertical coordination across all levels of government (local, state, and federal) illustrates the inherent challenges of the process of governing. At the local level, many brownfields projects are overwhelmed by the diversity and complexity of federal agencies as well as by the specific practice and protocol of those agencies. Many communities are familiar only with EPA's process; others have extensive experience working with one or two federal agencies and mistakenly think such knowledge can easily transfer to working with other agencies. Even many of the federal partners are learning about each other's requirements for the first time. As brownfields redevelopment projects continue to embark into the uncharted territory of interagency collaboration, unanticipated obstacles generate frustration, especially among the local governments. Conversely, many federal staff members remark on how much they are learning about the variety and complexity of local governments. Similarly, a federal staff member's knowledge and experience with one sort of local government or agency rarely transfers to another.

Differing Protocol, Programming, and Interest

The factors that seem to influence this issue the most include a lack of understanding about the procedures of the governmental body, a lack of information about needs and programs, and a lack of coordination among federal, regional, and local entities. Community groups and local agencies that believe they are eligible for brownfields redevelopment programs are often frustrated by

the lack of communication or the conflicting information they receive about such programs. They are also confused and frustrated by the numerous funding requirements and restrictions. Local governments feel they are entitled to funding but may not understand how the brownfields projects fit into funding decisions or what policies come to bear on those decisions. Similarly, federal agencies are aggravated by local governments and communities that do not use the appropriate channels (such as going through regional offices or municipal planning organizations) to apply for funding. Federal agencies are sometimes surprised and frustrated by local governments' lack of long-term planning and high demands for funds. As a result, many agencies will not provide funding for a project without proof that it has been well thought out and that the local government is not just jumping at an opportunity for funding. Moreover, no agency will provide funding for a project that does not meet its own eligibility and process criteria.

Coordination of Federal, Regional, State, and Local Entities

Federal agencies communicate with their regional offices with varying degrees of success. In instances where agency headquarters make direct efforts to reach out to regional offices and bring them into the brownfields projects, communities and the regional offices report excellent working conditions. Local governments that coordinate closely with regional offices can more easily access technical assistance and tap into programs than those local governments that only communicate with the Washington, D.C., offices. The most helpful regional offices are those with staff members who are knowledgeable about general brownfields programming and applicable agency resources. Regional offices that routinely conduct public outreach are especially key in assisting local brownfields programs. However, some federal agencies have a decentralized approach to their programs and do not direct regional offices or state recipients of resource allocations. As a result, regional participation can often be lacking in certain brownfields project efforts. In such a situation, brownfields practitioners are often

confused because regional staff members are not informed about their projects or able to help the local government. This decentralized approach makes coordinating at the local level even more difficult because no systematic strategy exists to involve the regional offices, nor are communities instructed on the best approach to such an agency.

Clear Statement of Goals

Many brownfields-afflicted communities that succeed in managing intergovernmental relations make effective use of the kick-off meeting, held shortly after project goals are drafted, or convene substantive working meetings early in the process. Some communities use the kick-off meeting as an intergovernmental, multi-stakeholder event to bring together local, regional, state, and federal participants to celebrate the award and to discuss the prospective project. Communities can hold the meeting for whatever purposes they see fit. Some choose to bring all stakeholders together and discuss specific contributions and resources that each can bring to the project. In some communities, the meetings serve as a positive introduction of the players, leaving everyone comfortable to call upon the others for help and ideas. In other communities, the meetings take a tone more akin to a public announcement or a political opportunity rather than a working event. Following the models of the kick-off meetings, many communities hold a number of interagency meetings throughout the course of projects to discuss progress of the project and to learn what resources agencies might contribute.

Involvement of Correct Personnel and Maintenance of Contacts

Involving stakeholders and government entities early and often leads to successful coalition building and partnering. Repeatedly, stakeholders at all levels say that frequent communication and involvement allows them to contribute to the brownfields process and to understand where projects are headed. In this way, a representative from a federal agency can provide technical assistance in developing a project or advise the community about ways that it might be able to take advantage of funding opportunities before the project is fully developed.

Federal-Level Coordination

Brownfields redevelopment projects require a great deal of horizontal coordination among agencies and stakeholders on the federal level, as well as vertical coordination from the federal regional offices up to headquarters and down to the state and local levels. The coordination in Washington, D.C., is very complex because, like local agencies and organizations, federal counterparts have their own cultures and procedures that must be understood and followed to engage in productive partnerships. This complexity carries over to the regional and area office levels. Despite the best intentions for coordinating efforts, integrating efforts and the developing of working partnerships among federal agencies can be a struggle. Although a number of successes have been achieved, including the development of interagency MOUs, many federal partners have difficulties working together because the structure of the federal government does not lend itself to interagency cooperation, and many legal, technical, and political barriers stand in the way.

At the federal level, HUD, EDA, USACE, NOAA, and EPA have established cooperative working relationships and have good communications among their federal, regional, and local offices. These agencies have also experienced a high degree of cooperation with each other, overcoming obstacles early in national brownfields initiatives. Paying close attention to expediting working agreements at top administrative levels and ensuring that they are conveyed to the middle levels in federal agencies can lead to productive partnerships. In developing partnerships, issues that specifically need attention include facilitating intragovernmental personnel assignments; arranging cooperative and shared funding sources, and developing resources and joint projects.

Partnerships that develop and commitments that are made among key federal partners in Washington, D.C., do not always trickle down to the regional or area offices. Some field staff of federal agencies may not know that peers from other agencies are also working on brownfields issues at the regional and local levels. Better

Community Roundtables: Meeting Face to Face

One important way that brownfields redevelopment efforts can include as many contributors as possible is through the roundtable process. Many communities with brownfields have developed community roundtables and federal roundtables. In this process, practitioners come together with peers or federal representatives to discuss the tools, resources, and ideas of each stakeholder. Attendees learn about brownfields from the perspective of all of the other interests present and have the opportunity to share their own perspectives on the issues. This sharing allows the group to develop an agenda where representatives can collaborate on projects. Roundtables can also serve as peer enforcement where attendees are pressured to ante up resources and assistance toward the cause. Roundtables that bring together many stakeholders at once also facilitate communication and coordination in a brownfields project.

communication through partnerships would enable field officers of a federal agency to learn more about other agencies' programs and to gain an understanding of how the regional offices can work together. Agencies that set a high priority on regional interaction tend to have an easier time coordinating efforts and providing technical assistance and funding at the local level because the regional staff members are closer to sites, resources, and stakeholders. As a result, regional staff members are often better suited to make recommendations and provide technical assistance than the staff in the Washington, D.C., headquarters office.

A federal agency's success in coordinating its own brownfields activities depends on several factors, including interest and resources at the regional levels, support for brownfields at the executive level, and the stages of other community redevelopment projects across all brownfields projects. The ability and interest of a federal agency's regional offices to support brownfields projects often influence the amount of work that can occur within a community. Regardless of how enthusiastic a staff member at any agency is about

Federal Coordination Councils: Filling in the Gaps

Under the guidance and leadership of the regional administrators and agency directors in San Francisco, the principal federal agencies (i.e. EPA, HUD, EDA, USACE, and NOAA) formed the Bay Area Coordinating Council. The council meets regularly to discuss common issues confronting the delivery of federal services to communities within the greater San Francisco Bay area. The meetings include participation by the regional directors as well as the middle-level federal agency managers. From time to time, the council targets a particular issue or community. For example, at the request of the EPA IPA and HUD Community Builder from the East Palo Alto, Brownfields Showcase Community project, the council selected the community of East Palo Alto as one of its targets for increased federal help. Federal managers in other regions should consider the coordinating council model as a means of improving and enhancing communication among federal agencies at the regional level.

brownfields and interagency cooperation, if the staff member lacks a directive or an indication of support from an executive or appointed official in the agency, or if other initiatives are given a higher priority, he or she may not dedicate many resources or much time to the brownfields projects. Some agencies that have not participated in brownfields initiatives as fully as expected have not had support from executive or elected officials.

Regional differences also hamper coordination among agencies. For example, EPA has ten regions, and EDA has six. Thus, organizing interagency meetings of regional staff is difficult because regional boundaries or headquarter cities are not the same across federal agencies.

2.10

Preventing Staff Turnover

An event as routine as staff turnover has a tremendous effect on brownfields programs. Nearly every brownfields-afflicted community and many

federal programs suffer some staff turnover. No striking patterns or special reasons for turnover are apparent but lasting effects on community projects are often similar. In projects that depend so much on coordination and communication among stakeholders, changes in staff—no matter what the reason—undermine personal relationships and trust building. Thus, local governments must seek to prevent and to develop intermediary programs to deal with the possibility of staff turnover.

Position Vacancy and Project Delays

The departure of a staff person has some expected effects on a program, such as the ordinary delay of everyday work because of the vacancy and subsequent orientation of a new staff member. However, this delay may be compounded because there are so many interrelated factors involved in brownfields redevelopment. A delay in one component may have an exponential effect on the entire project.

Internal and External Reorientation

Given the newness and multifaceted nature of brownfields programs, staff turnover has other unforeseen effects. For example, because most brownfields programs are relatively new, a single person's departure can remove a great deal of institutional knowledge. Often, because the programs are not formal or institutionalized, the knowledge and history that is departing with the staff member is all that exists. The departure also seems to affect relationships in a number of ways. Working partnerships, information exchanges, and idea sharing are all greater than the sum of their parts because they represent collaborative work and trust building that cannot be replaced as quickly as an individual. Projects, deals, and relationships with communities all seem to suffer because of staff turnover. A staff member's knowledge and technique in dealing with people and issues are usually not documented in the files of the program. Such personal touches are drawn from experience and cannot easily be taught to a new staff member but are important to the success of the program. Similarly, staff turnover and new personalities and working styles can undermine the confidence of stakeholders. All of these

factors, coupled with the natural lag time in hiring and orienting new staff, can cause a project to lose momentum in stakeholder involvement and in coordination of resources.

For example, when a brownfields coordinator leaves, current and potential brownfields projects may be delayed. At least initially, developers will not have a comfortable, familiar contact in the city government to work with them and to expedite processes such as permitting. Also, the developers will have lost their liaison with the community and other local government staff, and it takes time to identify a new person who brings the same level of comfort and trust. The new coordinator will have to become acquainted with the local government offices as well as community groups before undertaking outreach activities, which further postpones any developers' meetings with community members. The upshot is delayed completion of the project and increased time that funds are tied up in the process rather than being recouped through successful reuse of the site.

Staff turnover in federal and state agencies and at the regional level also affects individual brownfields programs for the same reasons.

Knowledgeable Staff and Effective Contingency Plans

The communities that have best responded to staff turnover have benefited from their own positive communication practices, where staff members are aware of what others are doing. These practices are strengthened through regularly scheduled meetings and by creating and maintaining effective files and notes. Such communication and organization build a high level of trust among staff members and make them better able to respond to change. Flexible staffs with good communication systems are also most likely to create effective contingency plans where individual work plans change to accommodate a staff member's departure.



2.11

Expanding Community Involvement, Outreach, and Education

Staff capacity, language and culture barriers, community knowledge of issues and the civic process, community organization, and buy-in from other stakeholders are all challenges facing brownfields projects. All brownfields projects recognize the importance of community participation, but programs have varying difficulties integrating community outreach with other directives of the program. For example, brownfields staffs that are housed in economic development departments are generally evaluated in terms of traditional economic benefits, typically measured in sites remediated and redeveloped and in jobs created. Programs in these offices have expertise in economic development and receive professional support as well as guidance and pressure to foster it. Given the departmental mission and expertise, the department may not have the expertise to reach out to the community or be given the time, resources, or support to do so. Many brownfields practitioners realize that community outreach and education are difficult and require a specific set of skills and training. Likewise, administrators are learning that community involvement needs to be part of the long-term planning for brownfields; it is not an issue that can be attended to as an afterthought.

The lack of outreach and the underuse of community groups cause many problems. First,

they create bad feelings because the community, which is almost always distressed and may be in a low-income, ethnic minority neighborhood, feels that it is being overlooked and not being consulted about activities that directly affect it. Second, the community is an integral part of the environment that is being redeveloped. Therefore, by not consulting community members, an important aspect of the environment is being overlooked. Last, most communities have organizations and leaders who have important skills and contacts to contribute to a brownfields program. Many brownfields communities are learning that including community members' goals in the planning process strengthens the project and makes for better and more comprehensive redevelopment.

Community groups or organizations are often contacted well after the redevelopment process has begun and therefore cannot contribute substantively to the planning or decision-making. In these cases, citizens and community groups do not perceive their inclusion in the process as sincere. Rather, they feel as though their inclusion is meant as an appeasement. These actions could cause the community to not take the brownfields redevelopment process seriously and, therefore, to not stake their own resources in it.

Insufficient Staff Capacity

Many brownfields coordinators quickly realize that they do not have the staff capacity—including the knowledge, resources, or time—to effectively conduct community-based outreach and education efforts. The most effective community outreach and education efforts in the brownfields redevelopment projects are accomplished when staff members work closely with community organizations that specialize in community development. Communities that do not acknowledge the special skills and expertise that community outreach and education require, or that try to conduct all of the outreach work themselves, seem to struggle continually with community relations and are not able to use the community as a tool in the redevelopment process. In addition, city/community organization partnerships work best when a detailed plan of action and goals for community outreach and education are put into place.

Language and Cultural Barriers

Developing expertise or finding appropriate groups to conduct outreach is not always easy in communities where there are wide cultural and language differences. Organizational rivalries may make it difficult for a community to work with certain groups. Institutional differences are often deeper than they appear and are based in a history that predates their interactions with the current brownfields issues. For example, some immigrant communities have a deep-seated distrust of governments rooted in experiences reaching back to their native countries. Other neighborhood groups feel that government entities and institutions have repeatedly discriminated against them. Such groups are reluctant to fully participate or divulge information for fear that such information may be disregarded or be used against them. Other communities have not fully participated in civic processes or worked with diverse stakeholders before and, therefore, expectations and behaviors are not well established in those communities. In practical terms, many communities are consumed with numerous issues, including brownfields, and have difficulty giving each issue the attention it needs, leading to varying levels of public participation.

Level Of Community Knowledge and Organization

Community groups are often at a disadvantage because their knowledge-base of the issues surrounding brownfields is very limited. In addition to basic environmental facts, community members are often not well versed in land-use planning, civic participation, and a basic knowledge of government and its programs. Local brownfields staffs that have conducted a widespread orientation to help communities learn this information often achieve greater success than those that do not. As previously mentioned, Isles, Inc. of Trenton, New Jersey, is a community partner working to reach various groups and individuals among the general public. Isles uses its Leadership Environmental Training Series to not only compound its community outreach efforts through educational and organizational training, but also to provide and receive feedback from the citizenry of Trenton.

Stakeholder Buy-In

In some communities, private sector developers conduct their own community hearings to determine land-use goals and to gain general consensus for development from residents and business owners nearby. Developers often work with brownfields staff members to maintain high levels of communication and to contribute to community goals as they can. As would be expected, working relationships in these situations are more cooperative than in situations where community input is not sought. In other communities, working relationships between community groups and the private sector are stressed. In some communities, the private sector does not believe that the community has a place at the table where redevelopment is negotiated because the community does not understand the ins and outs of the development process and is not a financial participant in the process. This sort of attitude fosters distrust between the two stakeholder groups. The poor working relationships often pressure the entire stakeholder process, making stakeholders feel that they need to choose sides.

2.12

Increasing Stakeholder Involvement

In addition to conducting appropriate and effective community outreach and education, brownfields programs are facing challenges in increasing stakeholder involvement from the private sector, nongovernmental organizations and community development corporations. Many programs have not effectively conducted the extensive outreach and coordination required to muster the involvement of a broader spectrum of stakeholders.

Private Sector and General Public Reservations

Communities appear to have varying success in reaching organizations and groups that have important resources to share but that are not on the list of usual players. Community development corporations, faith-based organizations, founda-

Foundations Provide Support in Providence, Rhode Island

The city of Providence, Rhode Island, brownfields program is focusing on building a greenway around parts of the city. That project's staff has acquired funding from the Urban Parks Initiative of the Lila Wallace Reader's Digest Fund and has acquired significant technical assistance from the Trust for Public Lands. This support from foundations is important to Providence because the greenway project is not creating any direct economic activities, so fewer sources of federal funding could be applied to it. For example, revolving loan funds and Section 108 loans would not be prudent for the city to take on in this project because the greenway will not be realizing money from the redevelopment that could be allocated to repay the loans. In addition, HUD Community Development Block Grant funds could be applied to the project. Increasingly, participation of foundations and nongovernmental organizations is crucial to the success of these sorts of non-economic development projects.

tions, and nongovernmental organizations are all players that can be better used by brownfields communities. CDCs often have ongoing programming, effective communication with citizens, and an established reputation that they could contribute to brownfields redevelopment. Many times, CDC staffs have training and expertise in many of the educational and outreach efforts that brownfields coordinators are trying to implement. Likewise, leaders of faith-based organizations often serve as the informal leaders in their communities, and their endorsement of projects and programs will be valuable when seeking community support. Foundations and other NGOs can offer important resources and technical assistance to communities. Foundations, ranging from local to national, increasingly specialize their interests and grant programs, and many have categories that complement brownfields redevelopment.

As local demands for brownfields funding exceed available federal resources and as communities seek more non-economic development reuses for properties, involving other stakeholders will become increasingly important to develop resources and support for green spaces and other

redevelopment uses. Some communities are actively looking at other community, regional, state, and national organizations that have resources to lend to brownfields redevelopment.

2.13

Managing Expectations

One very simple, but important, lesson that many brownfields communities, as well as local, state, regional, and federal agencies, have learned is the importance of managing expectations. Brownfields practitioners and agencies that have most effectively and accurately communicated resources, goals, and expectations have created the best working environments.

Multiple Participants, Multiple Interpretations, Multiple Goals

Brownfields programs have many participants with different goals. For that reason, and because of potential misunderstandings, all communications, especially those regarding resources and technical assistance, should be stated very clearly and accurately to stakeholders—be they mayors, community groups, or local government professionals.

An incident that first created widespread concern about managing expectations occurred among the Brownfields Showcase Communities, and it has had lingering consequences in several of the communities. When the Showcase awards were announced, program pledges of access to existing program dollars and the value of services such as the IPAs were confused with actual increases in funding in real dollars. Showcase Community mayors were left with the impression that their respective cities would receive money from agencies beyond the \$200,000 grant from EPA. This misunderstanding was also conveyed to the media and left local brownfields coordinators reacting from the first day, trying to convey the reality of the situation. At the local level, the misunderstanding undermined whatever coalition building and trust had already been established.

As a consequence, federal partners have been trying to clarify the promises to communities ever since.

Another example of the need to effectively manage expectations and to communicate changes in policies resulted from the HUD Community Builder (CB) program. The secretary of HUD had made a personal commitment to the Showcase project, promising each community a community builder—a middle-level professional with expertise on numerous issues such as legal strategies, community and economic development, and public health. Unfortunately, support for Showcase project community builders waned as the program changed to regional teams of community builders that served a number of communities rather than just one Showcase Community. This change was not communicated effectively to the Showcase Communities. Consequently, many communities were disappointed by the highly publicized partnership before it even took its first steps. If the change in the CB program had been communicated more effectively and earlier in the process, the feelings of distrust and rejection at the national and local levels might have been avoided.

2.14

Voluntary Cleanup Programs

Voluntary cleanup programs (VCPs) have become an increasingly important component of brownfields redevelopment in the past decade. Under both federal and state environmental laws, virtually any contaminated site subjects property owners to liability. While many of these sites are contaminated with hazardous substances, the environmental risks associated with these sites are typically not serious enough to warrant inclusion on the National Priorities List (NPL) or comparable state lists of hazardous sites.

However, redevelopment of such sites is often difficult, regardless of the severity of the contamination. Developers are often reluctant to purchase these sites, and lenders are also unwilling to provide funding out of concern that they

will be held liable for the cleanup costs associated with these sites under the federal Comprehensive, Environmental Response, Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA).

To address those concerns and encourage redevelopment of these sites, nearly all fifty states except North Dakota and South Dakota, have enacted some type of voluntary cleanup program. Such programs have allowed parties including site owners, developers, and municipalities to voluntarily approach state governments and initiate cleanups on their own. VCPs are cooperative in nature and provide incentives to voluntary parties rather than using enforcement orders to accomplish cleanups. Incentives to participate differ from state to state; however, state VCPs have a number of features in common. Incentives typically include some conditional exemptions from future state liability at a property, streamlined investigation and cleanup procedures, more expedient and economical cleanup alternatives, and more realistic cleanup goals.

Liability Assurances

Voluntary cleanup programs typically limit the potential liability of prospective purchasers and developers by allowing parties to enter into agreements with state environmental authorities to perform remedial activities. In exchange for such voluntary actions, many states offer indemnity from liabilities associated with the contaminants targeted in remedial efforts by issuing No Further Action (NFA) letters, Certificates of Completion (COCs), Letters of Completion (LOCs), and Covenants Not to Sue among other legal agreements. Although the specific names of such agreements may vary from state to state, all such documents are intended to provide liability assurance and encouragement to parties that voluntarily undertake brownfields remediation. These liability assurances are often transferable to the lender and successors of the program participants.

Financial Assistance

While VCPs generally require volunteers to pay for the costs associated with cleanup activities, as well as oversight costs, many states offer grant or

loan subsidies to help offset site investigation and cleanup costs. Some state environmental agencies provide no funding but instead create tax incentives such as tax abatements. Other programs provide funding only for those sites likely to contribute to the local economy through economic development initiatives.

Risk-Based Cleanup Standards

Many states also establish relaxed cleanup requirements using risk-based rather than generic cleanup standards. Under a risk-based approach, a participant can design a remediation procedure that is based on the risk posed by the site and the intended future use of the property.

Oversight Procedures

All VCPs provide guidance and supervision through oversight procedures typically ordained to the state agency associated with natural resources or environmental protection. Although required levels of oversight vary from state to state, each VCP establishes a format in which a state agency is able to review applications, remedial action plans, and proposed redevelopment plans, as well as site access to monitor the progress and execution of site remediation, to ensure that documents and activities comply with state and federal legislation and environmental regulations. Furthermore, oversight procedures often contain clauses that allow state agencies to reopen or rescind liability assurances if state or federal requirements are changed, if remedial efforts are insufficient or incomplete, or if VCP participants provide fraudulent information in formal agreements.

Public Notice

Many VCPs require public notification during the planning or implementation phases of site remediation. Not only does notifying the public of proposed remedial action fulfill a general obligation to portions of the community residing in the vicinity of a contaminated site, but also allows for local citizenry to review and propose modifications to remediation plans. As a result, site cleanups and future land uses are less likely to incur public disfavor and have a greater poten-

tial to benefit the interests of all segments of a community.

Memoranda of Agreement with U.S. Environmental Protection Agency

While most programs offer liability assurances that are based on the current status of the property, only those states that have entered into a Memorandum of Agreement (MOA) with the U.S. Environmental Protection Agency are able to offer assurances relating to liability under federal laws. In most cases, an MOA precludes federal involvement in VCP cleanups, except in extraordinary situations of imminent threat to human and environmental health.

Overall, VCPs have proven to be successful because they are streamlined programs with incentives that encourage property owners to initiate the cleanup process rather than allowing contaminated properties to lie unused for fear of liability under state or federal laws. With increased financial incentives and federal liability assurances, the programs are likely to become even more popular, benefiting both property owners and state governments.

For more information see Appendix IV for a complete listing of state VCP programs.

2.15

Conclusion

Partnerships among stakeholders—vertical and horizontal, public and private, professional and grassroots—are the essential links that bind the brownfields redevelopment process. They demonstrate honesty, integrity, and commitment among an array of stakeholders and their representative interests. Beyond this general consensus, partnerships can also be used to ease financial, technical, and liability burdens that local governments and communities may fear or not have the resources to address. Regardless of their nature, partnerships support the brownfields and community redevelopment process by encouraging comprehensive involvement, promoting a balance of resources and responsibilities, and negotiating compromises that will serve the community as a whole in the best manner possible. A particularly important part of forming, maintaining, and building on partnerships rests on the ability to reach and include all members of a brownfields-affected community. Such issues are discussed in detail in Chapter 3: Community Issues.

¹Taken from the mission statement of East Liberty Development Inc., Pittsburgh, Pennsylvania.

²American Planning Association. *Legislative Guidebook for Growing Smart*. APA Planners Press, Chicago, Illinois. pg. 74 (September 1998).

³Ibid, p.96.

COMMUNITY ISSUES



3.1

Overview

Outreach strategies and program initiatives encourage public involvement and can greatly increase the success of a brownfields program. Likewise, resistance to site redevelopment can be a result of limited public involvement. Promoting citizen involvement begins with a well-developed outreach program. Programs at the local level using language that citizens understand and relate to give members of the community an opportunity to comprehend the issues and become more involved in the environmental and economic redevelopment of the sites. More often than not, contamination is described in technical language that is not easily understood and could be discouraging to community members seeking information about brownfields, especially if they feel that they do not have a way to communicate their concerns to government decision makers. Public meetings can be an ideal way for citizens to discuss their environmental,

health, or economic concerns about brownfields. Local government professionals can facilitate the implementation of a program by providing meetings that both disseminate and gather information, allowing citizens to fully understand the problem and express how their needs can be met.

This chapter describes the many ways that local government officials can help ensure sound brownfields decision-making through community involvement, including the following:

- 3.2 Local Government Strategies
- 3.3 Alternative Dispute Resolution
- 3.4 Risk Communication
- 3.5 Environmental Justice
- 3.6 Public Education
- 3.7 Conclusion

Throughout the chapter, case studies of how local governments have adopted these strategies bring to life the importance of community involvement.

3.2

Local Government Strategies

To successfully integrate citizen opinions into a redevelopment work plan, local governments can follow three steps:

- Local researchers can provide relevant background information to community members. Relevant information can include (but is not limited to) the time frame for the remediation and redevelopment, proposals or suggestions for new activities in the developed site, history of the brownfields site, risks posed by contaminants at the site, and a description and definition of brownfields.
- Professionals can provide updates on local development issues, including explanations of technical language. Although these updates need not be long, they should include information in lay terms on current land-use projects, a list of local ordinances, state and federal regulations regarding brownfields, and recent proposals for development projects.
- The jurisdiction can form a local brownfields committee or task force, comprising community members, to participate in education efforts and to represent the public at community meetings. Examining the issues and discussing concerns among the task force prior to local government council meetings will give residents prime opportunities to express concerns.

As the development of brownfields programs has expanded in recent years, information about the issue may have not reached all public stakeholders. Even those who have heard about brownfields may know nothing more than the definition of the U.S. Environmental Protection Agency (EPA). If officials want citizens to be involved, they must make outreach efforts a priority.

Various strategies are available to local governments for educating the public and encouraging it to participate in the redevelopment process. One way to begin such programs is to provide information about the brownfields site; such accessible information will encourage community involvement. Some local government officials may feel that not all this background information or educational material is relevant, but the following step-by-step process can be a good model.

Step One: Getting The Word Out
Flyers, brochures, and handouts at local stores, schools, libraries, and public establishments and articles about brownfields redevelopment in newspapers are viable options for citizens to become exposed to brownfields issues. The articles can be dedicated to the discussion of brownfields programs (either locally, if one has begun, or regionally, if the community is at the stage of presenting background information). Such articles will facilitate understanding of the

remediation and redevelopment of brownfields and can serve as a link between officials and citizens. Citywide mailers sent to community members can start as one-page memos describing proposed development procedures and some background and educational information on brownfields sites. Public service announcements (PSAs) that are broadcast on local radio stations are another means of distributing educational materials to community members. PSAs are placed in the station's on-air rotation with other commercial advertisements or community announcements and, depending on the number of PSAs the station receives, the notice may be heard several times a day. Public access television also provides an excellent way to announce future meetings. Feedback from members of the community will more likely increase when some, if not all, of these outreach methods are used. In addition, these strategies will provide an easy transition to the next step.

Step Two: Meeting With Community Members
Taking outreach efforts to the next level, once brochures and flyers have been distributed to homes and public establishments, local government officials can ascertain the needs of citizens through public meetings. Many communities use meetings to get the public involved in everyday issues of the jurisdiction. Delegating specific minutes of the meeting to listen to concerns about brownfields will benefit all parties.

Traditional community involvement strategies include the allocation of time at public meetings to listen to inquiries about the brownfields site. The local jurisdiction may already have a current meeting schedule in place, requiring an addition to the agenda as the only modification. To generate interest, the local government can invite a well-respected local citizen (e.g. a school principal or business owner) to the meeting. This strategy also can dispel community perceptions that the meeting is designed only to serve the purposes of the government or a developer. Guests such as a representative of the state environmental agency or a spokesperson from a company that is involved in the redevelopment of the site can be invited to attend and answer questions from the community. The

local government can distribute surveys to attendees, inviting citizen comments and ideas regarding the proposed action. If development plans affect neighborhoods of non-English speaking residents, the local government should also make a translator available at all public meetings as well as provide translated materials to citizens.

Participation from all community stakeholders can reap benefits beyond what is identified in the brownfields remediation and redevelopment strategy. If all sectors of the community participate in the remediation of a brownfields site, the educational process will promote environmental justice, even if done so with the initial intent to improve outreach and education. All local governments have a responsibility to promote an equitable community for citizens. What better way to show how dedicated officials are to this cause than to seek residents of all backgrounds to contribute to the remediation of the site? Strategies used in encouraging overall involvement can also become the basis for engaging minority groups in outreach programs—beginning with events such as the distribution of educational materials on the effects of poor environmental and land-use planning on brownfields communities. Providing such materials can help those groups to recognize and address these issues as they begin to take an active part in brownfields outreach programs.

As local government officials know well, community perceptions about programs can eventually determine how well a project fares. Most often, the perceptions of citizens are shaped by what materials they are initially given and the manner in which this information is relayed. Exclusion from the development process is reason enough for many to protest, which can delay or even end the brownfields remediation and redevelopment program.

Council Meetings

Municipal or county council meetings, which are scheduled regularly to allow the council members to discuss and vote on issues, usually provide the first face-to-face line of contact with the community. Council meetings are required to be open to the public and should have time set aside within the agenda for citizens to make comments. In the

interest of brevity, citizen input can be limited to a specified period of time (e.g., three minutes per person). However, citizens should have the opportunity to submit comments in writing, to be read by the council and answered at the next meeting. Citizens often ask questions the administrator or council members cannot immediately answer. The council should have the question researched and give a response to the citizen at a future meeting. Some municipal and county councils also have subcommittees that address issues related to particular areas, such as the environment. Questions or concerns may be referred to the subcommittee for further consideration and, if appropriate, council members should invite the citizens raising concerns to attend subcommittee meetings and participate in the process.

Planning Commission Meetings

Local jurisdictions that have commissions to handle community zoning and planning should consider involving individuals from the community as members. Typically, the planning commission is composed of department directors from the affected local government offices, such as the housing, economic development, and assessor's offices. However, citizens with planning and architecture backgrounds are also sometimes appointed to the planning commission. When the planning commission is reviewing zoning laws and making recommendations to the municipal or county council on issues such as variances, property deed restrictions, and economic development, it is important to notify the affected neighborhoods and invite them to provide input on the proposed plans. The council should consider these recommendations when voting on issues related to community planning.

An ideal way of promoting citizen involvement is to organize a committee of interested citizens.

An ideal way of promoting citizen involvement is to organize a committee of interested citizens. The committee would then be respon-

sible for providing information and resources to the general public. Citizens can be encouraged to sit in on other meetings and report back to the committee, increasing local understanding and trust among stakeholders. Weekly, biweekly, or monthly meetings are a perfect opportunity to discuss concerns and recent events about the brownfields site. The committee members should represent various sectors of the community and should include health officials, business owners, developers, environmentalists, and other concerned citizens, just as a number of stakeholders are represented at municipal or meetings. Some of those interested in becoming involved may live or own businesses near the site. Although not necessary, it often helps if at least one member of the group is familiar with local government operations and brownfields redevelopment. Citizen advisory groups are most effective when a clear plan is demonstrated during organization.

In addition to a decision about the size of the committee, a number of needs must be addressed before the advisory panel can become an effective method of communication for the jurisdiction. These needs can include but are not limited to the following:

- An orientation for members may be necessary with background documentation, such as site characterization reports and developers' proposals, which will assist them with discussions and decision-making.
- A mission statement for the group (i.e., an explanation of what outcomes the group would like to achieve through its organization and involvement) may be needed and should include goals that are accepted by all members and fit into the allotted time frame.
- A meeting site for the committee, along with the date and time of the meeting, should be established prior to the first gathering.
- Procedures of the meetings or rules of order to follow during meetings require prior organization. An agenda should outline the order of business and activities that will take place. Comments should be limited to a few minutes to provide everyone with an opportunity for input. Meetings should also be held to a time limit—two hours, for ex-

ample—so that all the participants know exactly how much time they have to accomplish the tasks before them. The group should appoint a chairperson to be responsible for conducting the meeting in accordance with the established procedures. Minutes should be recorded to provide written documentation of the group's actions and to track its activities and progress. Minutes from the previous meeting should be provided to all members for review prior to each meeting. At the group's discretion, participants may want to create a formal voting procedure for decision making. Voting can be carried out by verbal or written response, and the group can decide whether decisions require a two-thirds or a majority of the voting participants. The group should also establish a fixed number of members that must be present to hold a formal vote.

- Administrative support should be recognized and provided by the local government, which includes duties such as typing the minutes of the meetings or paying for postage for community mailers.

Ideas and suggestions brought forward at these meetings can then be addressed at public meetings, and ultimately, at municipal or county meetings with local government officials.

Outreach programs for the community can also help determine what actions will benefit the citizens individually. Without feedback from citizens, officials will be unable to ascertain the direct effects of any proposed (or since implemented) redevelopment plan. Input from citizens is critical in determining the day-to-day effects of these programs. Residents of the community will also be more likely to have knowledge of or know how to locate information on what previous structures or other activities existed throughout the community, especially in their own neighborhoods, since it is in their best interest to have such information. Besides giving residents a role in which they can contribute to the program, the local government will then be able to make accurate assessments of what needs have been met and what concerns or issues have yet to be addressed. Citizens will be able to discuss firsthand

what redevelopment activities would most benefit the community, increasing the number of residents committed to the program. It will also give them a voice in deciding what programs are started in their neighborhoods, allowing them ample time to either encourage the project or offer alternative solutions. This, in turn, will make the process smoother when taking the first step in implementing remediation techniques. The government officials may be impressed by suggestions formulated by the citizen task forces, committees, or interested individuals.

Community outreach is an important skill and not to be thought of in hindsight. Development of a successful program requires the dedication of both staff and community members. The methods of outreach most beneficial to a community depend on a number of factors: current programs, size of staff available to coordinate activities, priority of brownfields redevelopment, demographics, and geographic localities all play a major role. Some communities may find it sufficient to provide updates in the local newspaper, while others may require in-depth discussions of the proposed brownfields redevelopment, weekly meetings, and the distribution of fact sheets. Regardless of the strategy you implement, an outreach program will have a positive impact on the redevelopment efforts of the site. Getting the public involved in the early stages of planning will make the process run smoother for citizens and officials alike. In fact, many communities with successful brownfields redevelopment programs have attributed their success in part to the positive feedback and suggestions from the public as a result of education and outreach activities.

3.3

Alternative Dispute Resolution

Brownfields programs continue to evolve and become successful tools for the redevelopment of abandoned, vacant, and underused properties with real or perceived environmental hazards. Unfortunately, there are still a great number of disputes and conflicts associated with brownfields

redevelopment. Many of these conflicts result from the strict forms of liability standards imposed by the Comprehensive Environmental Response, Compensation, and Liability Act¹ of 1980 (CERCLA or Superfund) that could be applied if the site was listed on the National Priorities List (NPL).² Disputes over CERCLA's liability standards by potentially responsible parties (PRPs), and concerns over liability to current and future owners, have made future owners and developers reluctant to purchase brownfields. While PRPs at brownfields sites are not normally subject to these liability standards because the sites are never listed on the NPL and are not normally severely contaminated, they are subject to other disputes, such as future liability, future land-use, and environmental justice issues. As a means of preventing long and costly litigation processes for solving disputes between parties, an emerging process called alternative dispute resolution (ADR) is being used successfully.

A leader in the promotion and implementation of ADR in environmental disputes has been the U.S. Environmental Protection Agency. EPA has used the strategies of ADR since 1987, when it became agency policy. Furthermore, support and guidance for the use and implementation of ADR has increased since 1987 as a result of legislative action in Congress.³ EPA's background with ADR, and more specifically the use of ADR to resolve environmental disputes, makes it an authoritative resource on the subject. For example, ADR has become a standard part of EPA's enforcement program. For this reason, this section of the

guidebook will rely on much of the work EPA has done in the past thirteen years.

Alternative dispute resolution, as defined by the EPA, is "a general term that encompasses various negotiating tools that are alternatives to litigation or conventional negotiation."⁴

In general, ADR is a voluntary, informal, and flexible process directed by a neutral third party. Parties can use a number of negotiating tools to resolve their disputes. These tools consist of facilitation, mediation, and arbitration.

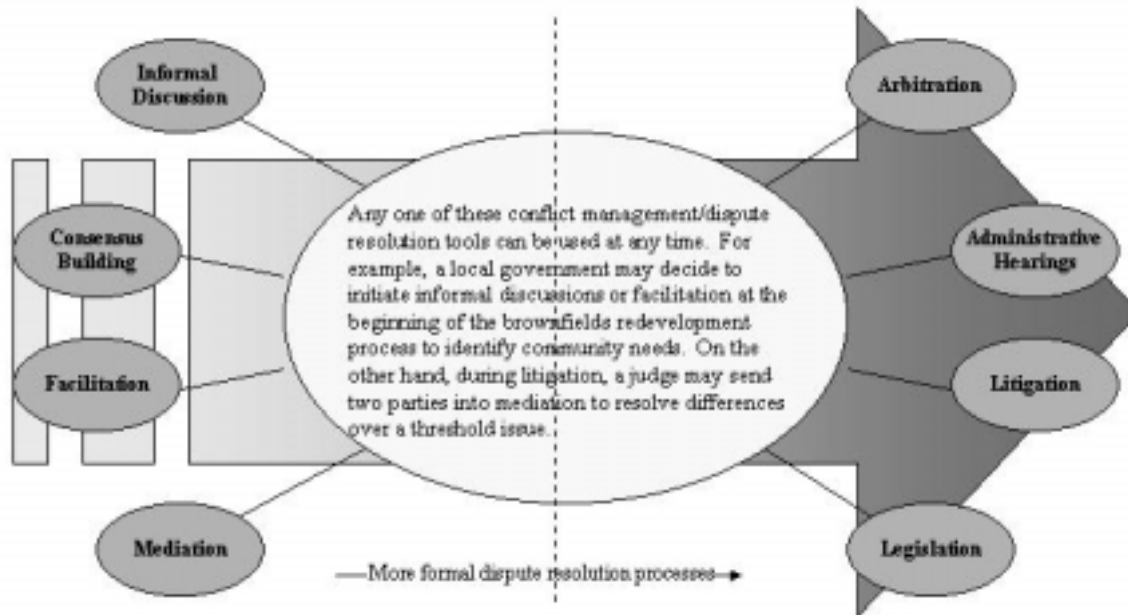
- Facilitation is a voluntary, informal, and flexible process directed by a neutral party to coordinate or improve communication among parties. If or when a dispute arises, the facilitator becomes the mediator.⁵
- Mediation is a voluntary and informal process in which the disputing parties select a neutral third party to assist them in reaching a negotiated settlement. A mediator has no power to impose a solution on the parties. Rather, mediators assist parties in shaping solutions to meet their interests and objectives.⁶
- Arbitration is the most formal of the ADR tools. Arbitration in ADR can take one of several forms. The most common forms are binding arbitration and nonbinding arbitration. In binding arbitration, the neutral person or panel hears the dispute and renders a decision. Decisions in binding arbitration can be enforced courts. Nonbinding arbitration follows the same process as binding arbitration except that the neutral party's decision is advisory only.⁷

Of these devices EPA believes that "mediation is the most promising ADR tool, especially in the realm of environmental problem-solving."⁸ ADR can be particularly useful in environmental problem solving because of the sheer number of complicated and technical variables in environmental cases. Especially in the arena of brownfields redevelopment, planners have to look numerous variables including, but not limited to, economic factors, public health, future land use, remediation standards, and environmental justice. ADR allows stakeholders to meet in a noncon-

Possible Results of ADR

- Plan of action;
- High-quality agreements;
- End of stalemates;
- Citizen capacity building;
- Lasting relationships and trust among stakeholders;
- Consensus building;
- Reduced costs and time; or
- Move to more or less formal negotiations (e.g. facilitation, mediation, arbitration, or litigation).

Exhibit 3.1: Conflict Management and Alternative Dispute Resolution Approaches



Source: Schofield, Seth, Research Assistant, ICMA, (2000).

frontational atmosphere in which all of these variables can be put on the table and discussed. This process allows all stakeholders to identify for themselves which variables are most important and which variables are most threatening, and it allows for a redevelopment plan that considers the needs of all stakeholders. For example, if community members want to redevelop a site into a manufacturing plant, the remediation of the site may not have to attain the same cleanup level as might a school or a day care center.

Although the term alternative dispute resolution is relatively new,⁹ the process of facilitation and mediation are not. Throughout history different cultures all over the world have used have used facilitation and mediation to resolve disputes. For example, mediation in China is believed to date back to the Ming Dynasty (1368 to 1644). It is noted that Chinese people prefer mediation because it is faster, better for ongoing relationships, and less expensive than cases settled in the courts. One Chinese saying translates, “In death, avoid hell; in life, avoid the

Alternative dispute resolution is a beneficial method of resolving disputes outside of the courts.

courts.”¹⁰ While this quotation may be harsh, it does offer us a useful lesson: Alternative dispute resolution is a beneficial method of resolving disputes outside of the courts.

Although it is often the best alternative, certain disputes simply cannot be settled with ADR. In these situations, the courts are really the only logical place to turn. The following discussion will show the relationship between brownfields redevelopment and ADR, outline the steps and process, detail the advantages and disadvantages, and provide several examples. The goal of this discussion is to show the advantages of ADR in regard to brownfields redevelopment.

Advantages of ADR

Typically, environmental cases are complicated by a number of social and technical questions that are difficult to tackle. Understanding and synthesizing all of these issues can be an incredible undertaking. In some cases, it may even be impossible to reach any sort of conclusive support for one alternative over another, particularly with regard to technical issues such as toxic exposure, transport of toxins, and the adverse health effects of exposure to many toxins. The complexities of these issues slow litigation, increase costs, and in some cases bewilder juries. Social, environmental, health, and economic factors are among the many interwoven issues that may arise in a brownfields redevelopment project, making ADR a viable alternative to litigation because it takes into account the complicated variables of environmental cases.

Alternative dispute resolution avoids the slow and expensive process of litigation often associated with brownfields and Superfund sites. Because community outreach and involvement are

necessary to successfully redevelop brownfields, the ADR process promotes community and stakeholder involvement during the decision-making process by bringing stakeholders together to discuss and identify redevelopment approaches that take into account all perspectives: community, environmental, local government, property ownership, and regulatory. Cooperation among parties makes it possible to reach more flexible and creative outcomes, which in most cases are not the natural outcome of litigation.

Steps of ADR

Although alternative dispute resolution is a fairly ambiguous term, there are a variety of methods for implementing an ADR strategy. The following guidelines help local governments approach the ADR process. It should be used as a first response to disputes that are stalling the progress of redevelopment, especially when a variety of interests and stakeholders are involved. ADR or facilitation can be used not only to resolve disputes, but also to introduce concepts and ideas in an open forum

Table 3.1: Determining the Need for Alternative Dispute Resolution

<p>1. Could your situation benefit from ADR?</p> <ol style="list-style-type: none"> 1. Has progress reached an impasse? 2. Has the decision-making process stalled? 3. Are you unable to reach any sort of consensus? 4. Are there multiple interested stakeholders? 5. Are all stakeholders willing to participate? 6. Is the problem definable? 	<p>2. What can a facilitator or mediator do for you?</p> <ol style="list-style-type: none"> 1. Identify stakeholders. 2. Design the process. 3. Manage the process. 4. Identify points of consensus.
<p>3. What resources are available?</p> <ol style="list-style-type: none"> 1. EPA regional offices can help direct you to available resources. 2. Many organizations now offer professional ADR services, and have developed lists of facilitators. 3. EPA makes grants available for 150 hours of free facilitation services. 	<p>4. What kinds of processes are available?</p> <ol style="list-style-type: none"> 1. Facilitation 2. Mediation 3. Consensus building 4. Collaborative problem solving

Source: Schofield, Seth, Research Assistant, ICMA, (2000).

in which all stakeholders have a chance to respond and ask questions. A recognized expert in ADR, Susan Podziba, noted in her presentation at the Brownfields '99: Alliance for 21st Century Livability conference that facilitation at brownfields sites can and should be used to set the agenda, communicate among stakeholders, clarify the issues, educate and exchange information, coordinate, deal with difficult personalities, and build leadership capacity.¹¹ Incorporation of these methods into the planning process can only increase the chances of successful redevelopment.

If the intensity of the disputes increases and is holding up the redevelopment process, it may be necessary to use the more formal process of conflict resolution accessible through mediation. The switch from facilitation to mediation is commonly triggered when the facilitation process has reached an impasse. Although facilitation is analogous to a discussion, mediation focuses on negotiation. In mediation, the mediator has more control over the process, but not the outcome. Podziba notes that mediation at brownfields sites should “ensure that all stakeholders participate, set clear goals and deadlines, manage expectations, manage negotiations—assist parties to identify interests, generate options, and create packages for mutual gain, and establish and maintain momentum and participation.”¹²

The practices of ADR can be useful resources for dispute resolution at the local level. The best way for a local government to initiate the ADR process is to contact the applicable regional EPA office. The EPA can provide ADR resources, including recommended mediators and firms that conduct facilitation and mediation, and possibly funding and personnel assistance.

After EPA is contacted, the first step of the ADR process is to select a neutral facilitator or mediator. It is important to invest some time selecting a facilitator or mediator because he or she can have a tremendous effect on the resolution process. As the CPR Institute notes, “the selection of a highly qualified mediator plays a large role in whether a mediation is successful.”¹³ Selecting a facilitator or mediator who has specific knowledge of brownfields will improve the efficiency and the usefulness of the process. In certain situations, employing a team approach may be beneficial to

the mediation process. Using an environmental mediation team may offer some advantages because of the vast number of complicated variables that can arise during an environmental case. However, using a mediation team may or not make sense in a particular brownfields redevelopment and, thus, should be decided on a case-by-case basis. In some cases, a mediation team may be able to achieve more at less cost because a team of mediators with varied backgrounds could provide more useful and timely information in specific areas of concern. For example, a mediation team could consist of a trained mediator, a neutral environmental lawyer, and a neutral environmental expert with experience in the subject area of dispute. Whether a team or a single mediator is chosen, it is important to select mediators with experience in brownfields redevelopment.

Involving all stakeholders from the start of the process will help build trust among community members and other stakeholders, allow community members to express their opinions, and encourage community members to play a role in the redevelopment plan.

The second important step of the ADR process is to identify the nature of the dispute and the identities of the stakeholders. Understanding what the dispute is about will help ensure that affected stakeholders are identified and involved. The local planning team, with the help of the facilitator, could initiate a process of identifying stakeholders. During this phase, not only must the stakeholders be identified, but they must also be notified of the proposed brownfields redevelopment plan. It is important not to overlook any stakeholders, especially those who otherwise may not learn of a proposed action until it is too late for them to voice their opinions and perspectives. Involving all stakeholders from the start of the process will help build trust among community members and other stakeholders, allow community members to express their opinions, and

encourage community members to play a role in the redevelopment plan. Involving the community from the beginning reduces the number of disputes as the redevelopment plan progresses. Collaboration at brownfields redevelopment sites increases the odds of attaining a product that satisfies all the parties involved.

The third step, after selecting a neutral facilitator or mediator and identifying stakeholders, is to develop and announce a plan of action or a model. One of the advantages of ADR is that mediators are able to craft a model that is well suited to each specific dispute. The model acts as a guide, setting out the format of the facilitation process and guidelines. A model may also determine how the goal of the process will be attained. For example, parties may decide to strive for a resolution that improves the local economy or creates more green space. A model can be adapted to attain a result that is conducive to the redevelopment goal. The facilitator will be able to suggest several different models, which are based on the issues and the stakeholders involved. Many firms and groups that practice ADR will already have established models, which can be adapted to particular situations and needs. At this point in the process, developing an agenda and schedule for the process will help frame the process and identify milestones. During the development of the agenda, it is important to consult the stakeholders to determine if the agenda meets the needs of all parties involved.

The fourth step in ADR is beginning the resolution process. In some instances pre-convening meetings are held at which the mediator can sit down with each stakeholder individually to identify specific problems and needs. The complexity of the characteristics at the site in question will determine the amount of time and energy required to reach a resolution. Proper preparation (e.g., identifying the stakeholders and selecting the neutral facilitator or mediator) will increase the odds that the resolution process will run smoothly. At the end of the process, a remediation and development plan that considers the needs of all stakeholders will have been produced. ADR will not solve every dispute, but it is a good place to start because it takes into

consideration the needs of all affected parties, thus preventing future disputes and problems. As Michael Young notes, “the fact is, there are some types of complex cases that simply do not lend themselves to efficient resolution by trial, whether jury trial or bench trial.”¹⁴ For this reason, ADR may provide several important advantages.

Advantages of ADR in Brownfields Redevelopment

The advantages of using ADR in brownfields redevelopment far outweigh the disadvantages. ADR is a viable place to start, whether it is motivated by avoidance of lawsuits or by a redevelopment plan whose goals guarantee a safe and satisfactory future land use. ADR is recognized by many as a tool for avoiding future disputes and lawsuits in brownfields redevelopment. For example, the New Jersey Department of Environmental Protection (DEP) recently received a \$100,000 environmental justice grant from EPA to develop an “environmental equities” program. The agency intends to work with several communities around the state and with the State Office of Alternative Dispute Resolution “so that [they] do not have a lawsuit at the end of the redevelopment pipeline.”¹⁵ New Jersey DEP hopes that by involving all stakeholders from the beginning the agency can prevent problems before they start, such as deterring those who decide not to participate in the process from filing lawsuits after the process is complete. In other places, such as Louisville, Kentucky, facilitation has been used to alleviate distrust that had existed among stakeholders. Sharif Branham noted, “once the stakeholders trusted each other, they were able to agree on goals for the project.”¹⁶ ADR can be used to overcome a number of different disputes such as future land use, environmental injustices, economic development, and future liability.

Community Involvement

One of the greatest advantages of ADR is that it requires community involvement. More and more, encouraging community involvement is becoming the norm and not just a rare occurrence. Almost all of EPA's recent pilot studies at brownfields and Superfund sites identify stakeholder and community involvement in the final reports, many of which

New Jersey Department of Environmental Protection, Office of Dispute Resolution

The New Jersey Department of Environmental Protection established its Office of Dispute Resolution in May 1994 through a directive from Commissioner Robert C. Shinn, Jr. The purpose of the office is "to provide an alternative forum for those engaged in a dispute with the department."¹⁹ ODR offers three services to stakeholders: facilitating meetings between stakeholders, teaching department members negotiating skills, and mediating disputes so that resolutions can be reached.

According to Nancy Milsten, director of New Jersey DEP's ODR, mediation is the most widely used function of ODR. The goal of the ODR mediation process is "to have the parties resolve their differences and then draft and execute a signed mediation agreement which will not only end the dispute but also withdraw the matter from litigation."²⁰ To improve the success and partiality of ODR, Commissioner Shinn established ODR as an independent office that provides free mediation services to the department and the regulated community. In New Jersey, the ADR process follows a standard model. The process begins with a premeeting, during which stakeholders meet individually with the mediator, followed by a convening of all of the stakeholders for a presentation and discussion of each party's interests. The goal of the process is to yield a draft agreement outlining accomplishments and the course of action of the resolution. Notably, agreements reached through ADR are upheld as contracts under New Jersey state law.

Has New Jersey's ODR been successful? The answer to this question is yes. According to Nancy Milsten, eighty-eight mediations were convened between 1994 and 1998. Those mediations included almost all department programs, large and small companies, local counties, municipalities, townships, developers, and individual homeowners. Of those eighty-eight mediations, about 75 percent included attorneys, and resolution was reached in 85 percent of the cases. Milsten notes that mediation has resulted in significant cost savings and timesavings for both the department and companies.²¹ ODR encourages stakeholders to bring consultants and principals to the mediations to enhance the understanding and efficiency of the process.

One company noted that it resolved three pending matters through ODR at savings of \$100,000. According to Milsten, the average mediation involves twelve participants, takes about twelve hours, and costs about \$20,000, although there have been cases in which the process has taken longer. For example, one mediation lasted for two years and involved fifteen meetings.²² These numbers illustrate how ADR has saved the New Jersey DEP and stakeholders time and money while promoting acceptable resolutions. As a next step, it is important to examine what types of disputes ODR has been involved with.

ODR has been involved with a vast number of disputes. For example, ODR has been involved with resolving disputes related to closing a landfill, siting a compost facility, developing new technology to provide wastewater treatment, and expanding a highway. It has also been involved in a number of homeowner issues relating to wetlands, the Coastal Area Facility Review Act regulations, docks, bulkheads, and other regulatory constraints upon individual home building. The ADR process allows stakeholders to come together and meet in a cooperative environment to work toward an agreement. As Milsten notes of the process, "more often than not, parties obtain what they need rather than what they want."²³ More often than not, giving people what they need is enough to reach a satisfactory resolution for all parties and is preferable to litigation, in which usually only one party gets what it wants.

ODR is the exception and not the rule in terms of state-level offices related to ADR. In 1997 Texas was the only other state that had an office of dispute resolution,²⁴ although since 1997 several other states have developed offices of dispute resolution,²⁵ while others are currently studying their application. This does not mean that every state needs to develop its own office of ADR, although the New Jersey example suggests that an office working on ADR does bestow benefits. Rather, it is meant to portray how ADR can be used to resolve environmental conflicts to save money and time and reach decision-based resolutions that have been shaped by all stakeholders.

show successes. For example, in Charlotte, North Carolina, a pilot in EPA's Brownfields Title VI case studies, "communication between local neighborhood associations and the Camden Square developer resulted in a compromise to lower building heights, a problem that could have caused delay for the developer and resistance from the community if it had not been dealt with early in the process."¹⁷ Community involvement can have a significant positive impact on brownfields redevelopment.

The level of community involvement may vary, depending on what type of ADR is chosen. In the most relaxed form, facilitation, community members are able to be actively involved throughout the process. The rules of involving communities change slightly as more formal formats are adopted in mediation and facilitation. For efficiency, the number of participants may be reduced during mediation. The community stakeholders will not be excluded, but they may have to reduce their numbers. In such cases a community may have to select a group leader or group of people to represent the community and its needs.

Stakeholder involvement in the ADR process has several additional advantages. By bringing stakeholders together, consideration can be given to potential effects of various future land uses on local communities. Identifying possible future land uses can eliminate steps in the redevelopment process and make developing an appropriate plan easier. Knowing the future land use can directly affect the remediation effort required at a particular site. For example, remediation with the goal to redevelop a site into a park would be different than remediation for a residential housing complex.

Furthermore, the ADR process can identify unforeseen benefits and liabilities and prevent potential disagreements in the future. Having all stakeholders at the table means that everyone understands the proposed plan and what its consequences will be. ADR also promotes flexibility and creativity that the courts cannot. To put it simply, "the courts cannot craft creative solutions to meet the true needs and interests of the parties. Either the defendant pays the plaintiff or he does not."¹⁸ In ADR, responsibility for success is placed equally on all the parties.

Expedites Negotiations

ADR also offers advantages in time and money saved. ADR can save time by preventing long and drawn-out environmental litigation. ADR does require a significant time commitment up front, but in the long run the period of time needed to complete the redevelopment is reduced. Time invested at the outset will decrease the likelihood of a dispute or conflict once the redevelopment process has begun because all of the stakeholders will have already been given the opportunity to meet and express their ideas and views and, as a result, will understand the plan and its goals.

Reduces Costs

In the same way, ADR can reduce costs over the long run. The greatest savings of costs will be those associated with the avoidance of litigation. Litigation is timely, costly, and does not always end happily. For example, discovery costs can be reduced through collaborative fact finding. When a dispute is brought to court, each party must supply its own evidence. In environmental cases, especially environmental cases that deal with toxic exposure probabilities and toxic exposure pathways, each party must hire a specialist to survey and study the land. The costs of these types of surveys and studies can add up quickly. In ADR, parties can agree to hire one neutral party to complete the study and, as a result, cut their costs in half.

Limits of ADR in Brownfields Redevelopment Rather than look directly at disadvantages it is more appropriate to focus on the limits of ADR. ADR will require a great deal of planning and time up front. This initial time commitment is more of a trade-off than a disadvantage because time spent at the outset will pay off later through the smooth implementation of a redevelopment plan. Resolving disputes early will decrease the odds of encountering disputes later in the process when it is more difficult to make changes. However, ADR may not be appropriate in every case. In some cases consensus will not be reached because obstacles arise that cannot be overcome. In many instances these obstacles result from disagreement over threshold issues.

A threshold issue is an issue that requires consensus to move ahead to the next issue in dispute. Consensus on a threshold issue allows the decision-making process to advance, whereas lack of consensus can stall the process and potentially adversely affect any previous progress. A threshold issue can be any number of issues ranging from environmental justice matters to the proposed level of remediation for contaminants. When a consensus cannot be reached, litigation is likely to follow. ADR may still provide some benefits if consensus is not reached. For example, the collaboration between

parties that ADR promotes can build lasting relationships between parties that could help resolve future disputes.

The following two examples portray the use of alternative dispute resolution in brownfields redevelopment at the state and local levels. The New Jersey Department of Environmental Protection's Office of Dispute Resolution (ODR) and a brownfields redevelopment pilot in New Bedford, Massachusetts, illustrate what state and local governments can do to promote the use of ADR and what can be accomplished by using ADR.

ADR at Work in New Bedford, Massachusetts

New Bedford, Massachusetts, was selected as the EPA Region I grant recipient for 120 hours of facilitation services in early 1999. The 120 hours of facilitation services was made available to one EPA brownfields pilot in each region through an EPA initiative "started as an attempt to help several brownfields pilots that had 'stalled out.'"²⁶ The New Bedford brownfields pilot project was selected over other pilots in EPA Region I because New Bedford was viewed as an underperforming grantee. The New Bedford case illustrates how facilitation can be used to overcome problems that are slowing or even stopping redevelopment from occurring.

Historical Background

New Bedford, Massachusetts, is a coastal city located in southeastern Massachusetts. New Bedford has a land area of about twenty-four square miles and a population of about 100,000 people. Incorporated as a city in 1847 with a mayor/council form of government, New Bedford has grown to become the most successful fishing port on the East Coast and the second-ranked fishing port (per dollar value of catch) in the nation. New Bedford is also commonly referred to as the "whaling city" because it was the whaling capital of the world during the eighteenth century. In conjunction with the success of its fishing industry, a successful seafood-processing industry has developed, attaining over \$609 million in annual sales. New Bedford is also home to a formerly thriving textile industry. Unfortunately, the textile industry is in a state of decline as a result of exportation of work to the southern United States and overseas. The decline of the textile industry has left behind a number of vacant buildings and properties that contain unknown quantities of pollutants.

New Bedford is not new to the problems associated with contaminated waste sites. On September 8, 1983, New Bedford Harbor was listed as a Superfund site on the National Priorities List. The harbor and its shores were badly contaminated by organics, polychlorinated biphenyls (PCBs), and metals released into the harbor predominantly between 1940 and 1978 by two electrical capacitor-facilities. Cleanup of the harbor is still underway. In a separate action, New Bedford was named as one of EPA's brownfields pilots in July 1997 in response to a significant number of vacant properties and buildings that had become moderately contaminated. Both public and private entities own the vacant properties. The goal of the pilot is to decrease the number of vacant manufacturing and retail space in the city. New Bedford initially felt that promoting and supporting the aquaculture industry would be most beneficial, but stakeholders

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later determined during site assessments that aquaculture would not be feasible because of likely community objections and the possibility that aquaculture would not yield significant profits. One uncommon strategy the city is using is retaining the existing structures. In so doing, the city hopes to minimize waste and the need for zoning variances.

One of the key hurdles identified in the redevelopment process was community participation. Community participation was identified as an area of concern because of lessons learned from negotiations during the New Bedford Superfund cleanup. According to the Institute for Responsible Management, "since the Superfund negotiations, many in the [New Bedford] area have been skeptical about development and the will of the government to be responsive to the needs of the community."²⁷ In response, the pilot plan calls for the development of a community relations plan that identifies the need for public meetings, maintenance of an information repository, distribution of informational packets, and production of a multilingual videotape.

Community Perspective

In general, the community viewed its designation as a brownfields pilot site as a positive step to redeveloping abandoned buildings and industrial sites. At the time, about 300 brownfields had been identified as possible sites for redevelopment. Because of the large number, the initial brownfields redevelopment action plan calls for prioritizing sites so that resources can be allocated to those that will provide the greatest benefits from redevelopment. Unfortunately, prioritizing the sites was made difficult because of differing opinions of the stakeholders. Inability to overcome these differences stalled the process. For this reason, when EPA recognized the pilot as an underperforming grantee, EPA selected New Bedford to receive 120 hours of facilitation services to surmount the barrier.

Actions Taken

At the New Bedford pilot, facilitation moved the redevelopment process forward. Susan Podziba of Susan Podziba & Associates, a firm from Brookline, Mass., specializing in public policy mediation and consensus building, was selected to help with facilitation at the New Bedford pilot. Meetings were generally led by New Bedford's city environmental planner in coordination with Podziba. Podziba's role during facilitation was to design and support the meetings and facilitate the meetings at points when decisions were not being reached.²⁸ The goal of facilitation at New Bedford was to identify two to three sites for site assessment and produce a prioritized list of other identified sites. To attain this goal, New Bedford's Economic Development Council, the lead agency in the redevelopment, assembled a planning task force composed of members of the local community, local business people, members of the city council, representatives from economic development organizations, and the mayor of New Bedford. The following is a list of steps applied during facilitation in New Bedford:

- Identify all possible sites (exceeding 300 sites);
- Develop short list (25 to 30 sites);
- City provides information on all sites;
- Develop criteria for prioritizing sites;
- City provides additional information by criteria;
- Assess sites relative to criteria;
- Select sites for assessment; and
- Hold public meetings.²⁹

One priority of the task force was to establish a set of criteria to prioritize the brownfields sites. Prioritizing the sites so that site assessments could be conducted was the stumbling point that initially stalled the brownfields redevelopment process. Establishing a list of criteria to prioritize the sites was necessary to create a legitimate process to enable the various stakeholders to work together to identify the best sites for assessment. Prioritizing the sites in this way removed many of the unknowns and enabled sites to be objectively selected according to a set of criteria, rather than opinion. Following is the list of criteria established by the planning task force to prioritize sites:

- Ownership status;
- Attractiveness of the property to companies and developers (cost of redevelopment, tax incentives, economic opportunity areas, and commercial revitalization districts);
- Level of interest in site;
- Proximity to main gas line, electrical capacity;
- Distance from transportation routes and hubs (highways, railways, and airports);
- Feasibility of redevelopment (lot size, zoning, expansion footprint, adjacent land use, beneficial effect on neighborhood, extent of contamination); and
- Consistency with city plans and initiatives.³⁰

Establishment of a list of criteria helped the planning task force rank the sites and move on to the next phase in the project. The following section briefly identifies the results of the facilitation process and next steps.

Results

The facilitation process at the New Bedford brownfields pilot was a success. The planning task force was able to attain its goal and rank the sites according to the established set of criteria. As a result, assessment of the sites is under way, and the data are being compiled in a matrix. After the assessments have been completed, the task force will review the list and select the sites for possible redevelopment. In a presentation at the EPA Brownfields '99 conference, Podziba outlined key lessons learned and steps for involving stakeholders, which included the following:

- Facilitation is a legitimate process.
- The group should (1) include all segments of the community, (2) provide good information, (3) use objective criteria, and (4) deal appropriately with difficult people.³¹

Including all stakeholders in the facilitation process will help ensure a successful resolution to the dispute. Podziba notes that, to involve stakeholders, local governments should set clear goals, select and design a process to fit the unique characteristics of each community, make decisions by consensus to ensure complete participation, work with facilitators or mediators to manage the process and to identify mutual gains during negotiations and conversations, and create multiple opportunities for responsible participation.³²

The next step at the New Bedford brownfields pilot will be a series of "leadership meetings." Although the design of these meetings has not been finalized, Podziba notes that the main purpose of the meetings is to increase the number of people involved, provide more information to the community, build community capacity, and start to identify future land uses for the sites.³³

The New Bedford case portrays how the ADR process can be used to overcome barriers and impasses that arise over threshold issues. Although the ADR process can be used throughout the redevelopment process, it can also be used to overcome particular disputes, as portrayed by this case. In this case, ADR was successfully employed to establish a set of criteria and rank the brownfields sites so that site assessments could be conducted, permitting the redevelopment process to move forward.

3.4

Risk Communication

Risk communication seeks to protect public health and safety by informing community members of health and environmental risks through the initiation of a dialogue among government officials, industry representatives, and citizens. In the case of brownfields, risk communication alerts the public to both the complexities and uncertainties of the risk associated with a project.

Risk communication is important to everyone. It is especially significant to the public because the residents of a community have a right to be involved in decision making that directly affects their health and safety. For brownfields project managers, it is also important to keep the public informed for projects to succeed. As a site undergoes development, the public will need to know what is happening and how it affects them. For example, a field that was used as a short cut may no longer be an available path for community members to take because the field is fenced in. Even in an informal setting like this, it is important to explain what is happening and why it is happening. It is vital for risk assessors to communicate with the public because the public can

provide information necessary in making proper risk assessments such as previous use of the site. Furthermore, credibility is afforded to the assessor and the industry conducting the project.

Often projects need the support of the public or local organizations to bring about change. Only through open and constructive dialogue can such support be garnered.

Often projects need the support of the public or local organizations to bring about change. Only through open and constructive dialogue can such support be garnered. By keeping the lines of communication open before, during, and after a project, industry and local government can decrease the potential for protests, lawsuits, and political intervention, all of which can stymie a brownfields project. When the proper avenues for dialogue have been created, the public and organizations will not have to resort to other measures to have their needs and concerns addressed.

The Role of Local Government Officials

Local government officials can act as facilitators between risk assessors and the public. They can actually play the role of risk communicator. Being risk communicators will help local officials fulfill their duties to protect public health and improve the community's quality of life. A local official acts as facilitator by exchanging information among risk assessors, risk managers, and the public. Local officials can also assure that the concerns of the entire community are heard and that members of disadvantaged communities are not left out of the process.

The risk communicator must be able to inform the public in a way that is both accurate and understandable to the layperson. The task is often difficult because the technical nature and complexity of a brownfields development. If the risk communicator lacks the ability to communicate properly, local residents will not have the information required to be active participants in the process. In such cases, the risk assessor will

Goals of Risk Communication

The goals of risk communication include:

- Informing the public of risks so that it can make informed decisions about matters that may affect its health and safety;
- Establishing credibility among citizens, local government, and industry;
- Making technical data and policy information accessible to the public; and
- Providing the media with accurate information to disseminate to the public.

Source: U.S. Environmental Protection Agency, Regional and State Planning Division. *EPA's Comparative Risk Projects: Risk Communication and Public Participation*. (September 1996).

lose the benefit of community input into project decisions.

The project manager and risk communicator must be knowledgeable of the economic, political, and social concerns, as well as the characteristics of the community, to help develop plans for reuse of sites. If a brownfields project is likely to bring in jobs, it is vital that the project managers know the unemployment rate and economic status of the community. If the project is taking place in a city where the citizens and locally elected officials share a favorable relationship, the risk communicator may find it helpful to seek aid from those officials when communicating with the public. Risk communication is more than just supplying information; it requires an understanding of the specific circumstances that surround every project.

Role of the Risk Communicator

A risk communicator must perform many essential tasks, such as providing all written communications to all of the affected parties and avoiding unnecessary side communications that do not include all of those parties. Furthermore, information should not be provided only on a “need to know” basis. If all information is not public, the community may feel that something is being hidden and unnecessary suspicion may arise.

Effective Communication

The risk communicator should not assume that the topic is too difficult or complex for the community to understand. The risk communicator must find a way to explain the risks associated with a project in a way that is both understandable and informative.

Furthermore, risk communication must be conducted in a manner that is not perceived as condescending.

A common practice is to compare risks to natural phenomenon, (e.g., one is more likely to be hit by an asteroid or struck by lightning than be hurt by this risk). Such analogies are not helpful. They may be perceived as condescending and do not give the public a proper way to relate to the risk involved with the project. A better analogy would be to compare the risk to the likelihood of having an automobile accident. Automobile

Rules of Risk Communication

The U.S. Environmental Protection Agency has established seven cardinal rules of risk communication. They are as follows:

- Accept and involve the public as a legitimate partner.
- Plan carefully and evaluate your performance.
- Listen to the public’s feelings.
- Be honest, open, and frank.
- Coordinate and collaborate with other credible sources.
- Meet the needs of the media.
- Speak clearly and with compassion.

Source: U.S. Environmental Protection Agency, *EPA’s Seven Cardinal Rules of Risk Communication*, (available at <http://epa.gov/opptintr/cie/seven.htm>).

accidents are a common misfortune that people can relate to in everyday life, so they will get a proper concept of the risk associated with a brownfields redevelopment.

Comprehensive Stakeholder Involvement

The risk communicator should involve all parties at the early stages of a project to resolve potentially sensitive issues. Early involvement can prevent future political and legal disputes from developing into major problems. This process allows the risk communicator and assessor to become aware of potential problems, so that they can begin to work on feasible solutions without having to resolve matters in the courts, which can deplete both time and money. The risk assessor and communicator should not wait until after solutions have been found to approach the public with potential environmental and safety hazards. Instead, they should consult the public when the problem is uncovered, so that community members can actively participate in developing a solution.

Limited and Controlled Media Contact

The risk communicator should have controlled and limited contact with the media. The risk communicator must be certain that the media, whether television in heavily populated urban areas or newspapers in rural areas, dispense only accurate and precise information. Clear distinc-

tions should be made between facts and opinions to ensure the press does not confuse the two in reports. If the press releases incorrect data, it may be difficult to change public perceptions. By releasing specific and limited data, the risk communicator can avoid such a pitfall.

Technological Savvy

Another good way to disseminate information to the public is by using modern technology such as the Internet, e-mail, and cable television. Documents can be made available to residents on a Web page to be viewed at their own convenience, obviating a trip to a central office during work hours. E-mails can be used to alert people to upcoming meetings and to solicit agenda items for meetings. Additionally, local cable providers usually have channels reserved for public access and local government. Meetings can be broadcast on these channels so that people receive information about the brownfields project without having to leave their homes. By using these modern methods as well as the traditional press, the risk communicator can assure access to a wider community.

Risk communicators should notify all parties of meetings and invite them to attend. Additionally, there should be open “town hall” sessions in which all citizens can participate, ask questions, and voice their concerns. Such sessions will allow the risk assessors to hear the community’s sensitivities and create public buy-in into the project and will aid in changing the public’s behavior in instances when doing so is necessary to ensure the project’s safety. In addition risk assessors can learn more about the property, past uses, and ideas for future use by listening to what the public says at these meetings.

Establishing Credibility

Building credibility is an essential element in proper risk communication. Otherwise, the community will not believe the information being disseminated and will be distrustful of the risk assessment. The Agency for Toxic Substances and Disease Registry (ATSDR) has released the following guidelines for establishing credibility at a public meeting:³⁴

- Avoid using technical jargon and humor. Both may create barriers between the risk communicator and the community. The matters discussed in a public meeting are important to community members, and they want to understand them. Community members do not consider their families’ health and safety a laughing matter.
- Refute allegations without attacking and be sure to remain calm when doing so. Risk communicators should avoid creating an “us versus them” situation which industry or local government will be perceived as the enemy.
- Remember that body language communicates just as strongly as verbal language. Make sure both types of communication are sending the same message.
- Train all staff members to speak with the public. Staff members who are uncomfortable with public speaking should not be forced to do so. Their apprehensions and nervousness will be visible, and they may be perceived as lying or distorting.

Self-Evaluation

Risk communicators should evaluate the effectiveness of their communication efforts. Evaluations can tell the risk communicator if his or her messages are reaching the target audiences and if they are being understood. Risk communication evaluations should be completed at every step of the process:

- At the beginning of a project, evaluations identify whether the risk communicator has resources to reach all sectors of the community and what methods will be the most useful for each audience.
- During a project, evaluations are useful in determining whether the goals for communication are being reached. At this time the message can be reworked to be more effective. If new challenges have arisen, this is an ideal time to tweak the message to address new concerns that may have been piqued in the public’s mind.

- After a risk communication project, the final evaluation will gauge the effectiveness of the message and the risk communicator's ability to respond to issues that arose during the process. The final evaluation will help the risk communicator plan for the next project by learning how to fine-tune materials and practices to ensure that communication is enhanced in the future.

Often, the community's perception of risks posed at a brownfields site has a stronger impact on its attitudes than the actual risks. By definition, a brownfield may only be perceived to be contaminated, but in fact may not be. When conducting a risk communication project, the risk communicator may find the public's perception of the risks associated with the project is not representative of the true risks involved. It is the job of the risk communicator to provide the public with accurate information so that the community learns about the true risks. Opposition and the press may attempt to exploit perceived risks. By communicating with citizens early and often, the risk communicator can ensure that they understand what the actual risks are. It also bears noting that often the public has a preconceived notion that industry is solely concerned with making money and has little or no concern about public safety. The risk communicator must be cognizant of how prevalent this perception is in the community. If the community is highly suspicious of an industry's intentions, the risk communicator will have to cross that hurdle before the public will trust his or her message.

Using Risk Comparisons

Risk comparisons can be a helpful tool in putting risk in perspective. Risk comparisons compare the planned project with other options. Those options should include alternative remedial actions and uses of the property as well as an assessment of the potential risk of leaving the site as is. The public may support a specific plan only if the risk communicator can show that the risks for the proposed project are lower than those of leaving the brownfields undeveloped or those of alternative uses of the property.

Developing a Risk Communication Plan
Before risk communicators can embark on interacting with the public, they must draft a risk plan. The risk plan can guide a local official through the risk communication process as he or she increases public understanding of the risks to public health and safety. The risk plan answers the following questions:

- Who is the audience?
- What mechanisms will be used?
- What is the goal to be achieved by the communication?

The risk communicator must identify the different audiences that need to receive information about

What Can Happen if Risks Are Poorly Communicated?

EPA designated one northern U.S. city as a Superfund site because of contamination from an inactive, contaminated lead smelter. EPA decided that to remediate the contamination it would have to remove the soil around over 1,000 homes and businesses. However, community members expressed that they were not fairly consulted regarding EPA's decision. Local government officials believed that EPA had ignored many health risks caused by the cleanup. Furthermore, the company responsible for the contamination never responded to EPA's decision. Unfortunately, because none of the parties involved communicated with each other, the matter now sits in the courts for resolution. EPA is suing the company. The city is suing EPA because it feels the agency is not serving the best interests of the community. The city has even secured a restraining order against EPA barring it from continuing the cleanup. Both the city and EPA have secured experts to testify that their respective positions are the right ones. The citizens of the city feel that they have been left in the dark and do not know whom to believe. This situation could have been prevented if there had been proper risk communication. If EPA, the contaminating industry, local government, and the public had met and come to an agreeable solution, they all could be concentrating on remediation and not litigation.

Source: Institute of Medicine. *Toward Environmental Justice: Research, Education and Health Policy Needs*. National Academy Press, Washington, D.C., p. 67 (1999).

the project in order to involve them in solving problems. Those communities can include citizens living near the site, businesses, the media, locally elected officials, and other community groups.

The risk communicator must then decide upon the best mechanisms or media to reach each of those audiences. The business community may find newspaper articles most useful, whereas citizens may benefit from public meetings. Residents who do not speak English as their primary language will need to have information presented to them in their native languages. The media will need to be provided with press releases and fact sheets so that they can report accurately about the project. Locally elected officials appreciate direct phone calls and may expect to be the first to be notified of problems that arise so that they can be prepared. After the risk communicator has identified the different audiences and the best way to reach them, it will be easier to create direct mailing lists, develop specific tasks, and schedule the time and location of meetings to best suit each group.

Risk communication should be viewed as a dialogue—a two-way process—with the risk assessors learning from the public and the public learning from the risk assessors.

Additionally, the risk communicator must determine the goals of the communication tasks. Ideally the goal should be to educate the public about the real risks of the project, while gaining input from the public for making final decisions. The goal should not be focused on convincing the public about a decision that has already been made. Risk communication should be viewed as a dialogue—a two-way process—with the risk assessors learning from the public and the public learning from the risk assessors.

3.5

Environmental Justice

From its inception during the 1960s, the environmental movement has been branching out to protect not only the natural environment but also human health and the equitable treatment of all people. During the past fifteen years the emerging environmental justice (EJ) movement has brought a new set of ideas and issues to the table. The EJ movement is a response to the efforts of grassroots community groups. Their work is a reaction to the concern and recognition that in many cases minority and, low-income populations bear a disproportionate quantity of adverse health and environmental effects in their communities. EPA defines EJ as the “fair treatment³⁵ and meaningful involvement of all people regardless of race, ethnicity, income, national origin or educational level with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”³⁶

Environmental Justice and Brownfields Redevelopment

There are several links between environmental justice and brownfields redevelopment. First and most evident is the correlation between brownfields sites and the make-up of the local community. In many areas across the country, brownfields are located in communities that consist of minority or low-income people. Brownfields negatively affect these communities in many ways such as increasing crime, devaluing the local economy, and subjecting the local community to a variety of adverse health affects associated with toxic contamination. Identifying this correlation is necessary so that environmental injustices are not perpetuated during brownfields redevelopment. Brownfields redevelopment gives local, state, and federal government a unique opportunity to identify any inequities and resolve them. Second, community outreach and education are important steps in brownfields redevelopment and are two of the primary requests of EJ advocates. A third major concern of EJ advocates is the end use of the property, which is also a recognized priority

Brownfields redevelopment gives local, state, and federal government a unique opportunity to identify any inequities and resolve them.

of the Brownfields Redevelopment Initiative.³⁷ The following sections briefly provide:

- Some historical background on EJ;
- Continue the discussion of the relationship between EJ and brownfields;
- Identify the need to incorporate EJ in the initial planning stages of brownfields redevelopment;
- Look at how EJ relates to other community needs such as economic development;
- Identify the needs of the successful incorporation of EJ into brownfields redevelopment; and
- Provide some case studies illustrating the link between brownfields and EJ

Historical Background

The environmental justice movement is cited as originating in rural, mostly African-American, Warren County, North Carolina, in 1982. The stage was set when Warren County was selected as the site for a PCB landfill. News of the planned landfill spread through the community and “sparked widespread protests, marches, and more than 500 arrests.”³⁸ The protest was unsuccessful in blocking the landfill, but it did draw national attention to the issue of EJ and attain the support of African-American church and civil rights leaders. Another important result of the protestors’ efforts was to spur the development of grassroots EJ groups nationwide in rural and urban communities, as well as on Native American reservations. These groups have been successful at educating policy makers and planners about EJ and lobbying for national recognition and change in our nation’s environmental policies. In 1991, the First National People of Color Environmental Summit met in Washington, D.C., leading to the adoption of the

Principles of Environmental Justice and the continuing effort to build regional coalitions of environmental justice groups. Moving forward, the EJ movement gained important recognition from EPA’s Administrator Carol Browner in 1993.³⁹

In 1994, President Clinton established environmental justice as a national priority when he signed Executive Order 12898. In that document President Clinton ordered: “each Federal Agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”⁴⁰ In addition to placing the responsibility of developing such EJ strategies on federal agencies the order established an Interagency Working Group (IWG) on environmental justice headed by the administrator of the EPA.⁴¹ An independent advisory group named the National Environmental Justice Advisory Council (NEJAC) was also formed through the Federal Advisory Committee Act to guarantee that stakeholders would be able to provide significant input into affected federal agencies. NEJAC consists of community stakeholders, representatives from business and industry, and academic and educational representatives.

With this understanding of environmental justice, it is important to be aware of links that exist between EJ and brownfields redevelopment and how awareness of EJ will help promote successful redevelopment in your cities and communities.

As noted earlier, there is a well-established relationship between brownfields and EJ. Many contaminated, vacant, and underused properties with either real or perceived environmental contamination are located in communities and areas that are predominantly made up of minority or low-income populations. For example, a recent study conducted by the Institute for Medicine’s Committee on Environmental Justice notes that “there is evidence that minorities and lower-income groups face higher levels of exposure to environmental hazards and, therefore, potentially higher rates of adverse health outcomes.”⁴² This statement is supported by a report published by the Commission for Racial Justice of the United

Church of Christ in 1987 and updated in 1994. The report states “in the United States in 1993, the percentage of people of color (defined as everyone except non-Hispanic whites) was 14.4 percent in zip code areas with no commercial hazardous-waste facilities, 29.5 percent in areas with one facility, and 45.6 percent in areas with three or more facilities, an incinerator, or a large landfill.”⁴³ This evidence points to the relationship between EJ and brownfields because hazardous waste sites, landfills, and incinerators are typically candidates for brownfields redevelopment. Understanding that this relationship exists is important, but understanding why we should recognize it and what we should do is a different issue. EJ has to be recognized during a brownfields redevelopment because failure to do so may result in practices and outcomes that promote or continue the inequitable treatment of an already unfairly treated group. To reverse this trend, it will be necessary to recognize and identify EJ-related issues during the initial planning stages of redevelopment.

EJ from the Beginning

Recognizing the importance of EJ in the initial planning stages of a brownfields redevelopment is the most successful way of avoiding disputes as the process advances. In some cases, the result of redevelopment may be just as detrimental to local populations as the original brownfields site. For this reason, stakeholders must be identified early in the decision-making process. Identifying stakeholders and allowing them to participate in the process can help direct the future land use of a site and the success of redevelopment. For example, it is reported that “in Camden [New Jersey] and Chicago, involving the community allowed potential problems to be identified and solved from the beginning when stakes were lower and design changes could more easily be made. In Charlotte [North Carolina], representatives noted that the trust built between the community and the developer and the fact that involvement continued throughout the project gave community organizations a sense of ownership in the project and prevented opposition.”⁴⁴

Failure to identify stakeholders and acknowledge EJ issues at a project’s start can slow

the process because distressed groups may decide to protest or even bring a Title VI suit against a prospective agency or person.⁴⁵ Title VI of the Civil Rights Act of 1964⁴⁶ prohibits recipients of federal financial assistance from discriminating on the basis of race, color, or national origin in their programs or activities. Citizens who believe that their rights have been violated under Title VI, or one of the other nondiscriminatory statutes,⁴⁷ can bring lawsuits against state and local governments. One common area to find Title VI suits is within a state or local governments’ permitting actions. For example, in May 1996, the Chester Residents Committed to Quality Living (CRCQL) brought a Title VI suit against the Pennsylvania Department of Environmental Protection (PADEP) for permitting actions PADEP undertook that CRCQL believed violated Title VI. More specifically, the lawsuit “contended that the state of Pennsylvania discriminated against the African American community—which forms 65% of Chester’s population—when PADEP did not consider the racial makeup of Chester or the number of existing facilities when permitting the city’s fifth waste treatment plant.”⁴⁸ On December 30, 1997, a federal appeals court upheld the Title VI suit, which had previously been dismissed in a lower court.⁴⁹ In doing so, the appeals court upheld the Chester residents’ argument that they did not have to prove intentional discrimination was at play. Following this decision council for the defendant (James M. Seif, as Secretary of the Pennsylvania Department of Environmental Protection) filed a writ of certiorari in the U.S. Supreme Court on March 30, 1998. A writ of certiorari is a mechanism parties can use to have a case from the U.S. Court of Appeals reviewed by the U.S. Supreme Court. After reviewing the 3rd district’s decision, the Supreme Court overturned the lower court’s decision.⁵⁰ A motion to dismiss was later filed in the district court.

Because future land use will affect the local economy, redevelopment, if EJ is not considered, has the potential to perpetuate environmental injustices. Brownfields redevelopment is often linked to a more active and better economy. Redevelopment can stimulate local economies by creating jobs, spurring infrastructure improve-

ments, and attracting new businesses. Unfortunately, strengthening an urban economy can adversely affect the communities that the redevelopment is supposed to help. Strengthening an urban economy and creating a safer and more aesthetically pleasing environment can boost property values, property taxes, and rent prices by attracting families and people who can afford the higher cost of living. This scenario is being played out in East Palo Alto, California, where Internet companies are moving in and bringing middle- and upper-class workers who are displacing the traditionally minority and low-income residents. For low-income families who are barely making rent payments, even a small change in the local economy can force them out of their homes and communities. Allowing community members to participate in the decision-making process will help identify the needs of the community and the potential positive or negative effects of a redevelopment plan. As EPA's Administrator Browner noted, "involving communities up front, and every step of the way works."⁵¹ Involving the community requires developing a comprehensive plan that recognizes all aspects and perspectives of a redevelopment project.

Local government officials must select a planner or planning committee that can identify EJ issues and design a redevelopment plan that works to avoid environmental injustices. It is advisable to remember, "a planner's primary obligation is to serve the public interest. A planner must strive to expand choice and opportunity for all persons, recognizing a special responsibility to plan for the needs of disadvantaged groups of persons, and must urge the alteration of policies, institutions, and decisions which oppose such needs."⁵²

Brownfields redevelopment will be much more efficient and effective for all parties involved with a planner whose actions reflects those ideals. The planner has to be open-minded and aware of the varied inputs that a redevelopment plan can encompass. For example, while one community may benefit from open space, another might benefit more from a new factory or industry that will create more jobs. In Austin, Texas, the city council has chosen a development plan that focuses on open space. City council member

Beverly Griffith notes, "planning for housing, open space, and recreation is what's going to enrich the desired development zone."⁵³

Meanwhile, other cities have chosen plans that promise new jobs from redeveloping sites into commercial or industrial uses. In Chicago, a developer wished to clean up and redevelop a site and create jobs for local residents. When the developer encountered permitting problems, "the community became an advocate for the project and the developer was able to get an emissions credit."⁵⁴

Social Issues

Environmental justice issues are found in many parts of a given community: economic development, transportation, infill, public health, and community involvement. The relationship between economic development and EJ is an important issue to acknowledge. Consideration of the local economy during the planning stages of brownfields redevelopment is important because communities are directly influenced by changes in land use. It is the communities that suffer if the land-use change causes detrimental environmental consequences to the area. For example, introduction of a new type of industry to a predominantly minority or low-income community could shift the local economy, making it impossible for current residents to stay. This cause and effect occurs because a new industry can stimulate a local economy by providing jobs and local revenues. Although from a broad perspective strengthening an urban economy is viewed as extremely positive, the resulting increase in property assessments may force low-income residents out of their homes and communities.

Transportation

Transportation projects can cause problems on several fronts. Redevelopment plans that redesign roadways or affect the amount of road use have to be identified early so that potential problems can be discussed. In the past, low-income and minority communities have been subject to relocation because of the construction of new highways and roads. Furthermore, the construction of new highways and roads can literally divide communities, increase noise, and introduce new hazards.

Infill Development

Infill is another issue related to brownfields and EJ. People are abandoning their properties in poor and minority neighborhoods in search of better and safer areas. Vacant properties can increase crime by providing locations for drug dealers and criminals to conduct their illegal businesses. Vacant properties also diminish the overall morale and sense of community in areas because they act like an open wound, inviting crime and creating a sense of blight in a community. Revitalization of these vacant properties is an important step in improving affected communities, but it must happen in a way that involves and benefits community members. Involving community members allows for the drafting of a redevelopment plan that focuses on the needs and betterment of the community.

Public Health

Contamination on brownfields can adversely affect the health of area residents. Public health is a primary concern of the EJ movement because a large number of brownfields are in minority or low-income neighborhoods. Furthermore, the communities in which those populations live are frequently selected for future industrial sites because property value in those areas is typically low, and construction of new facilities is not usually met by opposition. Communities located near industrial manufacturing sites are adversely affected by such things as diminished air and water quality. The report conducted by the Committee on Environmental Justice notes that “a certain type of double jeopardy exists in that they [minority or low-income populations] (1) experience higher levels of exposure to environmental stressors in terms of both frequency and magnitude and (2) are less able to deal with these hazards as a result of limited knowledge of exposures and disenfranchisement from the political process. Moreover, factors directly related to their socioeconomic status, such as poor nutrition and stress, can make people in these communities more susceptible to the adverse health effects of these environmental hazards.”⁵⁵ Brownfields redevelopment plans need to identify these risks and counteract them by removing the source of contamination or implementing and

enforcing strict environmental permits that will protect the nearby populations.

Communities that are given the chance to participate in the decision-making process are more likely to approve and support any final plan than those that are not. Community involvement is the factor most associated with success of brownfields redevelopment.

Community Outreach

The tool that has the most potential to counteract and overcome these issues is community outreach. Effective community outreach requires a two-way dialogue between the community and the local government. A great deal of consideration should be given to community outreach during the initial phase of redevelopment. Communities that are given the chance to participate in the decision-making process are more likely to approve and support any final plan than those that are not. Community involvement is the factor most associated with success of brownfields redevelopment. For example, “in Chicago, Charlotte, and Detroit, interviewees [interviewees included stakeholder groups, composed of developers, lenders, community representatives, and public officials] mentioned that it was common practice for developers to solicit support from community members before they invested in a redevelopment project or redevelopment planning. These ‘up-front dialogues’ saved time and money for the developers and got the community in on the ground floor.”⁵⁶ Failure to involve communities from the beginning of site redevelopment creates a situation ripe for the development of future conflicts or disputes between the community and local government. These disputes could concern future land use, potential health risks, and the effects redevelopment would have on the local economy.

One step that can be taken to help avoid environmental injustice is educating the public and decision makers. Decision makers need to

understand EJ and how it relates to brownfields in particular, so environmental injustices are not perpetuated.

To help decision makers and local governments involve affected communities in brownfields redevelopment projects, the EPA provides important resources, such as knowledge, experience, and grants to support brownfields redevelopment projects. For example, EPA's Office of Enforcement and Compliance Assurance (OECA) administers the Environmental Justice Small Grants Program. "The Environmental Justice Small Grants Program was established in 1994 to provide financial assistance to eligible community groups (i.e., community-based/grassroots organizations, churches, schools, other non-profit organizations), local governments, and tribal governments that are working on or plan to carry out projects to address environmental justice issues."⁵⁷

As noted earlier, to ensure the success of community involvement, a two-way dialogue has to be developed between government and community stakeholders. Furthermore, as noted by NEJAC's 1995 report, "it is not enough to simply hold a meeting or provide opportunities for access. Government officials must make an effort to achieve meaningful public participation through long-term consistent interaction with community-based organizations and institutions."⁵⁸ Involving the community from the onset in a clean-up and redevelopment project will help prevent unnecessary tension, future conflict, and

potential litigation. Realizing the need to involve community members and understanding why it is important is already becoming common practice. In EPA's Title VI pilot studies, interviewees "revealed that one of the primary concerns in redevelopment decision-making is community support for projects. Because of the scope of community involvement at Brownfields Pilots, residents are not likely to oppose the redevelopment projects in their communities."⁵⁹ Involving the community will promote faster and less controversial redevelopment, decreased costs, and improved community morale. Community stakeholders can help developers and decision makers identify advantages and disadvantages of specific redevelopment plans. Because community stakeholders have a direct interest in and understanding of their community, their involvement will help ensure that small but important details are not overlooked. Brownfields redevelopment gives local governments the opportunity to improve local communities and build lasting relationships with community members. The December 1999 *Citizens' Report on Brownfields* recommends "that communities be viewed as assets—partners in, not obstacles to, revitalization."⁶⁰

The following case study enhances the concepts discussed in this section and portrays how one city is coping with environmental justice issues in a brownfields redevelopment. This case study will briefly summarize the course of action undertaken in Clearwater, Florida.

Dealing with Environmental Justice in Clearwater, Florida

EPA Region IV selected Clearwater, Florida, as a regional brownfields assessment pilot in September 1996. The pilot project is part of EPA's Brownfields Economic Redevelopment Initiative. The Brownfields Economic Redevelopment Initiative "is designed to empower States, communities, and other stakeholders in economic redevelopment to work together in a timely manner to prevent, assess, safely cleanup, and sustainably reuse brownfields."⁶¹ The City of Clearwater has suffered from the flight of its industry base. Industry flight has not only left behind numerous brownfields but has also caused a decline in the city's economy. Environmental justice has been identified as a factor at this brownfields site because minority and low-income people are most impacted by the potential adverse effects of the brownfields and their redevelopment.

Historical Background

Clearwater is located in Pinellas County on the west coast of Florida. The city was incorporated on May 27, 1915, and has a land area of 24.88 square miles and a water area of 12.37 square miles. In 1995, the

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population was estimated to be 101,162. As previously noted, Clearwater was named a regional brownfields assessment pilot in September 1996. The primary target of the pilot is a former lake. The lake was filled for urban development and now hosts an industrial, commercial, and mixed-use area. Unfortunately, the area has suffered from business exodus.⁶² EPA believes that the exodus was a response to difficulties businesses were having meeting environmental regulations mandating property set-asides for stormwater reduction. The former lake and its abandoned properties are now referred to as the "collective brownfields area" (CBA). Environmental justice is a concern at the Clearwater pilot because a dominant portion of neighborhoods around the CBA consist of minority populations of which about one-third live below poverty levels. To amplify the problem, the area also accounts for more than 50 percent of the city's crime.⁶³ It is hoped that the brownfields redevelopment project will increase revenue as well as increase job opportunities for local residents, while cleaning up hazardous sites and preventing new sites from being polluted.

Community Feelings

Community members in Clearwater share a sense of skepticism over city planning efforts. As Miles Ballogg, brownfields coordinator for the City of Clearwater, noted, "the city has been planned to death."⁶⁴ Lack of tangible results and follow-through has led some community members to question what the purpose of planning for action and redevelopment is when nothing comes of it. Ballogg noted that community participants have generally thought that the process of developing an action plan has been good, but they are ready to see some results. In a list compiled from meetings held in Clearwater, community participants articulated two important points that reflect their feelings about the process and what they want. First, the community feels that there have always been promises, but never results. Second, they want quicker responses from the city.

Actions Taken

The brownfields redevelopment project in Clearwater is underway. In 1998, a parallel project to develop an Environmental Justice Action Plan (EJAP) was initiated in Clearwater. Funded by the EPA, the project was developed because of the potential emergence of environmental justice issues in Clearwater. Research and analysis for the EJAP is being conducted by the International City/County Management Association (ICMA), the Environmental Science and Policy Program at the University of South Florida (USF), the Center for Environmental Equity and Justice at Florida A&M University (FAMU), and the Center for Public Environmental Oversight (CPEO). The correlation between the number of brownfields sites in Clearwater and the dynamics of the affected community makes Clearwater a good candidate for a project of this type.

Some of the skepticism over the city's ability to implement plans and show results could be relieved if the brownfields redevelopment plan moves forward and begins to show results. Ballogg echoed these sentiments when he stated that community response to the EJAP will be good "as long as we deliver on it."⁶⁵

According to a report filed in February of 1999 by Environmental Data Management, Inc., approximately 217 regulatorily listed sites are at least partially contaminated by chemical and hazardous wastes in the CBA. The link between environmental justice and brownfields redevelopment in the city is reflected in the dynamics of the affected community. For example, an estimated population of 10,830 reside in the CBA. Of that population 59 percent is minority, the unemployment rate is close to 9 percent, and 27 percent of those people live below the poverty level.⁶⁶

The project began in October 1998 and focused on developing a model strategic plan for Clearwater and other local governments that comprehensively addresses environmental justice issues. The model intends to identify tools for local government to use in integrating environmental justice concerns into environmental and land-use decision-making processes.

To develop this plan ICMA and its partners have worked closely with community stakeholders. An inclusive approach can reverse the trend of environmental injustices within the community, help reestablish

trust, reconnect citizens to their local government officials, and reduce the risks to human health and the environment while simultaneously spurring economic and community redevelopment. Efforts made thus far have ensured community involvement in the following ways:

- **Public Meetings.** Five public meetings have already been held to give community stakeholders an opportunity to learn more about proposals and voice their opinions and needs.
- **Public Forums.** At least one public forum has been held. This forum was organized and run by CPEO on July 17, 1999. The forum was broken into four sections: (1) learning about what brownfields are and how they directly affect the community, (2) reviewing specific brownfields projects in Clearwater, (3) assessing local environmental hazards as perceived by the community, and (4) learning about other communities' brownfields experiences. A "Community Impact Statement" exercise was also undertaken during the forum. The exercise allowed community members to share their feelings, ask questions, and identify what they felt needed to happen.
- **Planning Action Team (PAT).** Community members recommended forming a PAT at one of the early community meetings. The PAT that was subsequently created consists of volunteers from the community and represents community members and assists them in their efforts.
- **Education.** At the March 22, 1999, community meeting, several participants on the project team conducted presentations for community members. These presentations included information on community awareness of brownfields, access to information, specific community development issues, and development of a participatory decision-making process.
- **Survey.** In late June 1999, the project team in Clearwater sent a "Brownfields Initiative Survey" to residents of the CBA to solicit recommendations and determine how familiar the community was with brownfields.

Results

The Clearwater brownfields pilot has already yielded some significant results. These results include community participation, a job training program, and a draft of the EJAP. Community participation has been an important aspect of the Clearwater redevelopment and the development of the EJAP. The project team was able to obtain comments and recommendations from community members, to establish a list of priorities, needs, and questions. Community comments have been compiled and outlined into a list that reflects community responses. The list can now be used to identify future actions and the feasibility of revitalizing different sites on the basis of community needs and concerns.

Community participants identified job training for Clearwater residents as one of the specific community development issues. As it turned out, a job-training program for brownfields technician jobs was already in place. This program is administered by the Public Works Academy. The Public Works training for technician jobs began November 1, 1998, and the Pinellas Technical Education Center (PTEC) environmental technician training began on March 1, 1999. The goal of the training programs is to help create employment opportunities for residents who are currently unemployed by teaching them new skills that are in demand.

A draft of the Environmental Justice Action Plan has been completed. The plan has been reviewed by stakeholders and approved by the Brownfields Advisory Board (BAB). The final step of the process will be getting approval from the planning commission. The EJAP will be one of the most important products of the brownfields redevelopment project in Clearwater. The EJAP will serve as a guidance document as the city progresses through the brownfields redevelopment process. The final goal of the Clearwater project is to use the model EJAP established for Clearwater, and, with a few modifications, apply it as a model EJAP for cities around the country.



3.6

Public Education

Public education about brownfields is essential for several reasons. First, although the availability of information about brownfields sites is growing, many people still assume that a brownfields is too contaminated to redevelop when in fact it may contain only a little contamination or none at all. Public education about brownfields issues can yield a number of results. Educating the public about the real risks at a site can clarify what reuse options are available. Residents in communities with brownfields can help clean up sites when they are taught the necessary skills through job training programs. Effective education will benefit the public, the neighborhood, and redevelopment long after the site has been cleaned up. Informed community members will be the best form of environmental protection because they will be inquisitive and prudent about activities, land-use planning, and public health issues in their neighborhood.

Although the scope of public education programs that focus on brownfields is narrow, several programs are available for various ages that offer education on a broad array of environmental topics. Local governments and communities may choose to work with these programs and adapt them to incorporate brownfields issues. This

section discusses the different types of programs available for elementary, high school, and college students; the community; and teachers.

Community Environmental Programs
Communities must be an integral partner in successful natural resource management. Residents of brownfields communities can be faced with diminishing property values and with health risks posed by contamination in their neighborhoods. Involving the community in the process of redevelopment and educating residents helps to dispel any misconceptions of the cleanup and redevelopment process. Educating the community also teaches citizens how to take care of the land as a way of decreasing the likelihood of brownfields developing in the future.

To plan natural resource programs that best meet both environmental and social needs, local governments must ensure that all stakeholders of an area are invited to participate in decision making. All people involved need to feel that they have an equal opportunity to be heard. Although development process can be long and cumbersome, meetings allow stakeholders to hear all sides of the issues at once.

Neighborhood-based environmental programs allow youth and adults to learn about and improve the environment in their own community and explore possible career opportunities. These programs can help empower youths to make substantial changes in their lives and neighborhoods and provide a positive alternative to drugs and crime. Neighborhood-based environmental programs encourage healthy behavior toward a clean environment that can decrease the chances of future brownfields sites from occurring.

Brownfields Job Training

Brownfields redevelopment fosters several job opportunities for nearby residents. However, most

Effective education will benefit the public, the neighborhood, and redevelopment long after the site has been cleaned up.

of the jobs associated with a brownfields cleanup and redevelopment require specific skills. This section focuses on programs available to train residents on how to qualify for jobs related to brownfields cleanup and redevelopment.

EPA has entered into several partnerships to promote workforce development and training to ensure that residents of neighborhoods benefit from brownfields redevelopment. Through the Brownfields Job Training and Development Demonstration Pilots, partnerships among community groups, job-training organizations, educators, labor groups, investors, lenders, developers, and other affected parties address environmental employment and training for residents in communities affected by brownfields. The goals of the pilots, each funded up to \$200,000 over two years, are to facilitate cleanup of brownfields sites contaminated with hazardous substances and prepare trainees for employment in the environmental fields, including training in alternative or innovative treatment technologies.

Job training is essential to effective brownfields redevelopment programs. After a business suddenly closes its doors, those workers become unemployed. In many communities, a single business is the sole source of employment, and its closure leaves workers abandoned with little hope and few alternatives for employment. Workers are left to either relocate to more economically stable areas or find other means of employment.

Knowing the skills and needs of the unemployed, as well as the potential job market, is a key to success in promoting job security in brownfields areas.

A brownfields redevelopment program must take into consideration the types of skills and work needs of the unemployed community. Job training is necessary to help the unemployed gain skills that will help them succeed in future jobs. Trained workers will be needed for businesses that relocate to the redeveloped brownfields areas. Knowing the skills and needs of the unemployed,

Community Resources

Community Resources is an international nonprofit organization that helps redevelop areas such as brownfields. It provides urban environmental education and training that helps to involve adults and youths in the redevelopment process. In Philadelphia, Community Resources, in conjunction with the Department of Recreation, provides summer and after-school programs offering information on how to take care of the environment to over 250 inner-city middle-school students. Community Resources also uses community greening⁶⁷ as a tool for addressing a full range of urban issues and provides systematic, informative, and participatory monitoring and evaluation services to enhance efficiency, equity, relevancy, and sustainability of urban environmental initiatives. Urban vacant land restoration training, an urban greening tool, provides training in urban environmental concepts and activities for the Washington, D.C., Department of Recreation and the Earth Conservation Corps.

Some recent projects that Community Resources has completed include (1) natural resource and community planning, (2) community-based greening, (3) environmental education and training, (4) monitoring and evaluation, and (5) presentations and training. Community Resources has developed a Gwynns Falls Watershed Ecological Resources Atlas with the Revitalizing Baltimore Project, managed by the Parks and People Foundation. This atlas incorporates computer-based maps, text, photos, and stories to describe some of the existing environmental and social conditions and community concerns in one of Baltimore's three city/county watersheds. Additionally, Community Resources has directed the monitoring and evaluation for the Philadelphia Fairmont Park Commission's five-year multimillion-dollar Natural Lands Restoration and Environmental Education Project. Each of the Community Resources projects provides information and tools to keep the environment clean and offers a framework into which local governments and communities can tap when educating the public about brownfields.

Source: <http://www.communityresources.org/>.

as well as the potential job market, is a key to success in promoting job security in brownfields areas.

As part of the effort to integrate job training with brownfields redevelopment, workforce development enables residents of brownfields communities to be intricately involved in the

Community Programming in Trenton, New Jersey

Trenton, New Jersey, was plagued with numerous brownfields sites and was designated as a Brownfields Showcase Community for its efforts in redeveloping brownfields and establishing environmental education programs. The city works well with community development corporations; as previously mentioned, Trenton has worked well with Isles, Inc. (Isles), to address immediate challenges such as hunger, homelessness, underemployment, and environmental decay by using long-term strategies that promote self-reliance and community empowerment.

For example, many Trenton residents live near a brownfields site known as the Magic Marker site, which was formerly owned by several companies. Houses and schools are located adjacent to this brownfields site. The companies released toxins that permeated the air with strong odors. When the companies vacated the property, the area was left with concerns of contamination.

Residents of the area asked Isles to educate them about environmental issues, such as community development, wastewater treatment, pollution problems, environmental technologies, and public health issues. Now, as part of an ongoing education program, Isles has used its Leadership Environmental Training Series (LETS) to reach out to area residents. For six months, LETS groups meet every Saturday afternoon. Classes often involve guest speakers such as the mayor of Trenton, representatives from the New Jersey Department of Environmental Protection, state representatives, and professors from the New Jersey Institute of Technology (NJIT) and Rutgers University. Students of the program gain first hand knowledge of brownfields site redevelopment, extensive wastewater treatment, and the consequences of pollution.

LETS students study local, state, and federal environmental agencies and specific programs. They learn a great deal about how environmental and public programs are administered and about issues concerning environmental and economic development. Participants also are educated regarding environmental technologies. They learn whether a tool is useful to them and how to access information about it. For example, the Isles office has geographic information systems (GIS) capacity. Participants learn how to use GIS to layer health and environmental data to study neighborhoods or regions of the city. This type of information helps students understand how to analyze conditions at any given site.

Isles and the LETS program have been recognized nationally for their effective environmental education and community outreach efforts. Such programs help strengthen the community and give residents the knowledge to take control of their neighborhoods.

decontamination of their communities and serves as an initial step toward economic improvement. The community can become involved in the process if residents have the required skills. Job training encourages people in the community to obtain the skills that they can use to apply for brownfields and environment jobs within and beyond their community.

Needs and Solutions of the Individual

In communities with brownfields, individual residents have specific employment needs given the unique situations they confront. Some may need a lot of skill training, while others may need only a little.

Consider for example, a dislocated worker who has the knowledge and skills required for his or her previous job but may not have the skills needed to find a different kind of job. A job-training program can provide the dislocated worker with skills that he or she can use to work on a brownfields redevelopment project in the community, as well as tools for future jobs. These new skills can add to and reinforce existing skills and knowledge workers have from their previous jobs. In turn, job training can immensely improve the disadvantaged individual's confidence level, skills, and economic status.

Skills Needed for Environmental Cleanup Jobs

According to ETI Environmental Professionals, an environmental placement and staffing firm, the skills needed for an environmental cleanup job are (1) basic technical, (2) office, and (3) employability.⁶⁸

People with basic technical skills are those who work directly in the field and spend little time in the office. These entry-level positions give a worker hands-on experience. The kinds of jobs available are numerous, and can include field sampling technician, geology technician, driller, air sampling technician, and site health and safety technician. People with advanced office skills can enter the environmental field as computer programmers, program analysts, health and safety evaluators, or site contractors. These positions require extensive knowledge of computer programs, health and regulatory requirements, and environmental issues. Employability skills include the more intangible aspects of job readiness, such

as professional appearance, communication skills, and employee relations. These skills will help an individual acquire and maintain a job.

Following is a list of skills needed for each of the categories of environmental cleanup proficiency:

Basic Technical Skills

- Conduct sampling and monitoring of soil, water, and air;
- Label, preserve, and store samples;
- Follow chain of custody and quality assessment and quality control procedures;
- Decontaminate equipment and personnel;
- Accurately record findings in the field;
- Understand and apply relevant state and federal regulations;
- Assist in the site audits and inspections; document findings;
- Provide basic health and safety monitoring;
- Use appropriate personnel protection equipment, understand requirements, use, and limitations;
- Assist with handling hazardous materials and waste;
- Document incidents and accidents, and maintain environmental health and safety training records;
- Assist with Phase I inspections and documentation including, photographic documentation; and
- Apply basic mathematical and scientific skills.

Advanced Office Skills

- Interpret technical data;
- Compile site data into database programs and spreadsheets;
- Generate sections of technical reports;
- Write health and safety plans (HASPs) for underground storage tank (UST) sites;
- Demonstrate computer proficiency;
- Assist with the delivery of technical presentations and training programs;
- Thoroughly understand and interpret regulatory resources and regulations; and

- Assist project manager with coordination of site contractors, equipment, and other personnel.

Employability Skills

- Demonstrate punctuality and required job attendance;
- Demonstrate professional attitude and appearance;
- Complete required tasks in a timely and concise manner;
- Communicate effectively with co-workers and site personnel;
- Participate as part of a team;
- Maintain accurate timesheets, records, and documentation;
- Articulate thoughts, instructions, and recommendations;
- Communicate with supervisors on any scheduled discrepancies;
- Communicate any work-related problems;
- Demonstrate enthusiasm and a can-do attitude; and
- Have a realistic attitude when considering jobs and pay.

Actors and Stakeholders

Various actors and stakeholders are involved in the redevelopment of brownfields and associated job-training programs. Some of these stakeholders include federal, state, and local agencies, as well as high schools, colleges, and universities, communities, and nonprofit organizations.

Federal Agencies

Federal agencies provide significant funding opportunities, incentives, and programs for unemployed workers who live in brownfields areas to gain skills. The Brownfields Job Training and Development Demonstration Pilot program described earlier is only one such federal job-training program.

Another federal job-training program is run by the Department of Veteran Affairs (VA), which also supports brownfields and job training through the Compensated Work Therapy (CWT) Program. In a CWT clinic, veterans are paid the minimum

hourly wage to work with private businesses contracted out by the federal government. Veterans are taught effective work habits and social skills and develop work tolerances and prevocational skills while working in a realistic, noninstitutional working environment. The average workday is 6.5 hours.

As a player in the Brownfields Interagency Workgroup, the VA has guaranteed \$250,000 for ten pilot programs that would provide work for the job-ready homeless and disabled veterans for cleanup and redevelopment of brownfields sites. Unfortunately, the promise has not been fulfilled because the agency has not ratified their memorandum of understanding (MOU) with any other agency. Once all the legal issues are finalized, the program will be on its way to train and place veterans in brownfields development jobs.

State and Local Agencies

State governments may provide funding, as well as manage and provide technical assistance for job

training. It is primarily local governments that manage the programs and can tailor job training to specific community needs.

One program that some states have implemented is the welfare-to-work program. The welfare-to-work programs began in 1986 when President Reagan recommended (1) a greater role for states and local governments in designing their own experimental welfare programs, (2) the replacement of some in-kind benefits by cash benefits, and (3) a requirement that individuals receiving public assistance who are able to work do so. Wisconsin and other states used part of their federal funding to provide education and job incentives to deter people from remaining on welfare subsidies. The welfare-to-work program helps unemployed individuals find meaningful jobs in either the private or the public sector. The program can be beneficial to brownfields communities where many people become unemployed because of company shutdowns and lack of employable skills.

Environmental Extension Services, Seattle/King County, Washington

The Seattle/King County area used brownfields redevelopment funding for public health information, job training, and community outreach. One successful aspect of the county and city brownfields program is the Environmental Extension Services (EES), part of the Environmental Coalition of South Seattle (ECOSS). ECOSS consists of five employees and is run by a board of directors. Its employees work with businesses and residents in Seattle's three manufacturing industrial centers (MICs). ECOSS is involved in community issues and has employees who speak English, Spanish, Cambodian, and Chinese—the languages of the resident communities and businesses throughout Seattle's MICs.

The EES is modeled after agricultural extension services, which are pervasive in rural farming communities. Agricultural extension services consist of staff members who are knowledgeable about a broad range of farming issues and who have a wide variety of contracts in larger regional, state, and federal agricultural offices. Agricultural extension agents work one-on-one with farmers on a number of issues ranging from improving soil conditions to understanding new health and safety laws. Agricultural extension agents also work with groups of farmers about larger issues such as use of new technologies and federal farm subsidies. In the agricultural model, EES works one-on-one with businesses and provides information and technical assistance on pollution prevention and contaminated land cleanups.

ECOSS and EES provide the tools and skills that residents will need in future jobs. ECOSS has a training program on reducing household toxins and promoting "green" cleaning supplies. In addition, ECOSS provides information to community groups and concerned citizens about specific properties that are potentially contaminated. ECOSS staff members work closely with employees at the city of Seattle and King County offices to coordinate work efforts and projects. Most recently, ECOSS has worked with the Seattle/King County Health Department in conducting surveys of residents to identify community perceptions, attitudes, and knowledge of environmental conditions that may affect their health.

Local governments also provide work incentives and job skills for those in school. People who are currently in school can be involved in a work cooperation program or school-to-work program. In a given week, students split their time between attending school and working at a place of business. Thus, the students obtain the work experience they need to find full-time permanent employment upon graduation. Such programs can be helpful to brownfields communities by training dislocated workers for permanent employment.

Educational Institutions

Many high schools have begun to develop curricula for students entering environmental fields. Schools offer subjects such as ecology, botany, watershed management, conservation, and solid waste management, which could easily integrate lessons on brownfields cleanup and redevelopment. These programs give students a good perspective of different types of environmental fields that they may pursue in the future.

Colleges and universities offer a broad range of environmental programs. Some higher educa-

Texas Engineering Extension Service, Dallas, Texas

EPA awarded a Brownfields Job Training and Development Demonstration Pilot to Texas A & M University's Texas Engineering Extension Service (TEEX) in August 1998. The program, which targets displaced workers, unemployed people, and people who lack job skills, combines two weeks of environmental training, including hazardous waste, site assessment, and environmental issues in construction, with four weeks of heavy equipment operation training. Training classes take place on actual brownfields sites, which not only prepares students for real-life situations, but also improves the sites. The TEEX program worked on a landfill adjacent to McCommas Bluff/Floral Farms. That work resulted in an estimated \$150,000 of improvements, including an upgraded draining system, road repair, and cleaned parking and staging areas.

Recruiting for the environmental training program posed the biggest challenge for TEEX staff. Staff placed advertisements on public transportation and worked with employment agencies to promote the program. In its first graduating class, the training program graduated forty-two students. TEEX also helped students find permanent employment upon graduation through a job placement open house. At the graduation of one of the training courses, a contracting company was present to offer every graduate a job.

One success story of the TEEX program is Joe Tyson, a resident of Weatherford, Texas. Joe was employed at a local warehouse that paid him barely enough money to live. In July 1999 he began the six-week EPA-funded environmental construction course that was part of the TEEX program in Dallas. The project provided training for forty unemployed and economically disadvantaged residents of the Dallas/Fort Worth area. The course consisted of 208 intensive hours of classroom and hands-on training. Four of the weeks were devoted to heavy equipment operation for remediation. The final two weeks were dedicated to environmental training, including a forty-hour hazardous waste operations and emergency response (HAZWOPER) course, a twenty-four-hour environmental site assessment course, and an eight-hour "Environmental Issues in Construction" course. Students learned about the state and federal laws and regulations related to environmental redevelopment and contamination.

After completing his training, Joe started working for the Camelot Landfill, located in Lewisville, Texas. The landfill is a state-of-the-art facility that is permitted under the Texas Natural Resource Conservation Commission and designed to accept commercial, industrial, and municipal solid waste. According to landfill manager Kim Mote, in a landfill environment, it is important to hire people who learned the proper way to operate construction equipment through hands-on training. Having employees who are knowledgeable about environmental regulations and able to recognize hazards is also very important. The TEEX program gave Joe the skills needed to get a permanent job within the environmental field.

tion institutions, such as Texas A&M, also offer short intensive courses designed to educate people in brownfields redevelopment and cleanup. Such programs can be designated as Brownfields Job Training and Development Demonstration Pilot's, which are sponsored by EPA.

EPA's Teacher and Student Activities

In 1990, the National Environmental Education Act called upon the EPA to provide national leadership to increase environmental literacy. The act encourages partnerships and builds upon long-standing efforts conducted in the environmental education field by federal and state agencies, institutions, nonprofit organizations, and the private sector. Programs include providing educational services to educators, students, youth groups, and community and other organizations. The information and skills learned can assist in keeping the environment clean and free of contamination so that more properties do not become brownfields sites.

Interactive Web Sites

Ecosystems

The EPA Web page lists several programs or guides that students and teachers can use to learn more about ecosystems and the environment. These guides provide information concerning acid rain, the global environment, oil spills, the Everglades, and many areas of concern. Below is a list of some of these ecosystem activities and resources for teachers:

- The GLOBE Program. This site is a world-wide network of students, teachers, and scientists working together to study and understand the global environment. Those involved in the Globe Program learn about various topics, including those pertaining to brownfields, such as environmental contamination and the cleanup process.
Available at <http://www.globe.gov/>.
- Oil Spilling Learning Center. At the Learning Center, educators find activities designed to teach students about how contaminants might enter the environment and how contaminants can be cleaned up and re-

moved. Many brownfields contain contamination that needs to be cleaned up so that an area can be reused. This Web site teaches students about various types of contamination that can be found on brownfields sites.
Available at <http://www.epa.gov/oilspill/labintro.htm>.

- World in Our Backyard. This guide is a resource of information and activities about wetlands, including ways to study wetland characteristics, why wetlands are important, and how students and teachers can help protect a local wetland.
Available at <http://www.epa.gov/region01/students/teacher/wetlands.html>

EPA offers several good ecosystem activities for students at all grade levels. The following are a few activities:

- Darby Duck and the Aquatic Crusaders. This source gives students information on water pollution and how to keep waterways clean. It lists several experiments that are safe and easy for most age levels. Brownfields can have water and soil contamination that prevents people from using the land. This site encourages people not to pollute the waterways and the environment.
Available at <http://www.epa.gov/OWOW/NPS/kids/DARBY.htm>.
- What's Wrong with this Picture? Students are shown a picture that illustrates some behaviors of people that can negatively affect the environment, such as dumping oil and using pesticides and improper irradiation techniques. This gives students a visual picture of how areas can develop into brownfields sites.
Available at <http://www.epa.gov/OWOW/NPS/kids/whatwrng.htm>.
- Happy Earth Day Activity Book. This eleven-page coloring book is full of tips for making the Earth a better place. It is popular with young children and promotes a healthy outlook on the environment.
Available at <http://www.epa.gov/region5/happy.htm>.

Hazardous Waste

Brownfields sites can contain hazardous waste. EPA's Web site lists several activities and resources that both teachers and students can use to learn more about hazardous waste and what to do to prevent further contamination.

- **Hazardous Waste: Superfund.** This site lists several activities to assist teachers in educating students about hazardous waste, environmental issues surrounding site cleanup, and the federal government Superfund program. The suggested grade level for the activity is 7 to 12.
Available at http://epa.gov/superfund/students/class_act/haz-ed/hazindex.htm.
- **Office of Solid Waste Kids Page.** This student Web page is packed with unique activities for kids. There are crossword puzzles, coloring books, comic books, games, and informational activities for all ages. Most of the activities include garbage collection and recycling techniques to keep the environment clean and present future brownfields sites.
Available at <http://www.epa.gov/epaoswer/osw/kids.htm>.
- **Pollution Prevention Toolbox.** The toolbox contains a series of lesson plans on numerous pollution prevention concepts. The suggested grade level is 6 to 12.
Available at <http://www.epa.gov/reg5rcra/wptdiv/p2pages/toolbox.htm>.
- **Recycle City.** On this interactive Web site for students, children are able to explore how a city's residents recycle, reduce, and reuse waste.
Available at <http://www.epa.gov/recyclecity/>.

Elementary Environmental Education Programs

Environmental education at the elementary level brings the real world into classrooms, thereby empowering students to make positive changes in their communities and in the world. It is an ideal way to integrate skills that state and national organizations have identified as essential learning goals to prepare students for adulthood. Following are examples of already existing programs that serve as models for new environmental education programs in elementary schools.

Schoolyard Habitats

In Virginia, Arlingtonians for a Clean Environment (ACE) has sponsored various programs for its community. ACE works with schools to create outdoor classroom areas that provide habitats for wildlife and integrate the use of these habitats into the school's curricula. Outdoor teaching presents the learning material in a new and exciting way, increasing student interest in the material by giving them hands-on experiences. Most importantly, students can take the information they have learned in the schoolyard habitats and apply it to the real world. ACE programs, and similar programs in other communities, are a great beginning for encouraging students to promote a clean and safe environment. In a recent survey of the schoolyard habitat movement, educator Mary Rivkin identified eight national and twenty-eight regional or local organizations devoted to promoting schoolyard habitat programs. These programs are only a small sample of the organizations that are willing to help and sponsor habitats for schools.⁶⁹

Elementary "Redevelopment" Gardens

Some elementary schools have incorporated redevelopment gardens into their curricula. Redevelopment gardens help students understand the importance of keeping the environment clean and beautiful. Children obtain hands-on experience in redeveloping an area into a garden. Teachers and students select an area on the school grounds that is empty and perhaps not well taken care of, plant flowers and vegetables in that area, and watch the fruits of their labor grow. Students learn about compost bins, soil problems, and

Seeds of Change in Arlington, Virginia

A few years ago, Abingdon Elementary in Arlington, Virginia, developed the Seeds of Change garden. This project is related to the Smithsonian Institution's famed exhibit. Parts of the garden were set aside for growing plants from the New World, Europe, Asia, and Africa. A festive harvest party was held after the harvest of the garden vegetables. The garden is incorporated into the school's curricula to promote environmental awareness, and it continues to grow.

Source: <http://www.capaccess.org/nnp/arclen/school110.htm>

greenhouses. Not only do students become inspired by the gardens, but so do the parents. Parents see how excited their children are in this activity and often try to implement the same thing at home. The redevelopment gardens illustrate that unkept sites (such as brownfields) can be restored to valued uses.

High School Environmental Education Programs

Many high schools are integrating environmental education activities into their curricula. Teachers and administrators understand the importance of teaching youth about the environment. Students can learn how to keep the environment clean and about habitats, gardening, and ecosystems, among other topics. Some students become so interested that they pursue higher education in the environmental field.

An example of a high school environmental program is New York City's High School of Environmental Studies (HSES). This school opened in September 1992 with the mission of becoming a national model of environmental education in an urban, public high school setting. HSES believes that educators can use young people's inherent interest in environmental issues and themes both to create a stimulating academic program and to encourage students to begin lifelong explorations of environmental issues.

HSES builds its curriculum on traditional academic courses and innovative, environmentally oriented programming. The HSES building itself has some unique features, including an energy-efficient lighting system and a gymnasium lit by passive solar energy, a roof garden with a hydroponic growing system; full internal facilities for recycling; recycled paper in walls and compressed seaweed in ceiling tiles; state-of-the-art science labs; computer facilities; and a media center with full audio, video, and still-image production facilities. Students of HSES strive for educational excellence, as is evidenced by their high test scores, high attendance rates, and a college acceptance rate of more than 80 percent of the school's first three graduating classes.

Teachers, students, and administrators name the environmental education program as the main reason for the students' success. HSES teaches

students to be aware of their environment and to keep it clean. This type of educational program offers a framework for teaching students about local brownfields activities.

Clubs

High school clubs encourage students to become involved in various interests. Members of environmental clubs can perform projects such as cleaning up litter around the schoolyard and their neighborhood, promoting recycling in their schools and at home, creating gardens, leading nature hikes, and more. A team effort provides the students with more voices to be heard and talents to be used than would be the case if only one person were leading the activities.

Gang Green

An example of a high school environmental club in action is Crestwood High School's Gang Green, which is based in Mantua, Ohio. Members of the club are involved in a schoolwide recycling program, take part in Walk for Green America, and provide manual labor for a hiking trail project. They help organize community cleanups and participate in their school's Earth Week celebration.

Think Earth Program

The Think Earth program was created by Think Earth Foundation, a nonprofit organization made up of representatives from companies, agencies, and organizations throughout Southern California that are interested and involved in the environment. Its mission is to help communities develop a sustainable environment through education. The main supporters of the program are the City of Los Angeles Department of Public Works, the Sanitation District of Los Angeles County, Orange County Sanitation District, Los Angeles Department of Water and Power, the Speakers Bureau, and the South Coast Air Quality Management District. The sponsors lead tours to landfills, recycling plants, water reclamation and water treatment plants, and air quality management district facilities. These sponsors also give lectures and presentations to schools and groups about emission rules for industries and businesses, air quality measures, treatment of wastewater, landfill and recycling operations, water reclamation, refuse-to-energy plants, water and energy issues,

and pollution such as that caused by brownfields. The information provided on these tours and presentations can encourage students to keep the earth clean.

Available at http://www.thinkearth.org/whatis_te.htm.

Student Conservation Association, Inc.

The Student Conservation Association, Inc. (SCA) provides national and community conservation service opportunities, outdoor education, and career training for youth throughout the United States. Volunteers from the SCA perform more than 1 million hours of conservation service to national parks, forests, refuges, and urban areas each year. The mission statement of the Student Conservation Association is “to build the next generation of conservation leaders and inspire lifelong stewardship of our environment and communities by engaging young people in hands-on service to the land.”⁷⁰

“The young people who comprise our conservation crews are focused, engaged, and committed. They are the next generation of conservation leaders in the country,” states Dale M. Penny, SCA President. “The growth in

crew activity stems from the dramatic expansion in outdoor recreation, newly-approved Public Land Corps funding, and the extraordinary reputation of our crews and crew leaders among our agency partners.”⁷¹

In 1999, the SCA placed more than 100 crews of high school student volunteers in conservation service projects throughout the country. These volunteers performed more than 100,000 hours of service building trails, removing invasive plants, and restoring habitats, all of which relate to cleanup activities associated with brownfields redevelopment projects. The SCA provides essential knowledge to youth on how they can help clean up and restore the environment. Available at <http://www.sca-inc.org/about/about.htm>

Communities

Brownfields communities can actively pursue job-training programs for their area by contacting their local and state governments or federal agencies for more information. Community development offices can also be a good source of information for job-training programs.

Bayview-Hunter's Point, San Francisco, California

The Bayview-Hunter's Point (BVHP) in San Francisco, California, is federally designated an enterprise community. The African-American community is San Francisco's poorest with an unemployment rate of 16 percent and household income less than two-thirds of the city's average. In the BVHP area, approximately 120 brownfields have been identified in a three-mile radius.

In May 1999, the Young Community Developers, Inc. (YCD), in San Francisco became the target of a Brownfields Job Training and Development Pilot to help the BVHP area. YCD plans to train forty BVHP residents, achieve an 85 percent placement rate, and track students for one year after completion of the training. YCD also will hold public forums and meetings to educate the community on health risks of the brownfields site and to recruit more people into the job-training program.

The target of the program is people receiving Temporary Assistance for Needy Families (TANF) and other low-income residents. TANF is a welfare program whereby cash assistance payments are provided to needy families. The YCD program consists of 288 hours of environmental technician training, including the use of innovative assessment and cleanup technologies. Sponsors of the program include the University of California at Berkeley, Southeast Community College, environmental firms, and construction companies. Some of the sponsors plan to hire graduates of the program.

Source: U.S. Environmental Protection Agency, *Brownfields Job Training and Development Demonstration Pilot, Young Community Developers, Inc., San Francisco, California*, (May 1999).

Available at http://www.epa.gov/swerosps/bf/html-doc/san_fran.htm.

Earth Conservation Corps (ECC) in Washington, D.C.

The Earth Conservation Corps (ECC) is a Washington, D.C.-based nonprofit organization made up of inner-city children. ECC's mission is to reclaim two of the country's most threatened resources: the environment and disadvantaged young people. ECC targets distressed areas and aims at rebuilding both natural resources and neighborhoods. Students from these areas are trained to clean, restore, and protect the environment. Local experts hold special classes each week called "TEACH" (Training, Education, Arts, Culture, and History), which expand the students' experiences and knowledge of the environment and of life in general. The first project, in 1992, led to three months of hauling and recycling of 5,400 tires as well as other debris from the Lower Beaverdam Creek, a tributary of the Anacostia River. Other programs underway in ECC include Habitat Restoration, Wood from the Hood, ECC Media Arts, Raptor Center, Eagle Corps, and Riverlife Expeditions. These programs assist in accomplishing the following:

- Preparing members for future jobs in the fields of natural resources, conservation, and construction;
- Giving training on turning fallen trees and abandoned shipping pallets into furniture; and
- Providing training opportunities in information technology, media, and communications.

ECC not only gives members knowledge about the environment, but it also provides job-training skills. Janet Futrelle, a member of Eagle Corps, stated, "I learned about what it takes to take care of the world, myself, my family, and my community. I now know that I can succeed in life." Members are given confidence, self esteem, and skills needed to make them feel better about themselves and the world.

Source: Grant, Nathan. *Basic Technical, Advanced Technical, and Employability Skills Needed in Environment Technology Occupation*. ETI Environmental Professionals, Inc., Lakewood, Colorado, 1998.

Available at <http://www.earthconcorps.org/eccente.htm>.

Nonprofit Organizations

Nonprofit agencies often form at the community level to further encourage local and state governments to support job-training programs. They work with local governments to implement job-training programs for community members, and they depend on federal grants for funding.

For example, of the thousands of Cambodians who immigrated over the past twenty years to Lowell, Massachusetts, many remain unemployed or underemployed. The U.S. Department of Agriculture's (USDA's) Urban Forestry program provided education and technical assistance to the Cambodian Mutual Assistance Association (CMAA) in Lowell. CMAA used the knowledge gained from the USDA's programs to turn the existing facilities on one brownfields property into a community center, complete with commercial

fish tanks and hydroponic vegetable gardens. The program not only taught the Cambodians the necessary farming and aquaculture techniques they needed to maintain an indoor fishery and hydroponic garden, but also generated income for CMAA and provided culturally important fresh and healthy foods to Lowell's Southeast Asian Community.

As previously mentioned, the Earth Conservation Corps provides another example of a nonprofit organization involved in job training in brownfields areas. ECC provides programs to enhance the skills of youths in the environmental field in the Washington, D.C., metropolitan area. ECC offers hands-on training for young adults from public housing communities and targets distressed natural resources and neighborhoods in efforts to restore both at the same time.

3.7

Conclusion

Comprehensive stakeholder involvement is critical to the success of brownfields redevelopment strategies. In addition to private and public sector agencies and institutions, the most successful community revitalization efforts include and build upon contributions from the general public.

To garner this support, local government agencies must engage the appropriate professional techniques through channels that will reach as wide of a cross section of the community as possible. In addition, the general public must be included in redevelopment planning negotiations from the initial stages of the project. As demonstrated, this process can prove to be quite challenging yet is attainable by using such tools as alternative dispute resolution, risk management, and public outreach.

The successful determination of community-wide planning initiatives is a two-way street. In this way, community members must unite and form their own groups and coalitions to effectively identify and communicate their desires to the local government. More importantly, they must use the educational opportunities provided through numerous programs ranging from local to federal levels of the government.

This process creates a unified community working to implement comprehensive planning initiatives that represents local interests. Therefore, future decision makers in the brownfields redevelopment and community revitalization process may avoid unforeseen consequences as much as. Communities may then consider which direction future redevelopment initiatives will follow, issues that are discussed in Chapter 4: The Cleanup Process.

¹42 U.S.C.A. section 9601, *et seq.*

²It is important to note that CERCLA liability is determined under 42 U.S.C.A. section 9607, “which makes no reference to NPL listing or deletion.” Cited from Federal Register, Vol. 60, Number 211. p. 55467. (November 1, 1995). Available at <http://www.epa.gov/docs/fedrgstr/EPA-WASTE/1995/November/Day-01/pr-376.html>. Note: This means that PRPs covered under section 9607 can

still be held liable for cleanup costs whether a property is listed on the NPL or not. In general, deletion of a site from the NPL normally removes liability from contamination that occurred prior to new ownership, but not from future contamination at a former site.

³U.S. Environmental Protection Agency. *Guidance on the Use of ADR in Enforcement Actions*. August 1987. Note: After the issuance of the ADR policy guidance document in 1987, the use and guidance regarding ADR was strengthened through several legislative and presidential actions. In 1990, The Administrative Dispute Resolution Act of 1990 (P.L. 101-552, 5 U.S.C.A. § 581, amended 1996) was enacted, strengthening EPA policy by encouraging the use of ADR in all federal disputes. Also, in 1990, The Civil Justice Reform Act was enacted, authorizing district court judges to require parties to attempt mediation prior to litigation. On October 23, 1991, Executive Order 12778 was proposed requiring all federal staff to attempt settlement, and offer use of ADR as appropriate, prior to initiating any litigation. In February 1996, President Clinton signed Executive Order 12988 (61 Federal Register 4,729) titled “Civil Justice Reform,” requiring that the use of ADR become a priority throughout the federal government. The push for the application of ADR was continued in a presidential memorandum on May 1, 1998, that designated interagency committees to encourage the use of ADR by agencies and in negotiated rulemaking.

⁴U.S. Environmental Protection Agency, Region 1. *Alternative Dispute Resolution*. p. 1. Available at <http://www.epa.gov/region01/steward/adr/index.html>.

⁵Sharif Branham, “Using Facilitation and Mediation to Manage a Brownfields Project,” *Brownfields EPA Pilots News*, February 1999 (available at <http://www.instrm.org/bfnews/v2i2/6facil.htm>, 9/25/00).

⁶*The ABC's of ADR: A Dispute Resolution Glossary—Private ADR Processes* (available at <http://www.cpradr.org/selfadm.htm>, March, 2, 2000).

⁷*Ibid.*, p. 1.

⁸EPA Region 1, *Alternative Dispute Resolution*, p. 1.

⁹The American Bar Association (ABA) began considering and developing policies for Alternative Dispute Resolution in the early 1970s. In 1994, they went as far as recommending that CERCLA be amended to use ADR for the allocation of liability when multiple PRPs existed. In 1997, the ABA passed a resolution stating that “the ABA supports legislation and programs that authorize any federal, state, territorial or tribal court including Courts of Indian Offenses, in its discretion, to utilize systems of ADR such as early neutral evaluation, mediation, settlement conferences and voluntary, but not mandatory, arbitration.” p. 4. Available at <http://www.abanet.org/dispute/abapolicy.html>.

¹⁰Lester P. Schoene, Jr. and Marcelle E. Dupaw. *Facing Racial and Cultural Conflict: Tools for Rebuilding Communities, 2nd Edition*. (Washington, D.C.: Program for Community Problem Solving, 1994).

¹¹Susan Podziba, *Stakeholder-Shmakeholder: Strategies for Successful Brownfields Collaboration*, Brownfields '99: Alliance for 21st Century Livability, EPA, December 7, 1999. Susan Podziba is a facilitator and mediator

- working from the office of Susan Podziba & Associates in Brookline, Mass. Susan was the facilitator for EPA's brownfields ADR pilot at New Bedford, Massachusetts.
- ¹²Ibid.
- ¹³CPR Institute. *Self-Administered ADR: Its Advantages & How it Works*. p. 2. Available at <http://www.cpradr.org/selfadm.htm>.
- ¹⁴Michael D. Young, Esq. *Resolving Environmental Disputes with Environmental Team Mediation*. McClintock, Weston, Benshoof, Rochefort, Rubaclava & MacCuish, LLP. Los Angeles, California. p. 1. Available at <http://www.techstuff.com/myoung.htm>.
- ¹⁵U.S. Environmental Protection Agency. *EPA Brownfields Title VI Case Studies: Summary Report*, EPA 500-R-99-003. (June 1999). Available at <http://www.epa.gov/swerosps/ej/ejndx.htm#12898>.
- ¹⁶Sharif Branham, "Using Facilitation and Mediation to Manage a Brownfields Project." *Brownfields EPA Pilot News*. p. 2. (February 1999). Available through the Institute for Responsible Management at <http://www.instrm.org/bfnews/v2i2/6facil.htm>.
- ¹⁷U.S. Environmental Protection Agency. *EPA Brownfields Title VI Case Studies: Summary Report*, EPA 500-R-99-003. (June 1999). Available at <http://www.epa.gov/swerosps/ej/ejndx.htm#12898>.
- ¹⁸Michael D. Young, Esq. *Resolving Environmental Disputes with Environmental Team Mediation*. McClintock, Weston, Benshoof, Rochefort, Rubaclava & MacCuish, LLP. Los Angeles, California. p. 3. Available at <http://www.techstuff.com/myoung.htm>.
- ¹⁹Nancy Milsten, "Dispute Resolution for Environmental Conflicts," *ECOSTATES*. p. 9. (May/June 1998).
- ²⁰Ibid., p. 9.
- ²¹Ibid.
- ²²Ibid., p.10.
- ²³Ibid.
- ²⁴Linda D'Amico, "DEP's Office of Dispute Resolution Offers Alternative to Litigation." *Discharger*. No. 2. p. 1 (1997) Available at <http://www.state.nj.us/dep/dwq/discharg/v5n2e.htm>.
- ²⁵See description of Pennsylvania's Department of Environmental Protections alternative dispute resolution services at http://www.dep.state.pa.us/info_subject/fac_med/fs2062.htm.
- ²⁶U.S. Environmental Protection Agency, Office of Site Remediation and Enforcement. *EPA Cleanup News*. EPA 300-N-00-006, p. 4. (Spring 2000).
- ²⁷Institute for Responsible Management, Inc. *New Bedford, Mass., Brownfields Pilot Matrix*. (May 18, 1999). Available at <http://www.instrm.org/pmatrix/NewBedford.htm>.
- ²⁸Susan Podziba. Personal correspondence with the author. (April 3, 2000).
- ²⁹Susan Podziba. *Stakeholder-Shmakeholder: Strategies for Successful Brownfields Collaboration*. Brownfields '99: Alliance for 21st Century Livability. (December 7, 1999)
- ³⁰Ibid.
- ³¹Ibid.
- ³²Ibid.
- ³³Susan Podziba. Personal correspondence with the author. (April, 3, 2000).
- ³⁴U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry. *A Primer on Health Risk Communication Principles and Practices*. pp. 8–11.
- ³⁵Fair treatment means that no population, due to policy or economic disempowerment, is forced to bear a disproportionate burden of the negative human health or environmental impacts of pollution or other environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies" U.S. Environmental Protection Agency, 1998. As cited in the Institute for Medicine's *Toward Environmental Justice: Research Education, and Health Policy Needs*. p.1. (1999).
- ³⁶U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. *About Environmental Justice*. Available at <http://www.epa.gov/swerosps/ej/aboutej.htm>.
- ³⁷"EPA's Brownfields Initiative will empower States, communities, and other stakeholders in economic development to work together in a timely manner to prevent, assess, safely clean up, and sustainably reuse Brownfields." U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. *Brownfields Mission*. Available at <http://www.epa.gov/swerosps/bf/mission.htm>.
- ³⁸Robert D. Bullard, *The Environmental Justice Movement: Continuing the Struggle for Civil Rights*. p. 1. (February 1995). Available at http://www.utexas.edu/students/subtex/.web/volume1/issue5/Environmental_Justice.shtml.
- ³⁹In 1993 Browner made EJ an EPA priority. She stated, "many people of color, low-income and Native American Communities have raised concerns that they suffer a disproportionate burden of health consequences due to the siting of industrial plants and waste dumps, and from exposure to pesticides or other toxic chemical at home and on the job and that environmental programs do not adequately address these disproportionate exposures...EPA is committed to addressing these concerns and assuming a leadership role in environmental justice to enhance environmental quality for all residents of the United States. Incorporating environmental justice into everyday Agency activities and decisions will be a major undertaking. Fundamental reform will be needed in Agency operations." Quoted in the National Environmental Justice Advisory Group *Environmental Justice Fact Sheet*. (August 1999). Available at <http://www.epa.gov/swerosps/ej/ejndx.htm>.
- ⁴⁰William Jefferson Clinton. *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Executive Order 12898. (February 11, 1994).
- ⁴¹Ibid., section 1–102.
- ⁴²Institute of Medicine, *Toward Environmental Justice: Research, Education, and Health Policy Needs*. National Academy Press. Washington, D.C. p. 14. (1999)
- ⁴³Ibid., p.14—citing Goldman, B. and Fitton, L., "Toxic Wastes and Race Revisited" (1994), a revised edition of the 1987 report by the Commission for Racial Justice,

Toxic Wastes and Race In The United States: A National Report on the Racial and Socioeconomic Characteristics of Communities With Hazardous Waste Sites, United Church of Christ. New York: Public Data Access, Inc. (1987).

- ⁴⁴U.S. Environmental Protection Agency. *EPA Brownfields Title VI Case Studies: Summary Report*, EPA 500-R-99-003. (June 1999). Available at <http://www.epa.gov/swerosps/ej/ejndx.htm#12898>.
- ⁴⁵Under Title VI of the Civil Rights Act 1964, citizens can file complaints with EPA alleging discriminatory effects resulting from the issuance of pollution control permits by state and local government agencies that receive EPA funding. For more information see <http://www.epa.gov/swerosps/ej/html-doc/title6b.htm>.
- ⁴⁶42 U.S.C.A. sections 2000–2000d-7.
- ⁴⁷Other federal statutes that contain nondiscriminatory language are Section 504 of the Rehabilitation Act of 1973, Section 13 of the Federal Water Pollution Control Act Amendments of 1972, Title VIII of the Civil Rights Act of 1968, Title IX of the Education Act amendments of 1972, and the Age Discrimination Act of 1975. For more information on these statutes please see <http://www.epa.gov/ocr/othlawreg.htm>.
- ⁴⁸Molly Conrecode, *Lessons Taken from Chester. ECOSTATES*. p. 13. (1998).
- ⁴⁹*CRCQL v. Seif et al*, 132 F.3d 925 (3d Cir. 1997).
- ⁵⁰See *Seif et al. v. CRCQL et al.* (U.S. Supreme Court October Term 1997) for a detailed discussion of the Supreme Courts. Available at http://www.dep.state.pa.us/dep/deputate/ChiefCounsel/ch_petit.htm#CONCLUSION.
- ⁵¹Carol M. Browner, *Remarks Prepared for the Environmental Justice Roundtable*. p. 3. Detroit, Michigan. (July 17, 1998). Available at <http://www.epa.gov/swerosps/ej/html-doc/ejremark.htm>.
- ⁵²Simmons Buntin, *Environmental Liberty and Social Justice for All: How Advocacy Planning Can Help Combat Environmental Racism*. p. 1. (November 1995). Available at <http://www.econet.apc.org/envjustice/ejplan.html>.
- ⁵³Trust for Public Land. *The Economic Benefits of Parks and Open Space*. p. 5. (June 1999). Available at <http://www.tpl.org/newsroom/reports/econbenz/index.html>.
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- ⁵⁵Institute of Medicine, *Toward Environmental Justice: Research, Education, and Health Policy Needs*, p. 6.
- ⁵⁶U.S. Environmental Protection Agency. *EPA Brownfields Title VI Case Studies: Summary Report*, EPA 500-R-99-003. (June 1999). Available at <http://www.epa.gov/swerosps/ej/ejndx.htm#12898>.
- ⁵⁷U.S. Environmental Protection Agency, Office of Environmental and Compliance Assurance. *Environmental Justice Small Grants Program*. Available at <http://es.epa.gov/oeca/oej/grlink1.html>. For more information on EPA environmental justice grants see OECA's Web page on grants at <http://es.epa.gov/oeca/main/ej/grants.html>.
- ⁵⁸National Environmental Justice Advisory Committee. Final Report: *Environmental Justice, Urban Revitalization, and Brownfields: The Search for Authentic Signs of Hope: A Report on the "Public Dialogues on Urban Revitalization and Brownfields: Envisioning Healthy and Sustainable Communities."* (December 1996). Available at <http://www.epa.gov/swerosps/ej/html-doc/nejachtm.htm>.
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- ⁶⁰Center for Public Environmental Oversight and the Pacific Studies Center, *Citizens' Report on Brownfields*. p. 1. (December 1999). Available at <http://www.cpeo.org>.
- ⁶¹U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, *Brownfields Economic Redevelopment Initiative*, Quick Reference Fact Sheet, EPA 500-F-99-303. (December 1999). Available at <http://www.epa.gov/swerosps/bf/index.html#info>.
- ⁶²*Ibid.*, p. 1.
- ⁶³*Ibid.*, p. 1.
- ⁶⁴Miles Ballogg, brownfields coordinator for the City of Clearwater, Florida. Personal correspondence. (April 11, 2000).
- ⁶⁵*Ibid.*
- ⁶⁶Based on 1996 U.S. Census Report.
- ⁶⁷Community greening, as defined by *Community Resources*, is a program that works with municipal agencies and inner city communities to bring community members together to produce tree-lined streets, cultural gardens, neighborhood nurseries, adopted parks and/or community greenways. For more information see <http://www.communityresources.org/commgrn.htm>.
- ⁶⁸For more information see <http://www.etipros.com/>.
- ⁶⁹For more information see <http://www.capaccess.org/nnp/>.
- ⁷⁰Student Conservation Association, Inc., "Mission Statement." (September 22, 2000. Available at <http://www.sca-inc.org/about/about.htm>.
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4.1

TYPES OF BROWNFIELDS REDEVELOPMENT



5.1

Overview

In addition to understanding the importance of land-use planning, risk assessment, and institutional controls, local government professionals and community members must understand the wide range of redevelopment possibilities. This chapter discusses both model approaches to brownfields redevelopment that can be incorporated into a jurisdiction's long-term planning including concepts of infill development and integration of smart growth and eco-industrial principles. This chapter also briefly outlines specific types of brownfields redevelopment along with advantages, disadvantages, and case study examples from communities that have tried various types of redevelopment.

The following topics are covered in this chapter:

- 5.2 Infill Development
- 5.3 Transportation
- 5.4 Housing
- 5.5 Greenspace
- 5.6 Recreational
- 5.7 Historic Preservation and Brownfields
- 5.8 Rural Brownfields
- 5.9 Waterfront Brownfields
- 5.10 Military Base Reuse
- 5.11 Eco-Industrial Parks
- 5.12 Conclusion

5.2

Infill Development

Over the past century, urban centers throughout the country thrived thanks to strong industrial economies. As complex and bustling hubs of business, commerce, and transportation, emerging cities represented the triumph of modern technology, engineering, and architecture. At the same time, those same communities were forced to contend with highly concentrated human activities involving resource consumption and the resulting generation of waste by-products. As a result, many urban residents migrated to rising suburban communities; many industrial and commercial headquarters were soon to follow. Often, urban cores were left with defunct transit infrastructures, abandoned and contaminated industrial parks, and blighted, vacant properties that were structurally precarious, visually displeasing, and otherwise disruptive to the progress of a growing community.

Developing Sustainably

With the decline of industrial economies in the past fifty years, the dangers of sprawling external development patterns and the subsequent economic and social depletion of internal urban communities have been exposed. In response, initiatives for sustainable development encourage

the prosperity of emerging communities within urban boundaries. Common themes associated with sustainable development include creating equitable social and economic opportunities, satisfying livelihoods, and making a safe and healthy quality of life for all community members. The challenge is to strike a balance among different ideals of community development and to proceed in a fashion that benefits established municipal centers, community stakeholders, and the environment in the best manner possible.

Many current aims for sustainable development must retrospectively address errors of prior development such as industrial insults or poorly planned zoning. With this in mind, comprehensive plans must include clauses to remediate and to emphasize the redevelopment of vacant or brownfields properties within city boundaries. Not only does such a concept allow for the revitalization of metropolitan centers, but also it steers development away from neighboring communities and open spaces. The development of urban interiors, facilitated through planning, creative financing, and direct programming, is commonly referred to as infill development.

Infill development strives to address the needs of community growth by filling available spaces within urban centers before building in the undeveloped countryside . . . The underlying notion is to keep community resources—jobs, churches, schools, shops, restaurants, museums, and parks—where citizens are and vice versa.

Examining Infill Development

Infill development encourages community reinvestment through land reuse and economic revitalization—also the hallmark characteristics of brownfields redevelopment. Growth needs are addressed through reconfiguring distressed areas

by utilizing and retrofitting properties, buildings, and infrastructures that already exist. Simply put, infill development strives to address the needs of community growth by filling available spaces within urban centers before building in the undeveloped countryside—why develop outside city limits when properties are available next door?

Smart Growth

Smart growth is an approach to metropolitan planning that promotes the construction of housing and employment generators within existing communities and along transit corridors. Infill development, emphasizing reuse of areas already developed and served by urban infrastructure, is becoming increasingly linked to the smart growth concept; designed to conserve land and other resources, it is the antithesis of urban sprawl. By necessity as much as by choice, federal, state, and local governments are embracing infill development and devising tools and policies, as well as retrofitting buildings and infrastructure, to support smart growth.

Among the most important smart growth tools are brownfields redevelopment programs. By encouraging land reuse projects on blighted or contaminated industrial properties, those programs promote neighborhood revitalization in areas already served by roads, transit, and utility networks as well as public safety and education services. In turn, such activities generate tax revenues and economic activity that can serve to revitalize the community as a whole.

Revitalizing Urban Cores

Infill development requires researching and studying the many components that make up a community, to understand the disruptive changes that occurred in neighborhoods that were unable to thrive as a city evolved. Variables including local economics, transportation and resource logistics, cultural traditions, and changing demographic trends must be factored into the infill development equation. In return, infill development provides a pragmatic framework and vision that include the long-term goals of a community as well as the benefits of learning from and correcting previous oversights. Infill development thus

becomes the primary approach to revitalizing and strengthening community centers before seeking expansion alternatives in greenspaces.

Specifically, infill development stresses building residential, commercial, industrial, and public mixed-use facilities on unused or underused properties within municipal borders. Mixed-use development centralizes community resources and interests and creates diverse and vibrant neighborhoods. The underlying notion is to keep community resources—jobs, churches, schools, shops, restaurants, museums, and parks—where citizens are and vice versa. Such planning reduces automobile traffic congestion and commuting times by facilitating pedestrian, bicycle, and public transit options. In addition, infill strategies complement the sustainable nature of a community by returning distressed properties to welcoming and viable facilities, encouraging economic development through the creation of accessible commercial and residential districts, and creating employment opportunities within disadvantaged neighborhoods. Moreover, infill development discourages the emigration of citizens, jobs, and industries that leads to sprawl. When combined, these aspects of infill development improve the overall quality of life for all community members.

Combating Urban Sprawl

A simple concept in theory, infill development benefits from growing public aversion to urban and suburban sprawl. However, lending institutions and investors are more likely to place higher precedence on immediate profit return and security than on environmental sustainability. Although community redevelopment is a sound long-term investment, investments required to launch infill projects are often costly. Up-front infill development expenses include contaminant treatment, structure demolition, and zoning and permit preparation—factors that cause developers to shy away from infill projects. Uncertainties associated with remediating actual or perceived contamination on brownfields sites can also be prohibitive to infill projects. Therefore, many private sector institutions favor greenfields development projects free from complicated contamination and financing pitfalls. However, the

long-term ramifications accompanying sprawling development are often hidden beneath the luster of new suburban developments.

Although existing brownfields properties may require additional initial investments, the costs associated with sprawling development can be much more expensive and frustrating for community members in the long run. First, expansion into the countryside requires large investments to extend municipal infrastructure including roads and sewers as well as fire and police services. Financing a larger community requires higher taxes to pay for the extension of municipal resources and institutions. Another downside of urban sprawl surfaces with unanticipated traffic and pollution problems caused by commuting. In addition, urban sprawl permanently alters natural, open space. Finally, sprawling development leads to community migration,

threatens the stability of centralized business and cultural districts, and diminishes natural boundaries between urban and satellite communities. The result is a decreased quality of life and increase tension between both communities.

Infill development strategies focus on rebuilding urban centers to maintain the social and economic integrity of centralized neighborhoods. By looking inward for growth alternatives, city planners are able to encourage community prosperity while curtailing urban sprawl. Replacing traditional images that cast downtown areas as oppressive, looming skylines and swarming urban jungles, rising perceptions of infill development stress convenience and semblance among structures and thoroughfares. A new era of urban revitalization aims to recapture the traditional spirit boarded up or torn down in the hearts of many cities.

The River District, Portland, Oregon

The River District is a 147-acre industrial area undergoing extensive remediation and renovation that will bring more housing, improved transportation, and upgraded infrastructure to the area. The project is a collaborative effort between public agencies such as Portland's Departments of Transportation, Planning, Parks, and Environmental Services, as well as the Portland Development Corporation. Private interests involved in the project include four property owners, developers, local residents, and nonprofit social service agencies. That only four property owners existed, with no abandoned properties in the area, greatly facilitated the redevelopment of the site.

High-density housing is a primary feature of this area. Units that range from efficiency to penthouse are built at a density of 80 units per acre. The housing goals of the area are to match overall city income levels so properties will be for sale and for rent at prices ranging from low-income to premium rates. That housing configuration is expected to match city demographics and is guaranteed for twenty years. As one person vacates a residence, the subsequent occupant must have similar income characteristics. In total, 550 housing units are being constructed.

To complement housing redevelopment, the River District will host a range of small businesses and office space. A food research and business center—the \$8.8 million Food Innovation Center—sponsored by Oregon State University and the Oregon Department of Agriculture will be housed in a 40,000-square-foot facility in the area.

The River District is also undergoing many infrastructure improvements. Streets, parkways, and a bridge that access the area are being renovated. Bikeways, new sidewalks, trees, and lighting are being added to the neighborhood.

Limited and underground parking is a hallmark feature of infill design in the River District. Planners and developers are working to limit use of cars and to limit nonpoint-source run-off from parking lots by using underground facilities to increase green areas around the district. Areas previously destined for paved parking facilities will be replaced by a \$4 million classical Chinese garden.

In general, it is difficult to argue against the concept of sustainable development and community revitalization. However, infill development is not free from opposition. When theories are put into practice—especially those including brownfields redevelopment projects—considerable disagreements surface as the private interests of local community stakeholders are surveyed.

Meeting Stakeholder Concerns and Creating Incentives

When one is confronting infill development strategies, it is critical to acknowledge the concerns of various stakeholders who stand to be affected by potentially large-scale and time- and labor-intensive projects. Because of a range of misconceptions, as well as fears often surrounding brownfields sites and renovations, redevelopment authorities must be wary of the private interests of landowners, developers and business owners, and citizens and neighborhoods in the vicinity of a proposed infill site. Moreover, it is essential to recognize the complexities of existing institutional controls regulating development practices.

By creating incentives for infill development efforts such as brownfields revitalization, local governments encourage community reinvestment by demonstrating leadership and commitment to community vitality.

To combat tendencies to develop lands outside city limits, municipalities must develop a diverse range of incentives to encourage infill development. Common programs offered by local governments include technical assistance, liability assurances, financial subsidies, and community involvement programs. By creating incentives for infill development efforts such as brownfields revitalization, local governments encourage community reinvestment by demonstrating leadership and commitment to community vitality. In addition, municipal authorities lay groundwork for redevelopment efforts among

community stakeholders by shouldering the burden of complicated technical, legal, organizational, and financial tasks.

Contamination: Technical Expertise and Liability Concerns

Apprehension stemming from misconceptions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) liability policies is often a discouraging factor in infill projects on brownfields properties. Most commonly, a landowner simply does not want to finance costly remediation efforts and, therefore, the site is unattractive to potential investors. Other times, unless a brownfields is highly contaminated and may incur CERCLA liabilities, a landowner who believes that nearby redevelopment will increase the value of the property is likely to hold out—even if the property is in a state of disrepair. This tactic often leads to the seemingly ever-present inertia problems related to convincing local landowners of the merits of selling their properties, which hinders the redevelopment process.

Area developers and business owners are often at odds with infill development regimens, especially where complications arise because of tainted properties. Whether a property is a Superfund site may be irrelevant, as the negative stigma is associated with any contaminated tract of land. In addition, while many developers may be interested in renewal and infill projects, the intricacies of such projects often extend beyond the practical capabilities of an individual firm. Specialized contractors might be needed to extract, treat, or dispose of pollutants prior to addressing construction initiatives.

In those situations, local governments may offer landowners and developers technical assistance when confronting brownfields redevelopment issues. In addition to engaging appropriate federal and state agencies in site assessments, a municipality may purchase contaminated or vacant properties and bring them up to code before recruiting developers for revitalization projects. Such initial renovations may include site assessment and identification, infrastructure construction and retrofitting, and assistance with organizational and scheduling protocol. In this

way, a local government provides the impetus for redevelopment projects by shouldering a portion or all of the initial aspects of site remediation.

After inertia problems have been addressed, a number of programs may be employed to assuage liability concerns of landowners, potential investors, and developers. In many states, voluntary cleanup programs (VCPs) exonerate a landowner or developing agency from further liability concerns in return for initiating remediation efforts. The assurances may be nothing more than a certificate acknowledging an attempt to treat contaminated properties. In other cases, legal contracts in the form of Covenants Not to Sue are issued to protect site owners and developers against future liabilities should they discover unanticipated environmental hazards.

For more information see discussion of voluntary cleanup programs in section 2.14: Voluntary Cleanup Programs; for a detailed listing of state VCPs see Appendix IV.

Along the same lines, environmental insurance companies are developing policies to protect lenders, investors, and developers from retroactive class-action lawsuits brought on by unforeseen environmental and public health issues. In some communities, local governments are purchasing environmental insurance policies to cover large properties in order to provide redevelopment incentives. Environmental insurance policies can encourage the redevelopment of legally and financially uncertain properties.

For more information see discussion of environmental insurance in section 6.4: Banking Policies and Regulations.

Logistics

Local neighborhoods may oppose infill development because of varying interests and opinions. Diverse opinions among citizens and neighborhoods concerning the nature and location of mixed-use districts must be considered. Public disfavor toward redeveloping blighted property often raises concerns relating to traffic detours as well as to ambient noise and air pollution generated during remediation and subsequent construction projects. Moreover, neighborhoods may hold conflicting perceptions of the shopping malls or

sports arenas that will anchor mixed-use developments. Some stakeholders will welcome the potential for great entertainment and service opportunities. Others will see those facilities as invasive to traditionally residential areas, bringing traffic congestion, litter, and other negative effects. Finally, although infill development reduces sprawl by concentrating residences and business districts, citizens may fear that neighborhoods will reach uncomfortably dense population levels—potentially creating a stifling atmosphere.

Local governments must involve all stakeholders in the initial phase of project development . . . Inclusive stakeholder involvement in the planning process lends to community satisfaction and prevents the omission of the interests of a particular community member or organization.

Some developers hold reservations toward neighborhood revitalization efforts because of difficulties in selling such large-scale, mixed-use conglomerations. When selling an individual or multi-unit residential facility, the dimensions of the product are clear. Mixed-use projects—filled with residential, retail, transit, and infrastructure variables—are more difficult to market and sell and, therefore, riskier to develop. In addition, neighborhood centralization affects local retail and transportation industries by reducing or rerouting automobile traffic patterns. On the one hand, a tight-knit shopping district that caters to pedestrian traffic may be very enjoyable to patrons living within walking distance. On the other, when older thoroughfares are altered or closed, immediate traffic snarls can be frustrating to drivers as well as to residential neighborhoods in the vicinity. Finally, unless properly addressed, shipping, receiving, and consumer vehicle accessibility may diminish and hurt local businesses.

To address an array of logistical concerns, local governments must involve all stakeholders in the initial phase of project development. Local

governments are able to encourage infill development through publicized public outreach. Inclusive stakeholder involvement in the planning process leads to community satisfaction and prevents the omission of the interests of a particular community member or organization. In addition, multiple opinions and expertise contributed during the planning process help ensure a comprehensive method of operation. Stakeholder involvement must be addressed both in intergovernmental and interdisciplinary contexts. For example, an infill development project is likely to include governmental agencies involved in housing, commerce, transportation, and environmental issues; a number of competing developers; a hired consultant or facilitator; representatives from local lending institutions; independent scientific researchers; various special interest groups; and the general public. By synthesizing an array of stakeholder opinions, local, state, and federal agencies demonstrate their ability to garner and maintain support for infill development projects in the community.

Specific logistical concerns can be addressed through appropriate planning authorities including local and regional municipal planning offices or departments of transportation. These agencies can be invoked to clarify traffic rerouting issues during the course of infill projects. In addition, they are able to design various roadways and infrastructure to maintain existing or to accommodate new transportation vehicles. For example, while centralizing certain mixed-use districts, a metropolitan planning organization may create a network of wider service roads and loading dock facilities to accommodate large trucks that supply local industries. Consumer parking needs may be addressed through multi-layered garages or underground facilities.

Property Taxes and Zoning

While city planners and developers tout the life that infill development complexes will breathe into a district, neighborhood members are likely to see increased property taxes. This issue is accentuated when bountiful economic redevelopment in mixed-use districts raises property taxes and other costs of living in marginal low- to moderate-income neighborhoods. In addition, increased

capital gains taxes may further discourage a landowner from selling the parcel. In other cases, where property owners cannot be determined, brownfields parcels are often subject to back taxes and defaulted mortgages. Nonetheless, increased taxes are indicative of increased property values.

Infill development also faces setbacks because of bureaucratic inconsistencies that inadvertently discourage efforts to renovate existing properties. For example, zoning ordinances are applied on a citywide basis and often cannot bend to accommodate individual projects or districts. Development and infrastructure expenses are typically assessed according to the total area of available land instead of on a plot-by-plot basis. Therefore, unless the entire capacity of a property is planned, it is challenging to encourage small-scale projects in a district where a single developer might fear assuming the costs of providing multi-server roads and sewer systems. In turn, lengthy and costly negotiations are often avoided to develop on the fringes or beyond the perimeter of a municipality. Satellite communities competing for employment and industrial development encourage sprawl by luring corporations with incentives such as fee waivers, tax abatements, and free infrastructure connections.

Accordingly, local governments have created a number of creative methods to offset tax and zoning concerns related to infill development. In some cases, local officials may provide tax credits and abatements to developers who engage in infill development projects. For example, tax increment financing (TIF), operates by allowing local governments to create TIF districts (generally blighted or abandoned areas) where local taxes are frozen for a designated time period (usually between ten and 25 years). The municipality then floats bonds for the estimated amount of tax revenues that would be gathered from the properties after revitalization, when property values have increased. These funds are directed towards projects in the TIF district to help facilitate revitalization. Activities might include assessments, site acquisition and preparation; on-site and nearby infrastructure improvement; and on-site structural rehabilitation. The bonds are paid off with the tax revenue generated by the new development in the district.

States and federal programs can also lower property taxes on infill development sites. Properties located in U.S. Department of Housing and Urban Development (HUD) Empowerment Zone (EZ) and Enterprise Community (EC) districts are eligible for tax abatements and credits on properties, construction materials, and job-training programs.

For more information see section 6.2: Public Financing, and discussion of the U.S. Department of Housing and Urban Development in Appendix I.

Emerging revisions to zoning codes allow infill projects to circumvent citywide ordinances. For example, the Rehabilitation Subcode—dubbed the “Smart Codes”—was adopted by the New Jersey legislature to allow specific buildings, infrastructure, and properties to be addressed outside the context of inclusive zoning restrictions.¹ In many cases, older buildings throughout New Jersey were constructed as zoning codes were developing and conform to outdated structural standards. Therefore, retrofitting the building to comply with modern zoning, health, and safety ordinances can be so expensive that stakeholders prefer to develop outside city boundaries or to demolish and rebuild existing facilities. However, the Smart Codes facilitate reusing structures by making exceptions to zoning requirements. Specifically, the Rehabilitation Subcode provides latitude for details that may be negotiable—stair width, window height, restroom fixtures—in consideration of the overall advantages of infill development. In effect, these codes are the zoning ordinances for aged buildings, infrastructure, and properties. Most recently, the Smart Codes have led to the conversion of a vacant office building into a multi-residence dormitory for graduate students in the Newark metropolitan area.² Encouraged by the successes of New Jersey’s Rehabilitation Subcode, state and local governments are researching and developing retroactive zoning codes in Connecticut, Delaware, Maryland, New York, and Pennsylvania.

Although often complicated and based on sustained commitment among lenders, investors, developers, and local governments, tax and zoning incentives are an integral part of encouraging brownfields infill redevelopment.

Financing

Financial concerns underlie the gamut of issues surrounding infill development. Regardless of the specific interests of landowners, developers, lending institutions, or the public, funding measures are usually the answer. Thus, the most convincing form of support for infill development comes through financing incentives. As previously stated, local governments often cost-share or directly fund activities to prepare infill sites for groundbreaking. For example, Kalamazoo, Michigan, provided the impetus for a reuse project by purchasing a 3.5-acre abandoned brownfields site.³ The overall cost of site preparation totaled \$89,000 but was supplemented by federal and state grants applicable to site assessment and infrastructure construction expenses. In addition, the Kalamazoo Brownfield Redevelopment Initiative orchestrated transactions that allowed property payments to the city to fund neighborhood job-training programs—like a revolving loan fund. Other measures seek to cut tax burdens on infill development projects. Finally, some communities have attempted to generate infill development by selling brownfields properties at minuscule prices—literally a few dollars and cents per acre—in hopes of refurbishing the neighborhood, creating jobs, or bringing services to the community. Any of those efforts would encourage economic activity to revitalize a blighted area.

In addition to direct financing measures, local governments must explore state and federal grants, loans, and other financing programs that can be applied to infill development. Moreover, local governments must develop planning initiatives to accommodate as many funding opportunities as possible. Stated simply, the money is often available, and local governments must find ways to go out and get it. For example, HUD’s EZ/EC programs include Community Development Block Grant (CDBG) funding, Section 108 Assured Loans, and Brownfields Economic Development Initiative (BEDI) loans, all of which may be applied to community redevelopment projects. In addition, the U.S. Environmental Protection Agency (EPA) Brownfields Action Plan (BAP) and Brownfields Job-Training and Demonstration Development (BJTDD) grants provide specific

funding for site assessment and job development programs. Also, EPA's Brownfields Cleanup Revolving Loan Funds offer low-interest loans to developers, recycling principal and interest payments into a pool of money that can be used for further project financing. Beyond start-up financing, a number of federal agencies offer funding for economic redevelopment, infrastructure retooling, and efforts to address environmental justice issues. The Economic Development Administration offers a number of programs that can promote economic redevelopment in distressed urban and rural settings, such as Title IX Grants and the Public Works Planning Program. Similarly, U.S. Department of Agriculture loans, including Rural Utilities Loans and rural EZ and EC programs, cater to infill projects in rural settings. Finally, U.S. Department of Justice Weed and Seed funding aims to improve neighborhood quality by supporting outreach programs that stress understanding and communication in ethnically diverse and lower-income communities to diminish racial and gender stereotypes.

For more information on specific federal financial and technical assistance programs see Appendix I: Federal Interagency Working Group Summary and Contacts.

Infill development is the conceptual foundation governing brownfields renovation and metropolitan sustainability issues. Not only do infill practices counteract trends toward urban and suburban sprawl, but they also encourage reinvestment in and propagation of historical and cultural business and residential districts at the heart of cityscapes. Through comprehensive outreach initiatives, infill projects may encompass the interests of all community stakeholders. To ensure the success of infill goals, local governments must also provide assistance through comprehensive planning, technical assistance, liability assurances, and funding measures. In so doing, local governments may effectively synthesize infill development and brownfield renovation practices to encourage sustainability in established and emerging metropolitan areas for years to come.

With an understanding of community revitalization strategies including brownfields

reuse, infill development, and smart growth, one must examine various factors involved in redevelopment projects. As mentioned, many of those aspects are often complex both in their own right and even more so among the interconnected relationships within a metropolitan community. Yet it is important to recognize the special roles, contributions, and complications surrounding the major themes of brownfields redevelopment. Sections 5.3 through 5.6 will discuss major projects in which brownfields redevelopment may be combined with other community infrastructure and institutions. Those areas include the renovation of transportation infrastructure, the construction of affordable housing units, and the creation of greenspace and recreational areas on former brownfields sites.

One critical aspect of this process is the integration of transportation planning and infrastructure into redevelopment strategies.



5.3

Transportation

Historically, the locations of urban industrial facilities in the United States were chosen largely because of their proximity to various transportation options. The rise of interstate highway systems and airports has shifted industrial operations away from waterfronts and rail corridors,

leaving behind abandoned or underused sites. Still, the central location and access to transportation that characterize those sites make them potentially viable for redevelopment.

Links between brownfields and various aspects of urban infrastructure are becoming increasingly critical as local governments strive to develop comprehensive approaches to infill development.

Links between brownfields and various aspects of urban infrastructure are becoming increasingly critical as local governments strive to develop comprehensive approaches to infill development. In particular, a city's transportation infrastructure can help or hinder the successful redevelopment of old industrial sites, which are often centrally located in downtown or waterfront areas, but which may be physically separated from the surrounding communities.

Improving a city's transportation infrastructure through mass transit, bicycle and pedestrian paths, bridges, and road improvements or construction can bring new life to areas struggling to redevelop. Transportation corridors can move employees, consumers, and residents into revitalizing areas. Such corridors also increase commercial access to businesses in those areas and remove a tax burden from municipal rolls. The increased flow of goods and people is a critical factor that can draw life to blighted, often forgotten neighborhoods while stemming the flood of development at the urban fringe. In addition, infrastructure improvements help local governments make brownfields redevelopment viable in their communities.

Transportation is linked to brownfields reuse by history, new federal policies, and common sense. Coordination between transportation improvement programs and brownfields programs at the state and local levels can provide multiple benefits to both programs. The connection be-

tween transportation and brownfields redevelopment falls into three major categories:

- Redeveloping brownfields into transportation facilities;
- Improving transportation access on or near brownfields sites; and
- Adopting transportation policies that encourage brownfields redevelopment.

Creating Transportation Facilities

Because many old, industrial facilities are located near rail corridors or on riverfronts, the infrastructure is in place to turn them into transportation hubs for the community. In addition, redeveloping a brownfields property into a transportation facility allows the local and state governments to access an entirely new source of funding (see section on Transportation Equity Act for the 21st Century (TEA-21) and Brownfields in this section). Federal transportation funds can be used for cleanup costs necessary to a project's completion (e.g., removing hazardous materials from a future bus station).

Many historic railroad stations can be restored as part of a brownfields redevelopment. Oil, fuel, and other contaminants from locomotives, leached creosote and paint, chemicals used in cleaning, and other pollutants may have seeped into the soil. Lead and asbestos are common features in old industrial buildings, including railroad stations and shops. The downsizing of rail facilities associated with declining passenger traffic and the migration of trackside warehouses and industrial plants to other locations has contributed to the underuse of some station properties. Restored rail stations not only can act as intermodal transportation centers, but also can serve as anchors for revitalizing downtowns as livable urban places.

Many redevelopment projects have combined traditional transportation centers into a multimodal transportation hub. This method of seamless travel benefits travelers by allowing them to reach their final destination without gaps or breaks in their journey. There are also cost savings to linking transportation providers into a common facility.

The benefits of redeveloping a brownfields site into a transportation center include the following:

- Giving the state and local governments access to TEA-21 and other transportation funds for cleanup and redevelopment;
- Combining multiple programs to meet dual goals of economic development and mass transportation goals;
- Maintaining and restoring historically important train stations to help preserve community heritage; and
- Serving as an anchor for revitalizing downtowns by increasing commerce and traffic flow in the community and by creating a greater marketplace for goods and services.

Improving Transportation Access on Brownfields

Improving access to and from a site is a key component in making a piece of property more viable for commercial or industrial redevelopment. Brownfields sites are often located in areas with a transportation infrastructure already in place. Improving this infrastructure can both be economically feasible and provide exponential benefits to the redevelopment potential of a project. The improvements include new turning lanes, increased parking, better transit access, pavement repairs, bike and walking paths, improved physical

and design barriers, bridges across waterfronts, and signal changes at nearby intersections. Such transportation improvements at brownfields sites can be considerably less costly than expensive transportation upgrades to new developments in the suburbs (e.g., a new road to connect the development to an interstate highway).

Federal transportation funds can be used for improving access at a brownfields site. However, local and state governments must be very careful that funds for cleanup and removals are used specifically for the transportation improvement and not for the development of a non-transportation-related facility.

Transportation Policies Related to Brownfields Redevelopment

Until recently, the U.S. Department of Transportation (DOT) discouraged using federal transportation funds on brownfields. State and local officials were encouraged to avoid contaminated sites when possible. Since 1997, DOT has participated in the Federal Interagency Working Group on Brownfields as well as the Brownfields Showcase Communities project, to examine ways in which DOT programs can be used to remove the barriers to redevelopment. In April 1998, Secretary Rodney Slater announced that DOT funds could be spent on the assessment and cleanup of brownfields, provided that the activity was part of certain eligible transportation projects.

Restoring Railway Stations in Grover Beach, California

Grover Beach is one of three cities along the southern coast of San Luis Obispo County, located about fifteen miles south of the city of San Luis Obispo, California. In 1887, D. W. Grover, founder of the Town of Grover, had a vision of a community that included a hotel and a rail station near the beach. He recorded a map with San Luis Obispo County that created thousands of small parcels (50' x 150' or smaller) in the area of present-day Grover Beach. Development of those parcels occurred without adjoining streets or other improvements.

D.W. Grover believed that the small parcels and a train station would attract tourists and investors. He gave Southern Pacific Railroad right-of-way access to the sites. Unfortunately for the Town of Grover, Southern Pacific constructed the sought-after station in nearby Oceano, diverting tourists from Grover Beach. The small parcels of land have caused a lack of public improvements that has persisted for decades and continues to cause problems within Grover Beach. A 1992 analysis of land-use and economic data showed areas within the city where the full use of land and buildings is being impaired by the presence of nonconforming land uses, old or obsolete buildings, undersized and oddly shaped parcels, and inadequate public improvements. The problems exceed the capacity of the private sector or the city to correct independently, which, in turn, discourages investment in such areas.

In the 1980s, the city made its first attempts to establish a multimodal transportation facility at the same location where D. W. Grover had originally envisioned that the train station would have been. It took the passage of Proposition 116 in the early 1990s and a statewide effort to expand rail commuting to make this plan a reality.

In 1996, Amtrak began rail service with two rail stops at the newly constructed station. The area around the station includes the historic Coastal Branch of the Southern Pacific Railroad, scenic California State Highway 1, and the dunes and beaches of the Pacific Ocean portion of Pismo State Beach.

Revitalization Activities

The goal of Grover Beach's brownfields redevelopment effort is to allow reuse of contaminated parcels of land to alleviate economic, physical, or environmental problems that are preventing the full and beneficial use of public and private properties within the city. Redevelopment is the key to the long-term economic health of Grover Beach. Through its redevelopment plan, Grover Beach is allowing the community to grow and prosper by increasing job opportunities, retaining local businesses, increasing local shopping opportunities, and improving the overall appearance of the city. A redevelopment plan, coupled with the train station and other capital improvements, is giving the needed boost to private sector investment.

It is important to note that the city cannot annex property to provide the land needed for economic growth. Moreover, the available vacant land in the city is not in a central location or zoned for commercial growth. Those factors have left redevelopment as the only tool the city has to create the proper environment for economic renewal and growth. Without redevelopment the city believes that the commercial viability of the Grover Beach will continue to stagnate as other communities attract and retain business.

The city identified a number of potential redevelopment projects to alleviate the blighted condition found in the Grand Avenue area. One of the goals of Grover Beach's Improvement Plan is to strengthen the city's image as a tourist destination by encouraging visitor-serving development at the main gateways to the city. This plan involves a number of projects designed to expand the visitor-serving businesses and to improve the economy of West Grand Avenue between Fourth Street and the entrance to Pismo Beach State Park, the original location of D.W. Grover's vision for a station 100 years ago. As part of this plan, the city developed a strategy in 1991 to build the train station.

The development of a multimodal transportation facility is the cornerstone for all of the city's redevelopment efforts. The designated parcel of land for the station is a strip of land 120 feet wide, between the railroad and California Highway 1. The parcel had not been in productive use for over fifty years under jurisdiction of the County of San Luis Obispo. The parcel contains significant amounts of wetlands. In fact, almost all of the northern 25 percent of the parcel is declared wetland areas. The city recognized the importance of the wetlands to the environment and the community. To use federal grant monies, the city could not destroy that natural buffer to the ocean. Federal, state, and city agents had to revisit the design of the station and property.

The city purchased the adjacent private property to survey the wetlands and save them from future environmental damage. The city completed a Phase I environmental assessment of the property and found no significant contamination other than building debris and other material dumped onto the vacant land over the years. The change in design called for the city to take ownership of an additional adjacent property. The property and old recycling center received the city designation of blighted land. An assessment of that property and a number of older residences in the area revealed no significant contamination. Thus, although considered to be blighted, the properties did not face the negative stigmas associated with contamination and remediation measures.

The city adhered to construction plans to build a central point for bus, taxi, and train transportation. The station hosts the Amtrak ticketing station and has room for retail stores. In the near future, the city would like to have visitor-service commerce such as a retail travel agency or car rental group within the station.

The benefits of building the station and removing the blighted areas are already visible. Recently, construction was started on a property adjacent to the station. This 7,000-square-foot, two-story building will host retail and office space. More people are using the station and the economic future for Grover Beach looks brighter.

Many local governments have followed DOT's lead in supporting urban revitalization by coordinating transportation goals with land redevelopment programs. In addition to extra funds made available for transit programs, joint transportation and economic development projects can also increase transit revenues, as well as the demand at brownfields sites. Policies that integrate transit systems with surrounding brownfields redevelopment can benefit both programs.

Transportation policies are also affecting clean air programs. New facilities require air quality permits; this requirement creates a challenge for local governments not meeting federal air quality standards under the Clean Air Act Amendments of 1990. However, a new facility located in the center of an urban area can help reduce transportation-related emissions, assuming the project is centrally located and served by public transportation. For example, automobile emissions to travel to a site located in the exurban fringe

North Marine Drive, Portland, Oregon

Portland's brownfields program has incorporated its department of transportation into various projects. A wide range of transit improvements is planned as part of an effort to revitalize the city's industrial areas. However, the impact of an urban growth boundary on Portland's real estate market is in no small part responsible for the high level of brownfields redevelopment in that city.

By tying the city's transportation plan to its brownfields programs, the city can better manage the urban growth boundary and assist with traffic issues that may have arisen from an increase in density. In Portland, the brownfields program is housed in the city's department of transportation. Although transportation and land-use activities are closely linked, the department of transportation partners with other departments to facilitate redevelopment. Department heads from every major city agency are members of the brownfields policy committee. This involvement keeps other departments informed of brownfields program activities, encourages them to make brownfields projects a priority, and uses program advisors with a wide range of disciplines and talents. Finally, involvement of other departments makes the brownfields program a city program rather than simply a department of transportation project. Politically and practically, this involvement can be the key factor that makes a program successful.

The North Marine Drive project provides an example of how this coordination has worked successfully. The project involved improving a major surface-route connection between Interstate 5 and Portland's emerging Rivergate international shipping terminal through a heavily industrialized area. The 2,800-acre Rivergate industrial district is a key part of the economic development plan for the community and is attractive for industries dependent on rail, boats, or both.

Instead of building a new road, the local government allocated federal funds to widen an existing road, and remediated the contaminated land beneath it. By not building a new road over nearby undeveloped land, the city met environmental goals by saving nearby wetlands and by remediating the contamination located on the site. The Federal Highway Administration provided \$14.6 million of the \$25 million required to widen the 2.2-mile-long road from two to five lanes.

Completion of the new roadway provided access to underused land, and seven businesses have since located to the area, including a clothing distributor that relocated from a suburban location. Currently, forty-five businesses are located in the Rivergate industrial area, employing 3,300 people. After improvements to the North Marine Drive are complete, the area is expected to employ 9,000 people. Since the Rivergate industrial area is next to an EZ/EC district, job creation in the Rivergate area may directly benefit the low- to moderate-income residents in the vicinity. By coordinating among transportation, environmental, and economic development goals, the City of Portland was able to maximize its investment in the North Marine Drive project.

DOT Links Brownfields and Transportation

“Returning brownfields to productive use creates a foundation for new economic opportunities and revitalized communities. I want transportation to play an active role . . . in working with communities to address brownfields. Transportation is a key to brownfields redevelopment. Why? It gives access so people and goods can easily move in and out. This means fixing up existing infrastructure such as highways, waterways, and public transportation. And it means new transportation-related land use such as intermodal transportation terminals and bus barns.”

Source: Secretary of Transportation Rodney E. Slater, April 22, 1998.

would probably be higher than to a site located in a downtown area.

TEA-21 provides funding for Congestion Mitigation and Air Quality (CMAQ) improvement. CMAQ funds transportation projects that help state and local governments meet Clean Air Act requirements. Eligible activities include traffic flow improvements, transit improvements, travel demand strategies, and public automobile conversions to cleaner fuels. Many of those activities could be used as part of a brownfields redevelopment program.

Funding: TEA-21 and Brownfields
The Transportation Equity Act for the 21st Century authorizes spending of approximately \$200 billion of federal surface transportation funds between 1998 and 2003. Within TEA-21, a number of programs exist that might be used in brownfields redevelopment. In general, TEA-21 funds can be used for brownfields remediation in the following two ways:

- Transportation funds can be used to pay directly for the remediation of contamination that lies on the site or along the path of a transportation improvement (e.g., funds may be used to create a bike path, walkway, road, or transportation facility directly on top of a brownfields parcel); and
- Funds may be used for transportation improvements that help stimulate the reuse of nearby brownfields by enhancing the value of the property for private or public users (e.g., funds may be used to improve transportation infrastructure in order to better connect an area with multiple brownfields to an urban or downtown area);

The majority of TEA-21 funding is disbursed through the Transportation Improvement Program (TIP). To obtain federal funding, local governments must include their project in the TIP for their region, which is developed by the region’s metropolitan planning organization (MPO). The process for getting a project into an MPO’s TIP varies from state to state. A city or county planning office should provide the information required to propose a project for TIP funding. Most federal transportation funds require that state or local governments cover at least 20 percent of the project’s cost. In most regions, the TIP process occurs only once every two to three years, but congressional earmarking of funds can speed this process considerably.

A quicker way of receiving TEA-21 funds for a brownfields redevelopment is to apply directly to DOT for grants and loans. While this pot of funds is considerably smaller than TIP, it can be much more easily accessed. Two programs related to brownfields redevelopment are the Transportation and Community and System Preservation (TCSP) pilot grant program and the Rail Rehabilitation and Improvement Financing (RRIF) loan program.

Table 5.1 provides a list of specific TEA-21 programs that can be used to fund a brownfields redevelopment project.

Transportation and Community and System Preservation Pilot Grant Program

The Transportation and Community and System Preservation pilot grant program targets new and innovative transportation projects. Many brownfields projects could make use of these

Urban Transitway and Dock Street Connector, Stamford, Connecticut

One goal of the brownfields program in Stamford, Connecticut, is to create better transportation patterns and facilities in the city. The city plans to accomplish this goal through the Stamford Urban Transitway and Dock Street Connector projects. Stamford sees improvements to its transportation system as integral to eliminating blight, improving access to previously underused areas, and reducing choked roads and their environmental effects in and around the harbor. The transportation component of Stamford's brownfields program is the Stamford Urban Transitway and the Dock Street Connector, a series of new roads, infrastructure improvements, and increased access to public transportation. Stamford is creating a transportation center in its harbor area to accommodate public transportation and commuters. These transportation accommodations will create a better facility for citizens using public transportation, and the new transportation routes will ease some of the traffic congestion and bottlenecks around the city by improving circulation in the harbor area.

The Dock Street Connector will be a new two-way, four-lane connection between the Stamford Transportation Center and Interstate 95 (I-95). The connector will provide a vital link between the primary federal highway of the East Coast and the nation's busiest interstate commuter rail. The Stamford Transportation Center includes: an Amtrak Station to accommodate the Boston-Washington high-speed rail line; an express stop on the MetroNorth commuter rail line, the terminal for all City of Stamford bus routes; a station for the regional and interstate buses; a large pickup and drop-off area for taxis and corporate vans; and an existing 800-car commuter parking garage. It is also the site of a \$100 million investment of Interstate Surface Transportation Efficiency Act (ISTEA) funds to expand platforms and commuter parking, which is currently under way.

The Dock Street Connector will dramatically improve circulation in the harbor area while eliminating the blighted area. The construction of the Dock Street Connector will allow the city to handle increased traffic and pedestrian circulation in the area; to improve access between the South End and the Central Business District; to improve the quality of streets and public spaces; to establish a mixed-use framework to accommodate redevelopment and rehabilitation within this area; and to remove east-west commuter and truck traffic now clogging narrow residential streets. Residents in the South End and Waterside with jobs elsewhere will not have to compete with commercial vehicles on small side streets.

In addition, the harbor area is part of the largest employment center in a labor market of 38,000 workers. This area is the only local employment center accessible by public transportation. For example, 20,000 workers use public transportation to commute from Bridgeport to Stamford each day. This number is increasing as welfare-to-work programs go into effect because many of those workers do not own a car. The city is working with state transportation authorities as well as the regional metropolitan planning commission, MetroNorth, in conducting research about ridership and marketing the new transportation efforts.

Funding for the transportation improvements is coming from a number of sources. The city has been working closely with the metropolitan planning organization to find sources of funding. The fixed transitway received \$995,000 for preliminary design and an additional \$18 million for the project. The total cost of the project is expected to be \$23.2 million. The ferry terminal has received \$4.8 million in CMAQ funds. The budget total for that project is \$5.3 million. The Transitway and Connector projects are receiving \$4.6 million in TEA-21 Surface Transportation Program Enhancement funds. The City of Stamford has received \$18 million of TEA-21 special needs appropriations. The city is using \$200,000 of its Brownfields Showcase Communities Program funding for assessments of properties along the proposed transitway. The city also requested \$15 million in CMAQ funds for the walkways and bikeways along the access roads.

Stamford has an indirect partnership with DOT through the \$100 million ISTEA investment in the train stations. It also has a total of \$1.2 billion in planned improvements over the next five years between Stamford and New Haven to expand capacity on I-95 and to replace track and electric equipment on the New Haven Main Line to accommodate high-speed rail.

Table 5.1: TEA-21 Programs That May Be Used for Brownfields Redevelopment		
Type of Project	TEA-21 Funding Section(s) and Funding Estimates (1998–2003)	Application to Brownfields Reuse
Railroads	Rail Rehabilitation and Improvement Financing loan program—\$3.5 billion.	Funds can be used for improvements to railroads that have the potential to stimulate redevelopment of regional brownfields or for environmental remediation projects that include improvements to existing railroads.
Innovative Sustainability	Transportation and Community and System Preservation pilot grant—\$120 million.	TCSP grants can directly support projects that have the potential to facilitate brownfields redevelopment.
Brownfields Project Planning	Congestion Mitigation and Air Quality improvement program—\$8.1 billion; and TCSP pilot grant—\$120 million.	CMAQ funds are eligible for planning and project development activities for public-private partnerships; TCSP grants can provide funding for activities related to brownfields redevelopment planning.
Highways, Bridges, and Roads	National Highway System—\$28.6 billion; Surface Transportation Program—\$33.3 billion; Bridges—\$20.4 billion; and National Scenic Byways—\$148 million.	Funds may be used for new highway, road, or bridge construction that has the potential to stimulate redevelopment of regional brownfields or for environmental remediation as part of a new highway, bridge, or road project.
Transit	Transit Capital Investment grants and loans—\$41 billion; Transportation Enhancements—\$3 billion; and CMAQ improvement program (not for reconstruction)—\$8.1 billion.	Funds may be used for construction of new transit stations or lines that have the potential to stimulate redevelopment of regional brownfields or for environmental remediation as part of a transit project.
Recreational Trails	Recreational Trails—\$270 million; and National Scenic Byways—\$148 million.	Funds can be used for new trail and trail facility construction that has the potential to stimulate redevelopment of regional brownfields or for environmental remediation as part of a new trail project.

funds if they fulfill the criteria required by the TCSP program. Those criteria include the following:

- Reducing the need for expensive public infrastructure investments in the future;
- Providing access to jobs, services, and centers of trade; and
- Reviewing development patterns and investments of the private sector that assist in supporting these goals.

Northern New Jersey received \$700,000 in TCSP funds for the redevelopment of abandoned industrial sites by transportation-related businesses at airport, seaport, and rail terminals in the region. The goals of the project are to market the sites for freight-related activities, to modernize transporta-

tion access to the sites, and to provide new employment opportunities.

Approximately \$20 million to \$25 million is available annually from the TCSP program, and, as mentioned, government entities do not have to go through the standard TIP process to receive these funds. Entities such as local governments, school boards, air districts, park districts, and public transit agencies can receive federal funds directly without involving the state department of transportation or the regional MPO.

Railroad Rehabilitation and Improvement Financing Program

The Railroad Rehabilitation and Improvement Financing program provides loans and loan guarantees for capital improvements related to railroads. Funds from the RRIF program are

available to state and local governments, government-sponsored authorities, corporations, railroads, and joint ventures that include at least one railroad.

The program, administered by the DOT's Federal Railroad Administration, provides approximately \$3.5 billion in funding. The funds may be used to acquire, improve, or rehabilitate intermodal or rail equipment or facilities; to refinance existing debt; and to develop and establish new intermodal or railroad facilities. Priority consideration is given to projects that enhance safety or the environment, promote economic development, promote U.S. competitiveness, or preserve and enhance rail or intermodal service to small communities and rural areas. The funds can be applied to brownfields sites because some underused rail stations are on brownfields and because many railroads provide rail access to industrial sites that may be brownfields.

Combining Brownfields and Transportation Projects

Revitalization of brownfields can bring economic, environmental, and social benefits. Combining a brownfields revitalization program with a transportation revitalization program can multiply those benefits. The overlapping goals of each program make them natural partners. Benefits from a combined program include the following:

- Improved efficiency of the current transportation system. Gaining access to brownfields sites located in metropolitan centers benefits the community by requiring less driving time than with greenfields or exurban redevelopment;
- Reduction in transportation-related air pollution. The reduction in driving time from brownfields redevelopment means a reduction in automobile emissions. This reduction can help a community attain its air quality goals;
- Better access to jobs and services for low- and moderate-income residents. Because brownfields tend to be disproportionately located near populations of low- and moderate-income, the redevelopment of these sites can bring jobs or services back to those communities. Lack of transportation to and from suburban job centers can be a limiting factor in the employment of such residents; and
- Reduction in future investments in infrastructure. By making efficient use of existing infrastructure (e.g., areas already supplied with sewer, utility, and transportation access), brownfields redevelopment prevents the cost of new infrastructure investments in the suburbs.

By linking transportation protocol to brownfields redevelopment strategies, local governments are able to reconfigure or improve existing infrastructure on or near a brownfields property. In addition, creative application of state and federal funding may ease site assessment or remediation expenses and demonstrate the attributes of coupling transportation and brownfields redevelopment programming. Many times, the facilities and infrastructure created in such projects can greatly improve local and regional transportation initiatives largely through the reuse of derelict buildings, roadways, rail lines, and properties. In return, a community saves the capital that would normally fund the development of new transportation projects, reaps the benefits of an upgraded transit network, and preserves vast tracts of undeveloped land—all of which contribute to an improved quality of life within the community.

Along similar lines, the synthesis of brownfields redevelopment and housing projects can lead to great improvements within communities.



5.4

Housing

Quality housing is crucial to the well-being of any community, and many brownfields may have the potential to be redeveloped for residential use. Because of the fear of environmental contaminants, the option to use housing as a redevelopment option is often overlooked at brownfields sites. From affordable housing to high-income housing, residential redevelopment of brownfields can be a success and prove to be a catalyst for community redevelopment.

Creating Affordable Housing

Section 8 of the United States Housing Act of 1937¹ authorizes the federal government to provide housing assistance to aid lower-income families in renting decent, safe, and sanitary housing. Through the U.S. Department of Housing and Urban Development, the federal government provides vouchers to low-income families to pay for their gross rent (shelter rent plus utilities). That program, known as Section 8, includes two forms of subsidy: tenant-based and project-based. Each type of subsidy assists roughly one-half of the three million families who use Section 8 vouchers. The tenant-based program provides vouchers to individual residents that they may use in private-market housing. The project-based program provides subsidies tied to specific properties. The amount of assistance is based on

the Bureau of the Census's American Housing Surveys and Consumer Price Index data for rents and utilities.

The U.S. is currently experiencing the largest economic boom in its history. However, during this economic prosperity millions of families are finding it difficult just to keep a roof over their heads. "Despite six years of unprecedented economic growth, millions of families still struggle to secure decent affordable housing. Rather than benefiting from the surging economy, low-income renters are left to compete for the dwindling supply of affordable rental housing available on the private market."⁵ Many of the most vulnerable low-income renters spend years waiting in vain to obtain needed rental housing assistance in the form of housing vouchers or public housing units. Over the past few years HUD has released some striking statistics regarding the state of affordable housing in America:

- At least 5.4 million unassisted extremely-low-income renter households—a record level—pay over half their income for housing or live in severely inadequate housing;
- Since the economic recovery began in 1991, the number of families with worst-case needs for rental assistance rose by almost 600,000, an increase of 12 percent, compared to a growth rate of 7 percent for all households;
- The housing stock most needed by renters with worst-case needs—that is, rental units that are affordable for extremely-low-income households without rental assistance—continues to shrink. The number of rental units affordable to families with incomes below 30 percent of area median income dropped by 5 percent between 1991 and 1997, a decline of over 370,000 units; and
- The gap between extremely-low-income families and units they can afford is large and growing. In 1997, for every 100 households with incomes at or below 30 percent of median income, only thirty-six units were both affordable to them and available for rent by them, well below the forty-seven such units for every 100 extremely-low-income families observed in 1991, only six years earlier.

The severity of the affordable housing problem varies across the country. Regions hit particularly hard by the affordable housing crunch include the northeast and western states. It is evident that a great need exists for affordable housing in many areas of the country.

Brownfields sites often offer the opportunity for new affordable housing in areas where they are most needed. The federal government, through HUD, offers two grant programs that can be used to fund affordable housing projects on brownfields sites.

HUD administers the HOME program (HOME), the largest federal block grant to state and local governments designed exclusively to create affordable housing for low-income households, to distribute annual allocations that exceed \$1 billion among the states and hundreds of localities nationwide. HOME is a flexible program that gives communities the opportunity to design and implement strategies tailored to their own needs and priorities. HOME's emphasis on consolidated planning expands and strengthens partnerships among all levels of government and the private sector in the development of affordable housing. Participating jurisdictions may choose among a broad range of eligible activities, including building, housing rehabilitation, site acquisition or improvement, demolition of dilapidated housing, and remediation of contaminated property. Cities such as Detroit, Louisville, and Philadelphia are using HOME funds to build affordable housing on brownfields sites.

HUD also oversees the Community Development Block Grant (CDBG) program, which allocates over \$3 billion a year to specially designated communities and states in order to revitalize neighborhoods, expand affordable housing and economic opportunities, and improve community facilities and services, principally to benefit low- and moderate-income persons. CDBGs provide a flexible source of annual grant funds for local governments nationwide—funds they can devote to the activities that best serve their own particular development priorities, provided that such projects (1) benefit low- and moderate-income persons; (2) prevent or eliminate slums or blight; or (3) meet other urgent community development needs.

Besides federal government incentives many states and other government entities offer incentives for building or refurbishing affordable housing, or both. Many states offer grants, loans, or both to local governments and nonprofit organizations to help finance construction of affordable housing.

For more information see discussion of the U.S. Department of Housing and Urban Development in Appendix I.

A good example of affordable housing built on a brownfields site is the Belmont Dairy project in Portland, Oregon.

Belmont Dairy, Portland, Oregon

Belmont Dairy was once a nine-building complex supplying dairy products for the community. The site was abandoned in 1990 and quickly became a neighborhood eyesore. Today the Belmont Dairy is a mixed-use structure that contains sixty-six low-income apartments, nineteen market-rate loft apartments, thirty row houses, and 26,000 square-foot of ground-floor commercial space. Located in the Sunnyside neighborhood of Portland, the Belmont Dairy used various funding sources to finance the project. Public financing included the following:

- Network for Oregon Affordable Housing Permanent Loan—\$4.6 million;
- City of Portland Livable City Housing Council Loan—\$600,000;
- City of Portland CDBG Loan—\$750,000; and
- State of Oregon Transit-Oriented Development Loan—\$300,000.

Private financing included a Bank of America construction loan for \$4.6 million. The once blighted facility has become a cornerstone of the resurgence of Portland's Sunnyside neighborhood by providing both affordable and market-rate housing, as well as commercial viability for the neighborhood. The Belmont Dairy project was recently honored with a Governor's Livability Award from the State of Oregon.

Source: Livable Oregon. *Governor's Livability Award Special Mention: Belmont Dairy Rowhouses.*

Available at <http://www.livable.org/awards/belmontrow.html>.

Incorporating Market-Rate Housing

Over the past several years, the country's urban landscape has been rejuvenated. As the economy has thrived and crime rates have dropped, people are rediscovering with increasing frequency the positive aspects of what urban living has to offer. People are coming back to cities not only to take advantage of cultural and recreational activities, but also to make cities their homes. Cities are realizing that brownfields sites can be used for market-rate housing. Whether through refurbishment of old industrial buildings into market-rate housing or through the construction of new housing on a former landfill site, in many cases brownfields are becoming hot real estate properties.

A quality example of redeveloping a brownfields site into market-rate housing is the American Can project in New Orleans, Louisiana.

The Jefferson North End project in Dallas, Texas is another example of market-rate housing being built on a former brownfields site to attract renters and buyers back into the city. The site, a former industrial/commercial property, had been vacant for twenty years. Previous occupants included operations for metal finishing, paint and varnishing manufacturing, automotive repair, and battery manufacturing. Developers spent over

People are coming back to cities not only to take advantage of cultural and recreational activities, but also to make cities their homes.

\$3 million to clean up the 3.5-acre site. The City of Dallas provided a ten-year, 100 percent real property tax abatement on added value worth \$2.1 million. Actual construction costs were \$34 million. Located just north of Dallas's central business district, the complex includes 540 units, with 108 dedicated to affordable housing. The project has also created fifty full-time jobs.

Many tangible benefits derive from using brownfields for housing. Redeveloping brownfields sites promotes infill development, uses existing infrastructure, removes blight, and adds property value to the surrounding area. Redeveloping brownfields for housing does all this and helps add much-needed affordable housing, market-rate housing, or in some cases both affordable and market-rate housing.

The synthesis of brownfields redevelopment and housing concerns addresses another critical aspect of community revitalization. Similar to transportation projects, housing initiatives on remediated brownfields can provide great benefits by crafting redevelopment strategies to accommodate both community needs as well as state and federal funding programs. In addition, comprehensive planning that involves the input of various community stakeholders lends to residential options that are affordable, yet attractive to citizens in all income brackets. It is the use of such foresight that provides for the augmentation of community livelihood as well as the preservation of natural and recreational land resources and historic buildings and districts. In this sense, brownfields renovation lends to non-economic redevelopment and conservation of community resources. A logical starting point to examine this concept is greenspace preservation.

American Can, New Orleans, Louisiana⁶

The American Can facility has been abandoned for the past thirteen years. However, the buildings in the facility are about to become an upscale residential complex with supporting retail stores. The facility will contain 265 one- to three-bedroom apartments and at least nine retail establishments. Historic Restoration, Inc., the developer of the project, used public-private partnerships to acquire the necessary financing. Financing included:

- \$29 million in tax-exempt bonds from the State of Louisiana's private activity bond cap program;
- A \$6.5 million mortgage from the City of New Orleans;
- \$7.5 million of equity capital invested by Historic Restoration's partner, Housing Horizons; and
- A \$500,000 federal brownfields grant.

5.5

Greenspace

Greenspace is essential for the health of a community and its quality of life. Greenspace may be publicly held parks, forested areas, open ranges, fields, or even an empty lot that is privately owned. Each of those areas benefits the environment and communities in different ways. In general, greenspace preservation and creation happen in two ways. First, greenspace is preserved by the lack of development, as would be the case in suburbs or rural areas. Such preservation can be done through planning, zoning, or habitat conservation plans coupled with economic incentives to attract development to areas that have been previously developed. In urban brownfields areas, greenspace issues are more closely related to creation of open spaces, parks, and recreational areas. Typically in brownfields-afflicted areas, greenspaces have been erased through development of business or industry. Greenspace creation brings the natural environment back into the neighborhood through projects such as community garden plots, playgrounds, and recreational fields. Greenspace issues are important to brownfields because greenspace preservation prevents brownfields from occurring and greenspace creation results in the remediation of brownfields.

With the right approach, brownfields can be a significant factor in greenspace creation and can contribute to the quantitative and qualitative aspects that drive economic and neighborhood development.

Creating Greenspace

One of the most prominent arguments for supporting brownfields programs and projects is that brownfields redevelopment puts idle sites back into productive use, thereby contributing to tax

revenues and overall economic development in a city or a neighborhood. However, brownfields redevelopment is increasingly being used as an effective strategy for non-economic development purposes. As brownfields redevelopment has come to mean the integration of economic development, environmental quality, neighborhood revitalization, and community participation issues, room exists to consider non-economic uses, such as the creation of parks. With the right approach, brownfields can be a significant factor in greenspace creation and can contribute to the quantitative and qualitative aspects that drive economic and neighborhood development.

Urban parks and greenspaces can be tangible, economic assets that potential residents and businesses look for when considering investment in a neighborhood. Playgrounds, parks and greenspaces make any neighborhood more attractive and increase property values. Parks can also foster the establishment of a community, giving residents more reason to stay and invest through home ownership. Other improvements that come to a community through increased property values and greater community investment also attract new businesses that bring job opportunities and increased taxes to a city.

Brownfields that are developed into greenspaces have intrinsic and often intangible value, especially to urban communities with little or that lack greenspace. Turning brownfields to greenfields offers cities an opportunity to bring some aspects of the natural environment to members of the community and to improve quality of life by giving residents a place to recreate and gather. It can also be a source of community pride. For those reasons, many local nonprofit organizations and community development corporations support greenspace creation and work on projects like parks and urban gardens. Furthermore, many local organizations have the savvy, staff, and resident support to manage their own projects to create greenspace. Brownfields programs and incentives should be inclusive enough to apply to the nonprofit and public sectors. Brownfields-to-greenfields development also provides prime opportunities for community participation and interaction. Such projects can

Assunpink Greenway, Trenton, New Jersey

A number of communities, including Trenton, New Jersey, are using brownfields redevelopment as a way to create greenspace in the city. Trenton's greenspace project centers on the Assunpink Creek and the industrial and brownfields sites along the waterway's banks. The Assunpink Greenway is the city's largest redevelopment project and the city is enlisting the assistance of state and federal agencies to reach its goal. In addition to creating green and open space in a historically industrial city, the Assunpink Greenway project will provide recreation areas, mitigate flood hazards, and offer cultural and economic development opportunities.

A main focus of the greenway project includes restoring and incorporating historical sites along the creek. Such focal points include a historic African-American cemetery dating to the 1700s, a working blacksmith's shop that has been in continuous operation since the 1800s, and a historic mansion that is now a public library. One goal is to link the greenway to the extensive regional trail network.

The greenway project will also include measures to control flooding. The creek has historically been a flood hazard for the city, and for the creek to be reclaimed as community asset, the natural floodplain must be restored and many of the impermeable surfaces surrounding the creek must be eliminated. This strategy ties into brownfields redevelopment to the extent that the impermeable surfaces exist because of industrialization in the creek's floodplain. The plan for the greenway project calls for efforts ranging from property acquisition to relocation of current businesses. The city plans to construct a new industrial park at a more environmentally suitable site where businesses can relocate.

The city is using county, state, and federal resources to further its efforts. The U.S. Army Corps of Engineers will perform environmental assessments and use flood control measures and ecological restoration that will include remediation, partial creek daylighting, bank restoration, and dredging. The city is also applying for resources from the U.S. Department of Transportation, the New Jersey Department of Environmental Protection (DEP), and Mercer County. The city applied for nearly \$900,000 in DOT's Transportation and Community and System Preservation grant funding for 2001. If successful in securing the grant, the city will use the money for bike paths, trails, lighting, fencing, remediation and construction of an access road. The New Jersey DEP's Green Acres program is giving the city funding to develop eighteen acres of greenspace for recreational use as part of the Assunpink Greenway project.

bring together local governments, community development corporations, private developers, and residents for very positive causes.

Improving Public and Environmental Health
Greenspace provides many benefits to the community and adds to quality of life for residents. On the most basic of levels, environmental quality inherently hinges on having natural resources to ensure a healthy ecosystem of which every community is part. For example, greenspaces such as forests play a significant role in protecting air quality because they absorb carbon dioxide and other greenhouse gases. As areas are deforested to make way for development, air quality can be compromised. Green and open space is also an

important component of a community's watershed by providing areas of groundwater recharge and flood control.

Greenspace provides health benefits to a community. Natural resources such as trees help clean the air, and green and open spaces provide areas for physical activity. Those factors are especially important in reducing urban health issues like asthma and in generally increasing the health, well-being, and physical fitness of residents.

Enhancing Community Spirit

In addition to the environmental and ecosystem improvements realized, preservation and creation of greenspace can help revive a neighborhood and

unite community members. Natural areas and recreational spaces are important for neighborhoods, especially in urban areas where homes do not have large yards, so that residents can enjoy environmental settings and recreate in a green space. Parks can be the center for community and cultural activities such as concerts, performances, and community fairs; they are areas where members of the community can meet each other and interact. Such activities draw communities together socially and give them a chance to informally discuss community life and issues. Those sorts of relationships are essential to the strength of a community and its ability to mobilize and empower itself. Whether through a park or an urban garden, greenspace gives residents a place to get together and to be part of the natural environment from which urban populations are often separated.

Assessing the Economic Benefits of Greenspace

The value and importance of greenspace can be undermined when only economic indicators are considered because quality-of-life factors are difficult to measure in economic terms. In some ways, greenspaces are expensive to maintain. For instance, maintaining public parks costs more than the amount of money generated by the land use. However, parkland is a community asset that should not be assessed in monetary value, but rather through economically intangible indicators such as improved health and quality of life. The inability to put a price on the benefits reaped by a community through the use of greenspace can make its creation or preservation difficult to justify, especially when the property has a high potential for profit if developed. Nonetheless, three ways exist to account for how greenspace preservation saves money or generates profit by (1) assigning monetary values to the costs of development; (2) assigning values to the increased use of unnatural environmental controls that destruction of greenspace requires; and (3) considering the economic activity that greenspace preservation and creation can create.

One way to assign monetary value to greenspace is by determining the actual cost of development. When considering the cost to

taxpayers and the opportunity cost of sacrificing environmental quality, preservation of greenspace gains some credence. In brief, any development project—even one spearheaded by the private sector—has an expense to a local government that is only partially borne through taxes. Developers may ask a local government to provide services (water, sewer, and roads), which essentially subsidize the private development at a cost to all taxpayers.

Another way of assigning a value to greenspace is by accounting for the value of the service that the environment provides. One example is the cost of having to employ a human-made technology to compensate for the environment's diminished capacity on account of development. With regard to water quality, development on greenspace can damage a natural watershed. Plus, the increased acreage of impervious surfaces that accompanies development of every scale further reduces the amount of open land to absorb rainfall, increases the amount of run-off, and further necessitates the need for expensive technology. Having to construct and maintain an extensive water treatment facility to handle extra processing and purification can be very costly. However, those opportunity costs are rarely considered in evaluating the financial package of a proposed development.

Preserving and creating greenspace can also create economic activities in several ways, such as the generation of tourism and recreation. Scenic vistas, unique habitats and wildlife, and hiking and other outdoor recreation activities are prime tourist attractions that entice consumers to visit an area. This sort of recreational activity has secondary economic impacts by creating opportunities for jobs and businesses such as recreational equipment suppliers and vendors, shops, and hospitality services. Festivals and outdoor celebrations can also be moneymaking ventures for communities, attracting visitors and giving local neighborhoods a new prestige as a place with interesting events and people.

Incorporating Greenspace Preservation
As developers take another look at previously developed properties and are able to consider them as viable development options to

greenspace, the greenspace land-grab is somewhat subdued, and there is a better chance of preserving existing open space. Planning can also give a community an opportunity to consider the land-use options that it has; local government can work to develop policies and programs that promulgate the needs and wishes of the community, while acting as a steward of the environment.

Measures can be taken locally that preserve greenspace and promote greenspace creation. Furthermore, brownfields redevelopment and related incentives can help support efforts to save and create green and open spaces. Many local governments are using brownfields resources to make typically undesirable sites more enticing through programs such as those that pay for environmental assessments, provide tax relief to developers, or offer infrastructure improvements. By encouraging businesses to use brownfields, some development pressure is taken off greenspace. Such incentives can work in concert with the advantages of infill development, including existing infrastructure and access to public transportation. Furthermore, local governments can require that developers save parts of their properties as greenspace or make a financial contribution for the creation of greenspace elsewhere in the city.

The incentives and tools that subsidize redevelopment of brownfields can sometimes offset costs so that greenspace creation may be economically viable.

Local governments can plan to use funding or work with the private sector to make greenspace creation feasible. The incentives and tools that subsidize redevelopment of brownfields can sometimes offset costs so that greenspace creation may be economically viable. More permanent measures than planning and zoning can be employed, including the use of conservation easements, transfer of development rights, green infrastructure policies, and habitat conservation plans. Furthermore, those tools are not exclusive to local governments. Nonprofit organizations and

private citizens can also exercise those options. Creating barriers to the development of greenspace can make brownfields redevelopment more attractive.

Conservation Easements and Transfer of Development Rights

With a conservation easement, landowners essentially sell their development rights. A third party, such as a local government, can purchase the easement to ensure that the land is not developed. The easement may be for the whole of a property or for just a portion. For example, with 10,000 acres, a landowner may sell the development rights to 3,000 of the acres and keep the remaining 7,000. In this way, 3,000 acres are held in conservation by the third party while development is free to occur on the remaining 7,000 acres. This partial purchase of development rights can be a moderate compromise that allows land to be preserved while the landowner maintains title to the property.

By using conservation easements, landowners receive a tax break because taxes are assessed only on the land that the property owner still controls. So, using the previous example, the landowner would only be assessed on the 7,000 acres, not on the 3,000 to which the third party owns the easement. Conservation easements are also a good option for people who would like to stay on their property but cannot afford the taxes or would otherwise need to sell land for money to cover another expense. This approach to conservation protects the land from encroaching development while preserving green and open space for the enjoyment and benefit of future generations.

However, conservation easements are a voluntary measure. One must find a willing landowner for it to work. Landowners with prime development property may not be willing to forgo their rights to develop at some time in the future. Easements are also expensive. When considering the rights that landowners are surrendering and the permanency of the easement, landowners will need a strong financial incentive to grant a conservation easement. Another problem with conservation easement programs is that they do not preserve large plots of land. Rather, conservation easements typically result in protection of small,

non-contiguous parcels, usually because landowners are not willing to sell the development rights to large tracts of or the extent of their property.

Transfers of development rights present an alternative to conservation easements. With a transfer, a landowner can sell the development rights to a developer, and the developer can use those rights to develop elsewhere. A transfer of development rights has beneficial and negative aspects similar to a conservation easement.

Green Infrastructure

The green infrastructure concept recognizes planned greenspace preservation, biodiversity, and ecosystem maintenance as providing tangible services for a community, similar to the services provided by traditional, human-made infrastructure such as stormwater drainage systems and water filtration systems. Green infrastructure has been defined by the 1999 President's Council for Sustainable Development as a network of open spaces, airsheds, watersheds, woodlands, wildlife habitats, parks, and other natural areas that may provide vital services to sustain life and enrich quality of life. This goal is simultaneously to support social values, development, and the environment, essentially striving for sustainable communities. Like physical infrastructure that has planned and organized pathways for wastewater, sewer water, traffic, power lines, and other features that facilitate the social and economic systems in our society, green infrastructure is a planned network of natural resources and facilities such as water sources, greenspaces, and other features that foster biodiversity, groundwater recharge, and other qualities necessary for a productive ecosystem. A number of federal agencies, including the National Park Service, work with local governments on green infrastructure issues. In the absence of greenspace preservation, communities lose the value and benefits that the environment provides through green infrastructure.

As mentioned in section 4.4: Institutional Controls, Natural Community Conservation Programs and Habitat Conservation Plans are effective mechanisms that local governments use to preserve ecosystems and greenspaces.

Natural Community Conservation Programs

Natural Community Conservation Programs (NCCPs) authorize collaborative, voluntary processes to curtail commercial development efforts and to design, preserve, and manage regional ecological habitats. The NCCP process typically involves easing site-specific requirements for permits on developers while protecting habitat-rich lands from development.

According to a report by the Natural Resources Defense Council, while NCCPs work well to bring community members, environmentalists, and developers to the same table, sound scientific consultation is often missing, so the real biological and habitat changes to a species may not be adequately considered.⁷

NCCPs in San Diego County, California

In San Diego County, California, three major Natural Community Conservation subregional programs, covering 1.3 million acres, are being developed. The programs create a proposed reserve system that will encompass hundreds of thousands of acres and will protect over two dozen species indigenous to coastal sage scrub.⁸

Habitat Conservation Plans

Habitat Conservation Plans (HCPs) apply to nonfederal lands and ensure that reparations are made to natural habitats that are disrupted by development. On a regional scale, HCPs are developed in a similar way to NCCPs; they begin with a steering committee of stakeholders. In some cases, the group may have hired a consultant to research the biological and land-use studies. While individual HCPs may vary considerably, many plans create land preserves through land acquisition and provide for habitat management and ecological restoration programs. Furthermore, HCPs determine the size and composition of habitat preservation as well as the financial and institutional controls needed for maintenance.⁹ Those determinations are based on but not restricted to the following criteria:

- Assessments of effects likely to result from the proposed taking of one or more federally listed species;

- Lists of the measures that a permit applicant will undertake to monitor, minimize, and mitigate such effects;
- Considerations regarding the funding that will be made available to implement such measures;
- Procedures to deal with unforeseen or extraordinary circumstances;
- Alternative actions to the taking that the applicant considered and the reasons the applicant did not adopt such actions; and
- Measures that the U.S. Fish and Wildlife Service requires as necessary or appropriate.¹⁰

One concern about HCPs is whether the amount of habitat set aside is adequate for comprehensive preservation and ecological viability—that is,

whether a conservation area will allow for adequate growth and development of a species and growth and development of a habitat where new plant and animal species develop. An area's overall resistance to environmental insult is in direct proportion to its overall size. Thus, small lot-sized areas are more vulnerable to problems.¹¹

Greenspace and open space are an important part of any community. Because of sprawl and other development pressures, greenspaces are being lost while brownfields, prime for redevelopment, lie idle. Promoting brownfields redevelopment and using greenspace preservation measures can not only conserve open space for the enjoyment and betterment of a community, but also put idle sites back into productive use. While local governments have a range of authorities that can

The Impacts of Development on Greenspace

Developing on green and open spaces destroys and paves over our natural resources, the environment is diminished in its capacity to respond to forces such as pollution. The quality of water and air is threatened, along with the various protections that environmental resources provide to a community. The pervasiveness of impervious surfaces that accompany any development project threatens local water quality and contributes to heat islands. Paving and removing soils and vegetation reduce the environment's ability to slow, absorb, and purify runoff from rainfall, and result in greater amounts of runoff reaching local bodies of water at a faster pace. Consequently, development projects can degrade local rivers, streams, and lakes, as well as increase flood hazards. Buildings generate heat through the use of electricity. Buildings also conduct (absorb) solar heat during the day and convect (radiate) it in the evening, further heating the atmosphere. Paved streets and parking areas absorb heat, and buildings obstruct cooling winds. This effect, in combination with the heat generated by cars, factories, and lights can create a dome of heat over urban areas that also trap pollutants and suspended particulate matter.

Aside from the mitigating functions that the environment provides, the integrity of the environment should be evaluated in considering the importance of greenspace. By developing green and open spaces, a community loses biodiversity of plant and animal life. In and of itself, biodiversity is essential to preserving and protecting the quality of our natural surroundings, but reducing biodiversity also offsets natural balances in the ecosystem. Such an imbalance may require compensation through artificial measures. For example, a reduction in a neighborhood's bird population, perhaps due to the destruction of forested areas, may necessitate the use of pesticides to keep the insect population under control. However, such a measure is in no way a simple or clean solution. Pesticide use has its own laundry list of effects on environmental quality and human health.

Such conditions affect quality of life in numerous ways. First, the removal of natural resources denies a community a natural area and vista that it had previously enjoyed. More importantly, increased air temperature and suspended particulate matter are known to create and exacerbate public health problems such as asthma and heat-related conditions, especially for the elderly. Even if only for these reasons, greenspace preservation is crucial to conserving natural resources for future generations while serving and protecting the current population.

be employed to protect greenspace, the community also has a large role in advocating conservation as well as in working with grassroots organizations on community-driven greenspace projects.

In addition to any attempts made to quantify the value of greenspace, to promote preservation or combat development, greenspace advocates must make their support known. Despite the variety of approaches to putting a value on greenspace or addressing the true costs of development, such concepts are not widely applied or considered. The non-economic benefits of greenspace can be measured only when those who value the greenspace communicate their perspective to those making land-use decisions. Local governments, community members, neighborhood associations, and others must be proactive in preparing for development so that greenspace is protected through land-use planning.

Along these lines, converted brownfields may be put to use to harbor other community activities. Expansive brownfields parcels of land often make ideal settings for parks dedicated to recreational pursuits. In this manner, redevelopment efforts that create recreational settings demonstrate another key element of community improvement through brownfields revitalization.

5.6

Recreational

Increasingly, as large cities and small towns across America look at ways to revitalize their downtowns, to revive flagging economies, and to gain citizen support of downtown events, they have looked at increasing recreational and athletic facilities in two ways. First, cities are building professional-level facilities to attract sports teams, bring corporate sponsorships, create jobs, and increase local and regional revenues. Second, communities are increasing the number of public recreational facilities available for their citizens in efforts to better support athletic leagues by increasing citizen involvement in fitness activities. Recreational facilities can also be used as evidence of a high quality of life to attract residents and

businesses to the jurisdiction, further increasing investment in a community.

Developing Professional Sports and Entertainment Facilities

Professional sports facilities have become increasingly popular as magnets to draw people downtown, to attract or retain professional sports teams, and to market a city. Furthermore, a professional sports arena may also serve as a public venue for a variety of entertainment or commercial functions such as musical concerts and trade shows. In many ways, professional sports facilities are fun and seem like an easy answer, given the popularity of sports in this country, but their final economic contribution is difficult to tabulate for a number of reasons.

First, it is a seller's market—that is, professional teams seem to have their pick of facilities, with cities bidding against each other to attract the most successful team. In its efforts to attract the team, the city is in danger of selling out. Many new stadiums are built with tax dollars and given to sports organizations with very low or no taxes. In that case, the buyer does not contribute in any way to the remediation of the site. Furthermore, the sports organization can also write itself a large portion of the proceeds that the facility will realize through sales of tickets, merchandise, and concessions. The upshot for local governments can be an expensive development that will take longer than the projected life of the stadium to pay off.

Second, sports facilities take up large areas of property and remain empty much of the year. This reality not only creates underused facilities, but also increases opportunity for run-off and other environmental insults resulting from development and impervious surfaces. One other factor that should be examined in weighing the advantages and disadvantages of professional athletic facilities is the job creation potential. It is true that athletic facilities create some meaningful jobs that support the ongoing maintenance and administration of a facility. It is also true that construction of the facility creates many temporary construction jobs. However, the majority of the jobs created are part-time, hourly, seasonal service jobs, like those required to serve concessions or sell merchandise.

For the most part, those jobs are without job ladders, significant benefits, or even full-time employment opportunities. So, although a community would realize tax benefits from such jobs, the resources might be better invested in attracting other sorts of industry or in conducting more comprehensive job training.

Nevertheless, professional sports stadiums can do a great deal to promote a city, to revive a tired citizenry, and to serve as the catalyst to further downtown redevelopment. Some communities have successfully built athletic facilities and used them to revive their downtowns.

Creating Public Recreational Areas

The second sort of recreational development arising out of brownfields redevelopment leaves the professional sports at home and brings ama-

teur athletes out in every community. Local governments are answering community cries for increased athletic fields, greenways, and recreational centers that allow public access to sports, increase citizen fitness activities, and connect neighborhoods physically and socially. Because brownfields are often contaminated properties and recreational sites foster a great deal of interaction with properties, local jurisdictions must take steps to ensure that recreational facilities are safe for the public. This sort of recreational redevelopment serves the social and environmental needs of communities in a number of ways.

Athletic Fields

Baseball, soccer, and other playing fields, as well as basketball and tennis courts, serve local organized leagues as well as pickup games for neigh-

University of Louisville, Louisville, Kentucky

Papa John's Cardinal Stadium at the University of Louisville in Louisville, Kentucky, stands atop a former ninety-two-acre railroad yard and brownfields site. The new stadium has been a catalyst for development and prosperity, producing millions of dollars in annual revenues for the university and the city. The environmental and financial obstacles to large-scale recreational development provided many challenges. Nonetheless, the brownfields redevelopment project has provided jobs, a home for football administration and practice, and entertainment for students and the community. The new stadium has given alumni and the community a sense of pride in what before was only a brownfields site. The project is a great example of the commitment to cure an environmental problem and turn it into a regional asset.

Funding proved to be the largest challenge. In most instances of redeveloping brownfields on very large scales, financing the project proves to be a challenge bigger than the construction itself. Total project costs were \$68 million. The university worked with the city and the community to secure funding. Louisville and Jefferson County contributed \$1.5 million. Revenue bonds raised an additional \$18.5 million. Over \$3 million came from a land deal with CSX Transportation, which owned the rail yard. CSX deeded the property to the state and in return the state deeded to CSX a separate parcel of property worth about \$3 million. Yet, the majority of the funds for the project came from private donations. The university and city received over \$27 million in corporate donations and \$15 million from stadium ticket sales. The largest corporate contributor was Papa John's. The pizza maker donated \$5 million and was given the right to use its name on the new stadium.

The community has benefited from the economic revenues generated by the stadium. Concession-stand programs now provide employment opportunities for city youth who receive a percentage of concession sales at each football game. Additionally, the project has created other economic growth opportunities for the community. Part of the city's redevelopment plan includes extending Central Avenue, which now connects the stadium with Churchill Downs and the Kentucky Fair and Exposition Center, to create an entertainment district. Churchill Downs is developing a four-star hotel that will increase the visibility of the horse racing and entertainment activities of the area. Also, a developer has acquired twenty-two acres adjacent to the stadium and is creating a plan to bring in new offices, hotels, and restaurants.

neighborhood groups. The benefits of such fields and courts are obvious; however, a number of factors can serve as deterrents to their development.

First, such fields require maintenance such as grass cutting, fertilizing, and field lining, and therefore are economic drains on local governments. Second, these sorts of facilities also require that the jurisdiction maintain insurance policies against liability for injuries or danger on the fields. Last, unless the property is donated to the jurisdiction, it would have to be purchased or leased from the property owner. In addition to maintenance costs, such recreational fields do not directly contribute to the local economy through jobs, taxes, or services. Thus, a local government cannot count on recouping any of the investment that it makes in the remediation, the redevelopment, or the ongoing maintenance of the site.

It is always difficult to measure immediate economic benefits like tax revenues against quality of life benefits that result in things like healthier

communities, increased property values, better recreational opportunities for youth because of increased participation in recreational activities, and greater citizen appreciation of community life.

Greenways

Greenways are paths created through parks or along natural areas. Greenways can benefit communities in many ways. They can be used recreationally as bike paths where individuals or groups can bike, roller-blade, run, or walk in nature and without the noise and danger of cars. Greenways can also be an alternative transportation route for individuals who do not have access to cars or who want to bike or walk to work. Greenways bring citizens closer to nature and allow them to witness the importance of natural habitats. More and more, local governments, municipal planning organizations, and state departments of transportation are coordinating greenway development in order to connect the

Fly Balls from Fly Ash

When the U.S. Environmental Protection Agency proposed that the Chisman Creek Superfund site remain vacant and surrounded by barbed wire, York County and Virginia Power tossed another pitch for redevelopment—recreational fields. Several redevelopment ideas were proposed, including an office park and a commuter parking lot, but the idea of a recreational park fit local government and community needs.

The Chisman Creek site is located in southeastern York County, Virginia, approximately fifteen miles north of Norfolk. Between 1957 and 1974, more than 500,000 tons of fly ash and coke from Virginia Power's Yorktown Power Station were deposited into several sand quarries by a local contractor. Disposal stopped in 1974, but over the years trace metals dissolved off the ash and contaminated local waters. Remedial action would have included restricting site usage by constructing a series of fences topped with barbed wire.

The increase in the popularity of soccer and softball in the area had placed recreational fields in high demand. Virginia Power worked with York County to identify local needs, finally deciding on a sports complex with softball and soccer fields.

The Chisman Creek site redevelopment presents several lessons for communities redeveloping brownfields for recreational purposes. The most important lesson learned is to develop public-private partnerships. Virginia Power worked with the York County and EPA to determine future land usage of the site. The utility was involved in every part of remediation and redevelopment. The utility still owns the park but is leasing it to the county at the property's tax assessment cost. Virginia Power and York County recognized that remediation and recreational redevelopment provided a cost-effective and environmentally friendly reuse of the site. Additionally, support from stakeholders was important to resolve issues of insurance, indemnification, hazardous substance liability, lease termination, and improvements or repairs to the facilities. As a result, York County's Department of Waste Management, EPA, and other agencies lent support to the site redevelopment concept. A citizen advisory group and the County Board of Supervisors provided additional support and approval of the plan.

existing greenways, increasing the distance that it is possible for an individual to take them.

Like recreational athletic facilities, greenways do not create any immediate economic impact and have complicating maintenance issues. Greenways are generally paved, or covered with a semi-permeable surface, and do not require the overall

maintenance common to open fields. However, like fields, greenways do need to be monitored against vandalism or criminal activity and need to be kept neat. In some ways, greenways are more difficult to maintain because they are spread out over a great distance, sometimes many miles.

Providence's Greenway Development

Providence is using recreational redevelopment of brownfields to improve access to city parks and business districts. Providence's redevelopment plan calls for the development of a greenway and bike path that will run along the Woonasquatucket River. The project is designed to complement the Rhode Island Department of Transportation's plan to situate Providence as a hub of a large bicycling loop in the state.

The greenway will link two city-owned parks and a state-owned park. The total cost for design and construction of the bike path is approximately \$5.7 million, exclusive of property acquisition rights. The Providence Plan, a nonprofit organization dedicated to the proper development of downtown Providence, initiated the Woonasquatucket River Greenway Project in 1994. The Providence Plan is also the lead agency in the Woonasquatucket River Greenway Coalition of 100 members that has worked with the staff of The Providence Plan to improve the neglected and distressed neighborhoods along the river. The coalition's members have focused their efforts on involving the community in developing a positive plan for the neighborhood. At public meetings, the residents expressed the desire for a plan that would integrate the need for greenspace with other economic development and housing activities.

Currently, only one public greenspace exists along the length of the river that flows through the distressed residential neighborhoods. Community advocates believe the absence of safe outdoor recreational opportunities for the distressed neighborhoods encourages residential transience and destabilizes the community. Recognizing the connection of greenspace development and community safety is now more evident in most community redevelopment strategies.

Redevelopment Potential and Problems

The community must overcome obstacles and having community buy-in is the most important goal early on. The Providence Plan found the community to be skeptical that any entity, private or public, would invest money to improve the neighborhood. Therefore, eighteen planning sessions were held. The most common requests were for greenspaces, grass and flowers, and a bicycle path along the river to provide a safer, more direct way to get to local stores and community services. The bicycle path will link residences to downtown Providence and public transportation. The Providence Plan has also been working with community groups and school-aged children to conduct environmental programming and efforts to beautify the neighborhood.

Funding for Greenspace Development

The Brownfields Showcase Community Program provided \$100,000 to The Providence Plan for community outreach and \$100,000 to the state to conduct remedial design of a nearby sluiceway and landfill. The greenway project has also received a four-year matching grant from the Lila Wallace Reader's Digest Urban Parks Fund for \$419,432. The Providence Plan also formed a partnership with the Trust for Public Land for land acquisition and conservation along the river corridor. The grant has leveraged over \$7 million, which includes funds from the U.S. Department of Transportation and almost \$3 million in local government-issued bonds. Other sources of funding are \$800,000 from the Rhode Island and DOT Bike Path funding, \$625,000 over three years from the U.S. Department of Justice for a Weed and Seed program, and \$600,000 from a Transportation and Community System Preservation grant from DOT. The project has also received additional monies from Rhode Island, EPA, and the Trust for Public Land.

Golf Courses

Not all city-sponsored recreational uses create financial losses for communities. Public golf courses have lower greens fees than private counterparts. Those greens fees can support the expenses of golf course maintenance. Furthermore, the days of golf as an elite activity are over; the U.S. Golf Association and many state associations are beginning urban golfing programs that provide golf lessons to youths and students and that teach them about golf course maintenance and other potential jobs. The days of highly toxic chemicals to maintain golf courses are also over. Environmentally sound pesticides and fertilizers are now widely used in golf course maintenance.

Indoor Recreational Facilities

Indoor recreational facilities that bring community members of all ages together to work and play are becoming important components of neighborhood revitalization. Indoor facilities can range in size from a small basketball court to an elaborate facility that supports many sports activities, and is equipped with meeting rooms and instructional facilities. Indoor facilities also bring individuals together, increase physical activity in the population, and provide alternative recreational activities for citizens who might otherwise be on the streets. Midnight basketball leagues operate as a crime deterrent, providing citizens with an activity as well as a constructive way to let off steam. Likewise, “first shift” leagues provide a social and physical activity for citizens who work at night and come off work in the morning. Those leagues in recreational facilities give such individuals a chance to enjoy physical activities and socialize in spite of their restricting work schedules.

Like outdoor recreational facilities, the economic benefits of indoor recreational facilities are difficult to measure, while the economic drains are abundant. Nevertheless, such facilities often answer a neighborhood’s need for a recreation center where citizens of all ages can improve their fitness, socialize, and recreate.

Leveraging Funding Resources

In communities that are often suffering from a depleted tax base and are facing many urgent fiscal needs, like police cars and fire trucks,

obtaining funding for recreational spaces can be difficult. However, private corporate support can often be an important component of funding such development. Private donations do not always cover maintenance of facilities, but those costs can be reduced through use of volunteers and community groups. Providence, Rhode Island, uses retired citizens to pick up trash and generally watch over neighborhood parks in that city. Other cities have community days where citizens turn out en masse to show their support for recreational spaces and to volunteer to clean and maintain them. Local groups and service organizations can also be tapped for regularly scheduled maintenance of sites. While none of these options replaces the local government’s responsibility for the site, they all aid it.

As mentioned in the case studies, federal agencies can also be important partners in developing recreational programs. In addition to the EPA and HUD programs mentioned, a number of other agencies have programs and funding that would complement recreational development. For example, the U.S. Department of Justice’s Weed and Seed programming encourages activities and programs that provide alternatives to street activities. Likewise, the U.S. Department of Labor’s Youthbuild program employs youth in constructive and educational jobs, like construction, to help their communities.

A redevelopment activity that directly appeals to the community, such as recreational facilities, will no doubt increase community interest and participation in revitalization activities. In these cases, citizens are able to watch the transformation of the sites into the parks and facilities that all can enjoy. More importantly, recreational facilities allow community members to interact with each other and encourage youth and adults to engage in constructive programs centered on athletics, community service, and cultural pride. This result demonstrates yet another way in which brownfields redevelopment can improve the quality of life within a community simply by cleaning up an idle site.

Similarly, brownfields redevelopment projects can be integral to maintaining or re-establishing a sense of pride within communities

Brownfields to Fairways

The Barstow brownfields site in Hammond, Indiana (population 84,236) is a classic example of successful brownfields redevelopment into a recreational use. Developed in the 1930s as a slag dump, the Barstow site is located on George Lake. For more than forty years, a contractor used the site to bring in concrete, building materials, and other construction waste. The contractor filled in some parts of George Lake with the building materials.

Lake County took control of the property in the 1980s after the owner of the site failed to pay taxes. In 1987, the City of Hammond met with Lake County government officials to acquire the almost 100 acres for redevelopment. In 1998, the city completed Phase I and II environmental assessments at a cost of a quarter of a million dollars. The environmental assessments showed that the site had a high pH level and several heavy metals, all of which were leaching into George Lake. The city had several redevelopment alternatives, but turned to the community for final approval on redevelopment.

The community and the Barstow site are located in an area of mostly heavy industry. When the site was planned for redevelopment, the community decided against more industry. The community and the city worked together to develop a recreational reuse for Lake George, and the idea of a golf course soon gained momentum. The first municipal-owned golf course would transform the gray-looking area on the waterfront into a very productive and aesthetically pleasing site. The city planned a series of studies for land usage, and the recommendations of green recreational usage received widespread support.

Using Golf Courses to Protect the Environment

With the irrigation needs of golf courses, some communities and municipalities have concerns about the possibility of increased leaching of contaminants. The city focused its efforts on creating a cap that protects the water. The first section redeveloped at the site was a nine-hole youth golf course and facilities. Environmental estimates show that the golf course and cap will eliminate 85 percent of the leachate. Like any environmental cap, the golf course's cap will deteriorate over time. Using a golf course as a cap has an advantage in that there is a financial incentive to maintain good grass and protect the vegetation.

Everything about Hammond's new golf course has environmental protection in mind. The chemicals being used to fertilize and maintain the course are of a new generation of environmentally friendly chemicals. The fertilizer mixture is placed on the course in a liquid form to prevent any surprise runoff. Additionally, the city reclaimed some fifteen acres of wetlands that will serve as a natural buffer with the lake.

Process of Redevelopment for a Golf Course

The city received a Brownfields Demonstration Pilot grant from EPA for \$200,000. Using \$25,000 of that money, the city is increasing its public outreach. The city has had frequent contact with the community, with meetings broadcast on a local cable access show. Most of the city's environmental due diligence contribution for the site came from local gaming funds. The conservation reclamation of the wetlands watershed was funded by a state grant and Brownfields Demonstration Pilot funds. The local businesses used tax increment financing to fund new infrastructure. Additionally, the city is using funds from a HUD Section 108 loan to help coordinate the environmental and cleanup work. The Phase I and II environmental assessments would have been impossible without HUD's assistance. The city has developed several important public-private partnerships for redeveloping the site. Much of the adjacent properties necessary for the successful development of the course came from corporate donations.

Tearing down Slag Mountain and making the site pleasing was key to providing the city and community great two-way interaction. The city involved the community in every phase of redevelopment, from gaining support for redevelopment proposals to involving community representatives in course design. The mayor of Hammond was instrumental in getting public buy-in at the beginning of the process. The city also worked with private-industry leaders to help them recognize the importance of having strong support from local industry. The long term benefits for the city have not only been the successful redevelopment of a brownfield site, but also the new-found strength of the public-private process that has re-energized a community and its industry.

The Larry Johnson Community Recreation Center, Dallas, Texas

The City of Dallas has led a brownfields redevelopment project that established the Larry Johnson Recreation Center. A \$1 million donation from Dallas native Larry Johnson initiated this project to build a recreation center in his former neighborhood. A 2.64-acre, city-owned site was selected for the project. Though vacant for more than eight years, the site had previously been occupied by an apartment complex. Construction of the recreation center began in June 1996, after the results of EPA's environmental assessment concluded that no health-harmful contaminants were on the site. Additionally, \$500,000 of HUD Community Development Block Grant funding was used to construct the 14,260-square-foot recreation center. Currently, the City of Dallas Parks and Recreation Department runs a number of community programs at the facility, including tutoring, after-school child care, an intramural basketball league, and activities for senior citizens.

through the preservation of historical facilities on brownfields. In those situations, redevelopment projects can be employed not only to refurbish unique structures integral to the industrial histories of many communities, but also to create the centerpieces for cultural districts within communities. It is this re-awakening of cultural traditions in communities that inspires the sense of an urban renaissance that surrounds historic preservation projects on brownfields sites.

5.7

Historic Preservation and Brownfields

When one thinks of historic preservation, images of classical buildings and structures such as Mount Vernon and the Statue of Liberty often come to mind. What most people do not realize is that historic preservation is not about protecting only nationally known historic sites. Historic preservation also includes preserving the districts, sites, buildings, structures, and objects that make up the cultural heritage of the communities, states, and regions of the country. Many buildings and sites across the country could be valued as culturally significant. Many brownfields fit into the description of historic buildings or structures. The United States, especially the Northeast and the Midwest, is covered with abandoned plants and factories that have contributed to the nation's industrial history. Likewise, the West and the



South have mines and mills that were important in shaping the histories of those regions.

Many structures that sit on brownfields could be eligible for a range of historic preservation funds from federal, state, and local sources. Historic preservation funding is by no means a cure-all for brownfields redevelopment. Preserving a historic building or structure can often be an arduous task that takes a great deal of time, effort, and coordination. Even though historically preserving a building can be a difficult task, it should be considered when redeveloping a brownfields site.

Preserving versus Demolishing

The cost of preserving a historic structure is a major consideration. When a historic structure sits on a brownfields site, the issue of cost is compounded by contamination and remediation concerns. The National Trust for Historic Preservation, the nation's largest nonprofit organization dedicated to historic preservation, has done extensive research on the economics of historic preservation. Though preserving a structure can be expensive, the National Trust has found that the long-term benefits of preserving a structure outweigh the initial costs.

The Bethlehem Steel Plant, Bethlehem, Pennsylvania

Linking brownfields, historic preservation, and cultural tourism, Bethlehem, Pennsylvania, is redeveloping the enormous Bethlehem Steel Plant, closed in 1998. The steel factory that used to employ 31,000 mill hands is now vacant. Work has already begun on redeveloping the massive plant that covers one-twelfth of the total city area. The revitalization plan calls for a 163-acre mixed-use recreational facility, a warehousing and distribution center, and the National Museum of Industrial History. The museum will be housed in historic factory buildings and will chronicle the country's strong industrial heritage. More than \$1 billion will be invested in the site. The site is expected to generate more than \$70 million in new tax revenues annually.

Source: Stephen Kindel. *Brownfield of Dreams*. Hemispheres Magazine. pp. 49–52. (January 2000).

Historic preservation is a catalytic activity: one renovation spurs another.

Historic preservation makes use of existing infrastructure (roads, water, and sewer) without additional cost to local taxpayers to provide new infrastructure. Historic preservation is a catalytic activity: one renovation spurs another. Other cities can duplicate industrial parks and tax incentives; they cannot duplicate historic resources. Rehabilitation is 20 percent more labor-intensive than new construction. Since money paid for labor generally stays within a community, there is a greater community benefit from historic renovation. These factors suggest that historic restoration can have long-term beneficial economic effects.

Many cities have used historic preservation funds as a means of redeveloping brownfields sites. The most notable is Lowell, Massachusetts. Capitalizing on its strong industrial heritage, Lowell has transformed once-abandoned mill buildings into new retail, commercial, and residential opportunities for the city while maintaining the historic architectural integrity of buildings.

Baltimore has also capitalized on its industrial resources by turning the inner harbor area into the showplace of the city. One of the highlights of the inner harbor is Tide Point, a converted brownfields site that was formerly a Tide soap plant and is now a fifteen-acre site with five historic buildings offering 400,000 square feet for office and retail uses.

The Federal Government and Historic Preservation

All levels of government in the United States support historic preservation efforts through a variety of resources, such as tax incentives, grant funding, and modified building codes for historic buildings. The catalyst for today's historic preservation movement was the National Historic Preservation Act of 1966. That act established the structure for federal, state, and local efforts in historic preservation.

The National Register of Historic Places

The National Park Service, under the Department of the Interior, heads the federal effort in preserving America's historic places. Perhaps the best-known federal historic preservation effort is the National Register of Historic Places. The Register is the nation's official list of cultural resources worthy of preservation. More than 70,000 sites are on the National Register. Those sites range from well-known historic sites like Thomas Jefferson's Monticello to little-known stops on the Underground Railroad. The criteria for listing a site on the National Register are as follows:

- Districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and
- Are associated with events that have made a significant contribution to the broad patterns of U.S. history; or
- Are associated with the lives of significant persons in U.S. history; or
- Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Have yielded or may be likely to yield information important in history or prehistory.

To be eligible for listing on the Register, properties must be at least fifty years old.

Listing on the National Register begins by applying at the state level. The time that the nomination takes to be processed at the state level varies depending on the workload of each state's historic preservation office but is usually at least ninety days. Once the application is submitted to the National Park Service, a decision on whether to list the site on the Register is made within forty-five days. Once a property is on the Register, it becomes eligible for a variety of federal funds and tax incentives.

The Federal Historic Preservation Tax Program

The Federal Historic Preservation Tax Incentive Program is one of the most valuable sources of financing for historic buildings; it permits property owners to deduct the cost of rehabilitation on their federal taxes. A 20 percent rehabilitation tax credit is available for buildings that are National Historic Landmarks, that are listed in the National Register, and that contribute to National Register Historic Districts and local historic districts. Buildings that are not yet listed on the National Register may qualify for the tax credit if they fill out the proper paperwork.

A 10 percent rehabilitation tax credit is also available. To be eligible for the 10 percent tax credit the building must have been built before 1936 and its end use must be non-residential. The building must also meet specific structural criteria. The tax credits equal 10 percent or 20 percent of tax owed on the cost of the rehabilitation of the building or structure. Since 1976, historic preservation tax incentives have produced the following:

- More than 27,000 rehabilitated historic properties;
- Private rehabilitation exceeding \$18 billion; and
- More than 149,000 rehabilitated housing units and 75,000 new housing units created in historic buildings, of which more than 30,000 are low- or moderate-income units.

For more information about historic tax credits see "Preservation Tax Incentives for Historic Buildings" (1996) published by the U.S. Department of the Interior, National Park Service Cultural Resources.

The Historic Preservation Fund

In addition to tax incentives, the federal government also appropriates approximately \$40 million a year to the Historic Preservation Fund (HPF). The money, allocated among the various states and territories, is managed by the state historical preservation officer (SHPO). The states, tribes, and local governments can use the funding to pay for initial historic preservation plans such as survey costs, comprehensive historic preservation plans, National Register nominations, and brochures and

educational materials, as well as architectural plans, historic structure reports, and engineering studies necessary to repair listed properties. Restoration development projects also are eligible within the limited funds available.

State Governments and Historic Preservation
The National Historic Preservation Act of 1966 provided the impetus for a national, uniform framework for broadening the states' roles in historic preservation. Led by the SHPO, the states play the following roles in historic preservation: administering federal historic preservation programs; providing educational and technical assistance; administering state historic preservation programs; and managing state registers of historic places.

State governments are responsible for managing the various federal historic preservation programs. SHPOs are responsible for disbursing money allocated from the HPF. State offices complete the initial reviews of tax credit applications and provide recommendations on certification to the National Park Service for sites applying for placement on the National Register. States also provide educational and technical assistance through workshops, publications, and other educational efforts in order to help local governments and community groups understand the federal and state historic preservation rules and standards, and to help get properties listed on the National Register.

Financial Incentives

The majority of states also offer their own incentives for historic preservation. Those incentives usually come in the form of state income tax credits or property tax abatements. The Mills Act is an economic incentive program in California that contributes to the preservation of residential neighborhoods and to the revitalization of downtown commercial districts. Through the Mills Act, property owners of historic buildings may qualify for property tax relief of up to 50 percent a year if they agree to rehabilitate and maintain the historic and architectural character of their properties for at least ten years. The Mills Act is subject to approval and adoption by city and county governments.

Many states also maintain a state register of historic places. As for the National Register, sites must meet a specific set of criteria before being placed on the state list.

Local Governments and Historic Preservation
Local governments also play key functions in historic preservation efforts. The most important role is in embracing the importance of local history and culture and using them as tools for economic and community development.

Cities such as Savannah, Georgia and Charleston, South Carolina have long used their historic buildings and culture to distinguish themselves from other communities. Many larger cities have their own historic preservation offices that play a role in managing local historic districts and providing technical assistance and outreach for local nonprofit organizations and individuals. Some local governments have used eminent domain authority to acquire historic properties that are threatened with demolition. Historic preservation is statutorily defined as a public purpose and a public use, which are prerequisites for the exercise of eminent domain.

Historical Amendments

Realizing that local governments often play a primary role in historic preservation, in 1980 Congress amended the National Historic Preservation Act of 1966, establishing a nationwide program of financial and technical assistance to local governments through the Certified Local Government Program. A local government can participate directly in this program when its state historic preservation officer certifies that the municipality has established its own historic preservation commission and adopted an ordinance meeting federal and state standards. More than 1,100 local governments participate in the program throughout the country. Most local governments do not have funds available for historic preservation efforts. Local governments often have special building codes and zoning regulations for historic buildings that make it easier for a structure to be preserved.

Historic preservation demonstrates one way that brownfields redevelopment may lend to the improvement of non-economic community

resources. Through revitalization, a defunct property becomes a cultural icon, illustrating the industrial foundations of a community and inspiring a sense of pride in the past, as well as bringing life to a once-blighted region.

Clearly, brownfields redevelopment can provide many benefits to the quality of life in communities that have suffered economic depression and that are littered with neglected, blighted properties. The integration of transportation and residential components into redevelopment plans can ease numerous funding burdens to communities through grants and loans. In addition, those projects yield vastly improved transit and residential networks, create employment opportunities, and generate a great deal of revenue in communities that are often severely impoverished. In another light, brownfields redevelopment projects are important means of converting blighted properties into aesthetically pleasing community resources. Through the conservation and conversion of brownfields into open greenspaces, historical districts, and recreational areas, a community is able to resurrect traditional links to eras passed. The end result is a renewed sense of community pride and economic stability through the reuse of available resources. However, each type of brownfields redevelopment is unique because of site-specific social, economic, political, logistic, and environmental factors. Yet, certain categories of brownfields may be linked by their geographical settings. Brownfields and rural small communities, for example, provide both challenges to and opportunities for community revitalization.



5.8

Rural Brownfields

Discussions of rural and small communities often elicit rustic imagery of quaint villages in the agricultural heartland of America. In reality, many of those communities lie within minutes of urban and suburban centers—especially where thriving metropolitan areas continue to radiate outward. In other places, these smaller communities are located in remote regions and have evolved as single-industry towns reliant on a single, local natural resource.

Rural and small communities are defined as cities, villages, townships, Native American reservations, and unincorporated municipalities with populations under 50,000 residents.¹² On a national scale, rural and undeveloped lands comprise over 80 percent of the land area in the United States.¹³ Yet, only one-third of the U.S. population—some 82 million Americans—calls these lands home.¹⁴ In other words, some of the largest expanses of open land resources are among the most sparsely populated areas in the country. Issues relating to contemporary development patterns, including urban sprawl, blight, and decay, as well as smart growth and land renewal practices, may be almost unheard of in much of rural America.

Clearing Up Misconceptions

Brownfields redevelopment is widely characterized as an urban issue. However, industrial strategies that have evolved in the past fifty years led many corporations to minimize labor and transportation expenses by establishing facilities close to natural resources. When nearby resources

are exhausted or an industry falters because of market competition, branch operations in rural or small communities are among the first facilities closed. Often those facilities were used for site-specific purposes, such as strip mining operations. Consequently, other corporations are unlikely to be interested in such properties or infrastructure for other uses when extensive undeveloped land is readily available. Rural or small communities may not be able to find an effective use for a large industrial complex, and it may lie idle for years.

The nature of rural brownfields contamination is another factor separating those sites from urban counterparts. While many industrial contaminants—petrochemicals, inorganic solvents, and hazardous solid wastes—may appear in both rural and urban brownfields, rural sites are more likely to contain agricultural and mining-related pollutants.

Coal mining facilities often leave behind networks of shafts or exposed scars throughout the countryside that typically fill with water after abandonment. Water can dissolve remaining sulfides in the soil and waste piles to contaminate standing pools and groundwater resources with

A project that would benefit a single neighborhood and contribute to the vast economic resources of an urban setting could completely re-establish the financial stability of a small community.

sulfuric acid. Such waters may contain trace amounts of heavy metals as well.

Agricultural wastes include fertilizers, herbicides, and pesticides—containing nitrogen and phosphorus compounds as well as organic toxins—washed from farmlands into regional surface water and groundwater networks. Another agricultural pursuit, livestock cultivation, can contribute significant amounts of biological waste to rural water supplies. Run-off and leachate from large-scale industrial beef, poultry, and swine farms may contain biological contaminants including bacteria, parasites, and other bodily wastes from feces and slaughtered carcasses. In all three cases, contaminants may be transported and deposited over a vast area of land and water resources.

While differences between urban and rural brownfields are evident, remediating and redeveloping those sites can provide equivalent benefits in rural and small communities.

Correcting Mistakes and Preparing for the Future

Brownfields redevelopment strategies can be integral in revitalizing small communities. Similar to urban projects, brownfields redevelopment is a method of creating jobs, generating tax revenue, improving infrastructure, and revitalizing neighborhoods and town centers in rural regions. Brownfields projects create local employment, not only in site remediation and redevelopment projects, but also in future commercial and industrial operations. Moreover, the economic effect in smaller communities is augmented because of the greater proportional size of a brownfields site in the context of a rural village versus an urban metropolis.¹⁵ In other words, a project that would benefit a single neighborhood

Picking Up the Pieces in Mifflin County, Pennsylvania

Mifflin County, Pennsylvania, illustrates the setbacks that a rural community can endure because of unforeseen economic turnover and natural disaster. Historically, Mifflin County has hosted regional transportation and manufacturing industries, including iron-ore mining and fabrication as well as textile production facilities. Following the closing and exodus of numerous manufacturers as well as acute flooding in the wake of Hurricane Agnes, empty and derelict properties epitomized the economic downfall of a once prosperous rural community. As a result, 2,000 citizens were unemployed and a number of potentially tainted properties stood abandoned and idle. However, with the help of EPA funding as a Brownfields Assessment Demonstration Pilot, Mifflin County is working to develop a comprehensive planning strategy with specific clauses to target brownfields renovation to create new industries and jobs.

Source: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. Brownfields Assessment Demonstration Pilot: Mifflin County, PA. EPA 500-F-99-124. June 1999.

and contribute to the vast economic resources of an urban setting could completely re-establish the financial stability of a small community.

Rural communities also indirectly benefit from brownfields redevelopment strategies by re-evaluating community planning measures such as zoning ordinances. In doing so, smaller communities are able to address past discrepancies that have failed to sustain the economic integrity of the community. This process encourages smaller communities to shape comprehensive planning strategies to prepare for encroaching urban and suburban development through land preservation and restrictive zoning provisions.

Accordingly, the need for comprehensive planning strategies among smaller satellite communities is becoming evident. Such planning initiatives can provide an opportunity to prepare effectively for encroaching development from other communities, to address internal sustainability issues, and to create job opportunities and revenue for communities without large industrial economic bases. In this way, brownfields remediation and redevelopment can be an essential tool to revitalize rural and small communities. Likewise, comprehensive regional planning allows small jurisdictions to consider how tools, resources, and infrastructure can be cooperatively developed among entities that could not support them independently.

Overcoming Obstacles

While the advantages of brownfields redevelopment are being recognized in urban areas worldwide, several characteristics of rural and small communities detract from efforts to reuse previously developed lands instead of altering pristine open spaces. Where urban redevelopment might be described as a process of surgically carving a niche in a complicated web of political, economic, logistic, and space restrictions, rural efforts are quite the opposite.

In rural settings, land resources are typically abundant; therefore, local planning ordinances are often untested by complicated development issues. In addition, existing technical and economic information may be scarce or outdated. When combined, these factors detract from initiatives to remediate and redevelop brownfields. Outdated

methods of communication also may prevent smaller communities from obtaining information and aid from appropriate state, regional, and federal agencies. Many communities are without—or are in the process of developing—sophisticated communication networks including the Internet and electronic mail services. Therefore, even if a rural community desires to adopt a brownfields redevelopment strategy, a lack of fundamental resources may impede progress. These small and rural communities may stand on the verge of revitalization, but they cannot proceed without experienced staff members, suitable equipment, and financial support. Accordingly, a variety of concerns must be addressed to encourage brownfields redevelopment in rural and small communities.

Geographic Isolation Leads to a Lack of Information

Rural and small communities typically exhibit widely dispersed settlement patterns and lack sophisticated communication networks. Therefore, the ability to gather and readily distribute information on brownfields redevelopment

Combining Efforts and Resources: City of Kemmerer and Evanston County, Wyoming

To address brownfields redevelopment challenges and economic woes, Kemmerer, Wyoming (population 3,300), is combining efforts and resources with the City of Evanston. Although separated by fifty miles, both communities have been awarded Brownfields Cleanup Revolving Loan Funds (BCRLFs) and have designated a common project administrator. In addition, redevelopment strategies will be similar and coordinated to effectively synthesize labor and technical resources.

Combined efforts will be aimed at renovating a number of contaminated and vacant properties in Kemmerer, with a strong emphasis on creating jobs and drawing people back to a community that has a dwindling population and an impoverished economy. Following revitalization efforts in the City of Kemmerer, brownfields redevelopment issues will be evaluated throughout the remainder of Lincoln County, Wyoming.

Source: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. Brownfields Cleanup Revolving Loan Fund Pilot: City of Kemmerer, Wyoming. EPA 500-F-99-077. May 1999.

opportunities can be difficult. In addition, smaller communities are often unaware of what constitutes a brownfields property, how to address redevelopment issues, or what government assistance is available to facilitate the process. A survey conducted by the National Association of Development Organizations (NADO) indicates general confusion among rural and small communities about brownfields versus Superfund site specifications, sustainable development tools and strategies, and funding applications and options.

Lack of Legal and Financial Resources

Financial and legal concerns stigmatize the remediation of contaminated properties in rural and small communities. Smaller communities may not have staff members who have legal experience with state and federal policies governing brownfields remediation and redevelopment procedures. For the same reasons, CERCLA requirements can be confusing and intimidating without legal assistance. Financially, rural communities often face poverty issues including

minimal public financing, manpower, and equipment necessary to perform brownfields renovation projects.¹⁶ A historical reliance on agricultural economies and recent trends of migration to larger, metropolitan centers contribute to economic disparities in rural and small communities. Moreover, previously mentioned communication barriers inhibit small communities from obtaining information about regional and federal funding assistance programs. In addition, brownfields funding is usually awarded in proportion to municipal and regional population density; therefore, urban metropolitan centers often receive much greater financing allocations than sparsely populated rural communities. To address this discrepancy, the U.S. Department of Agriculture has established rural empowerment zones (EZ) and enterprise communities (EC) to parallel HUD's programs for urban redevelopment. Yet, while a given year may see \$40 million in funding awarded to rural and small communities through loans and grants, urban counterparts will receive upward of \$100 million.¹⁷ In addition, USDA funding is offered only in the form of loans, not in grants; therefore, communities with earning potentials lower than their urban counterparts are burdened with loan payments following redevelopment.

Offsetting Financial Losses: New Milford, Connecticut

The Town of New Milford lies in the rural region of western Connecticut. Following the closure of the Century Brass Products mill, the complex has been abandoned for over thirteen years. While the site boasts favorable infrastructure—proximity to a natural gas pipeline and a railroad—no industrial corporations have shown interest in the existing facilities. Yet the property has remained industrially zoned, preventing any mixed-use redevelopment efforts. As a result, New Milford is losing an estimated \$80,000 per year in tax revenue.

The largest setback to the Town of New Milford is the lack of funding to conduct preliminary site assessments. Since the allocation of EPA Brownfields Assessment Pilot funding, the Connecticut Department of Environmental Protection has initiated some assessments and remediation efforts. In addition, various foreclosure options are being explored in an attempt to resolve years of accrued property taxes and liens.

Source: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. Brownfields Assessment Demonstration Pilot: New Milford, CT. EPA 500-F-99-109. June 1999.

Vast Open Land Resources Discourage Brownfields Redevelopment

Rural brownfields are often small, single-unit properties or large, industrial complexes outside local town centers. In both cases, without significant pressures to redevelop, these sites are often overlooked unless they are found to be disruptive to daily activities or to pose serious health risks to communities. With an abundance of available land resources, rural planners and developers may not recognize the need to renovate brownfields properties. Moreover, firms or corporations wanting to develop in a rural region may present lucrative offers to purchase unfettered lands instead of baggage-laden brownfields sites. This can lead to reckless patterns of development manifested in non-contiguous zoning and infrastructure. However, comprehensive planning strategies can integrate brownfields redevelopment and encourage conservation of open land re-

Revitalizing Bonne Terre, Missouri

The City of Bonne Terre is a small, rural community resting among the eastern Ozark Mountains in south-eastern Missouri. Founded on a history of lead-ore mining, Bonne Terre once boasted to be the “Lead Capital of the World” among other communities in the Old Lead Belt. However, when ore resources were depleted and jobs, corporations, and citizens began to leave, Bonne Terre was left with numerous abandoned mines, facilities, and over 2 million tons of mine waste. These vacant and contaminated tracts of land accounted for over 200 acres in the heart of the city, and remained derelict and neglected for well over a century.

In addition, Bonne Terre faced acute problems concerning vast land expanses, minimal economic and programmatic resources, and general apathy among local citizens. For example, because of high turnover rates among grant administrative staff and changing political agendas among local officials, the only constant in Bonne Terre had been the complimentary technical assistance offered by an environmental program at a local university. Furthermore, after a century of dormancy, abandoned sites and facilities had become fixtures in the civic community of Bonne Terre.

To address those issues, the city created a development authority geared toward industrial restoration and land conservation, the Bonne Terre Industrial Development Authority, to administer an EPA Brownfields Assessment Pilot grant. To date, efforts in Bonne Terre benefiting from Brownfield Assessment Pilot funding have included site assessments and remediation, as well as subsequent development of a retail gas and convenience market, as well as a regional medical treatment and research facility on previously abandoned sites. In addition, remaining mine infrastructure is to be synthesized with land disposal and capping technologies to make use of abandoned mines as repositories for mine wastes. Those landfills will then be covered with parks, trails, and a golf course.

Source: National Association for Development Organizations Research Foundation. *Reclaiming Rural America's Brownfields: A National Report on Rural Brownfields Redevelopment*. Washington, D.C. (1999).

sources in rural and small communities, as well as provide opportunities for social, economic, and cultural revitalization.

Taking the First Steps

Since brownfields are largely classified as urban issues, small communities lack information about brownfields and sustainable planning practices. These communities may also not be well informed about financial and logistical issues involved in redevelopment. However, the following steps lend to the integration of brownfields redevelopment initiatives within development strategies in small communities.

Coordinating Federal and Regional Development Efforts

Because of the remote nature of rural settings, federal agencies must use regional and local offices, where applicable, to communicate with rural and small communities. In addition, involv-

ing the assistance of regional development organizations (RDOs) creates broader links between rural communities and government agencies. While federal agencies may have extensive resources related to specific nuances of brownfields development, RDO members represent multiple facets of neighboring rural community governments, organizations, and citizens. The American Farmland Trust is a good example of an RDO that provides technical assistance to rural communities throughout the nation to encourage farmland preservation through comprehensive planning and zoning provisions. Collaboration between federal agencies and RDOs facilitates thorough distribution of technical assistance and information. With a more comprehensive network established, information may be disseminated to educate smaller communities about legal and fiduciary options and to demonstrate how to administer such policies for specific community needs.

Creating More Diverse and Equivalent Funding Resources

A number of tactics may be employed to help level the playing field between urban and rural brownfields settings. Urban communities receive more attention than rural regions because of population density—three-quarters of the U.S. population resides in an urban or suburban area.¹⁸ But, small communities can creatively apply monies received in grants and loans toward brownfields renovation. For example, many U.S. Department of Agriculture (USDA) allocations geared toward groundbreaking projects, such as a Rural Utilities Loan (RUL), may be used for infrastructure development. RUL funding can be used on brownfields sites to update or construct roads, water, or electrical networks. Though not directly applicable to remediation or assessment operations, RUL monies are able to support eventual redevelopment efforts.

Providing Tools and Human Resources for Implementation and Remediation

In addition to monetary shortcomings, rural and small communities typically lack centralized departments, equipment, and expertise to carry out remediation procedures. With lower populations and less-dense settlement patterns, rural jurisdictions have historically not required or been able to provide public services that are customary in urban regions. As a result, small communities are often without the necessary equipment and staff expertise to handle the complexities of brownfields redevelopment. Federal agencies and RDOs can lend human resources, technical assistance, and equipment to rural communities.

Federal Roles in Rural Brownfields Redevelopment

Two federal agencies stand out in their abilities and resources to assist smaller communities: the United States Department of Agriculture and the Economic Development Administration.

The U.S. Department of Agriculture might be likened to the HUD of rural America, bringing comparable levels of resources and technical assistance to rural communities as HUD brings to urban communities. Moreover, USDA uses Rural

EZ/EC programs similar to HUD's counterparts. USDA services are widely available to rural communities through USDA Service Centers that operate in nearly every county in the United States. In addition, USDA is developing a number of financing opportunities for rural community development through the Rural Business-Cooperative Service and the Rural Utilities Service. Options including Business and Industry Direct and Guaranteed Loans, as well as RUL funding may be applied to development projects on brownfields sites.

For more information see discussion of the U.S. Department of Agriculture in Appendix I.

The Economic Development Administration is the agency within the Department of Commerce whose purpose is to generate new jobs, help retain existing jobs, and stimulate industrial and commercial growth in economically distressed areas. EDA assistance is available to rural or urban areas experiencing high unemployment, low income, or other severe economic distress. Funding measures applicable to rural brownfields projects include the Public Works and Development Facilities Program and the Planning Program for Economic Development Districts, Indian Tribes, and Redevelopment Areas. In addition, Title IX funding may be extended to rural communities during times of extreme duress, as in a natural disaster, or as a result of sustained economic decline.

For more information see discussion of the U.S. Department of Commerce, Economic Development Administration in Appendix I.

State and Local Roles in Rural Brownfields Redevelopment

State and local partnerships for rural community development vary but are often focused on measures to preserve productive farmland and open lands.¹⁹ Although not directly linked to brownfields redevelopment through financing or technical assistance programs, state and local efforts encourage the synthesis of such practices into comprehensive planning strategies.

State legislation often imposes measures to limit or prohibit urban sprawl by empowering local governments to develop programs whereby

Ohio Farmland Preservation Task Force

Ohio represents an interesting paradox in land-use and economic proportions. Historically, Ohio is a leading agricultural state; agricultural pursuits contribute nearly \$68 billion to the annual state economy. Yet, Ohio's urban communities have grown steadily since the mid-1950s and lead the nation among urban land-area acreage. In forty years, productive agricultural lands have decreased some 28.6 percent from 19.9 million to 14.2 million acres. Most of this land conversion has been to accommodate urban and suburban development as well as infrastructure to facilitate such expansion. However, Ohio cannot afford to lose substantial revenues generated through agricultural and support industries. In addition, Ohio has recognized the importance of preserving open greenspaces and the cultural heritage found in rural communities throughout the state.

To combat growing trends toward the urbanization of statewide rural lands, Governor George V. Voinovich ordered the creation of the Ohio Farmland Preservation Task Force in 1996. The task force studied statewide urban and rural growth trends over the past half-century and composed a list of recommendations for future farmland preservation techniques as follows:

- Encourage rural and small communities to prepare comprehensive planning strategies designed to preserve farmland through zoning restrictions and financial measures;
- Establish Agricultural Security Areas to act as buffers inhibiting further advances by urban development and to diminish complaints between often incompatible urban and agricultural land-users; and
- Provide financial incentives to farmers wishing to preserve or expand existing farmlands through tax abatements and specific loan programs.

To date, the Ohio legislature has created the Office of Farmland Preservation to oversee financial, educational, and technical assistance programs related to agricultural land conservation efforts. In addition, a revolving loan fund with a \$5 million budget has been established to assist farmers and rural communities to maintain and expand productive farmlands.

Source: Breichle, Kendra. "Ohio's Farmland Preservation Strategy." *Getting Smart!: The Newsletter of the Smart Growth Network*. (1), no. 2. July 1998.

development easements are purchased by or transferred to conservation-minded agencies or organizations. In other instances, an executive order may declare the importance of preserving farmland and open land resources.

Although not directly related to brownfields redevelopment, programs similar to the Ohio Farmland Preservation Task Force (see previous case study) can influence development strategies in small communities. Local rural development officials have enacted measures including restrictive zoning ordinances and creative comprehensive planning strategies such as farmland mitigation policies.

By encouraging comprehensive planning refinements, local governments are able to preserve farmland not only by restricting the encroachment of urban development, but also by evaluating potential reuse strategies for existing brownfields. For example, limited commercial development could be facilitated in a small town as long as it is contained on an existing brownfields site. Not only do such measures preserve greenspace, but they also provide revenue and employment on previously defunct properties. In addition, brownfields properties may be remediated and left undeveloped to provide buffers to mitigate conflicting ambient noise, odor,

and air pollution complaints between neighboring rural and urban communities.

Brownfields redevelopment is an important development strategy for rural and small metropolitan communities. In regions where job availability and stability are marginal, remediation and redevelopment projects can bring immediate revenue to a community, as well as create employment opportunities through new businesses and their support industries. In addition, brownfields reuse lends itself to the preservation of regional green spaces and farmlands where applicable. The integration of such redevelopment strategies prepares smaller communities for seemingly inevitable issues of internal sustainability as well as for the expansion of boundaries of regional urban centers.

The development of rural brownfields is interesting in that the challenges related to a lack of technical and financial resources create the impetus for community revitalization. In other words, because a community is often destitute and physically meager, the redevelopment of a single property may completely re-establish the local economy.

Although many brownfields projects have the potential to turn communities around, challenges may be far more complex than geographical isolation and financial and technical shortcomings; some projects have necessary funding, equipment, and expertise, yet are hindered by underlying setbacks. Such is the case with waterfront redevelopment projects, where challenges are linked to the two-fold dilemma of massive, multi-jurisdictional watersheds and the physical characteristics of water and the hydrologic cycle.



5.9

Waterfront Brownfields

American coastlands and surface waterways were central to national development as an industrial world power in the nineteenth and twentieth centuries. Unfortunately, during the major era of industrialization in the United States, little thought was given to aquatic ecosystems. As a result, many waterfronts and interconnected waterways became polluted. Following World War II, as the heyday of widespread, small-scale waterborne shipping drew to a close, many urban port facilities became obsolete and were abandoned. As years passed, fear of contamination prevented local governments or developers from restoring many neglected waterfront sites.

Waterfronts have also been recreational playgrounds accompanied by extensive residential and commercial development. As a result, years of unabashed waterfront development contributed to point- and nonpoint-source run-off, additional dumping into bays and harbors, and destruction of habitats through wetlands infill and subsequent construction projects. Derelict waterfront areas of many cities were underused resources in the middle of this century but are now being considered for extensive redevelopment. For a number of coastal communities, brownfields reclamation is becoming an integral component of waterfront development.

Today, waterfronts are poised as brownfields that are highly attractive to develop, but that are thorny because of their proximity to sensitive ecosystems. In many cases, waterfront cleanup is

As benefits of waterfront revitalization continue to be recognized, there is a growing call for reinvestment in established coastal communities, as opposed to development of pristine, waterfront land resources.

complicated by potential conflicts with the Endangered Species Act. This conflict is apparent in situations where habitats and ecosystems have propagated despite years of contamination. Ironically, remediation could disrupt and harm plants and animals in the habitat. Another key ingredient in waterfront development is the preservation of scenic waterfront vistas. In addition, waterfronts are often rich historic areas laden with cultural significance for communities. In many cases, a city's industrial heart was once situated at the center of the waterfront but has since moved. For this reason, citizens are sensitive to the local history and culture of the site. As benefits of waterfront revitalization continue to be recognized, there is a growing call for reinvestment in established coastal communities, as opposed to development of pristine, waterfront land resources. Not surprisingly, many different redevelopment projects for waterfront brownfields are being investigated pursuant to sustainable development goals.

Special Considerations

Waterfront brownfields redevelopment, like other land-use decisions, must be considered tactfully. Uncontrolled development can lead to the destruction of the same resources that attract people and businesses to coastal areas in the first place. If long-term reuse is not considered in the redevelopment of the brownfields site, the land could be caught in a cycle of use, destruction, remediation, reuse, and re-destruction. In addition, waterfront redevelopment projects present unique challenges related to two inherent characteristics of water resources: (1) water has the capability to transport contaminants considerable distances from a polluting source; and (2) water resource boundaries—in-

cluding watersheds and interconnected ground and surface waterways—often overlap numerous local, regional, state, and even international jurisdictions. It is essential, therefore, that the dynamics, intricacies, and histories of waterfront contamination be understood for each site and its accompanying hydrologic setting. Moreover, all levels of stakeholders throughout a designated watershed must be included in remediation and redevelopment planning proceedings.

Hydrology and Contamination

Contamination at a waterfront site is often more complex than at landlocked sites because of the potential for contaminant permeation as well as for the transportation and dissemination of contaminants. The first potential complication at waterfront sites is that of a high water table. At sea level, as in coastal waterfront, water tables are often within several feet below the land surface. Thus, any contaminants in a soil horizon could easily infiltrate the water table and be distributed throughout groundwater resources in the area.

The second complicating contaminant factor is linked to rivers or connected waterways. Toxic substances from manufacturing and industry have been pumped, dumped, or rinsed into waterways where they inundate and contaminate watersheds. In this case, the consequences can be immediate and can harm many species of aquatic wildlife. Other times, results of contamination are less apparent—taking months or years to develop—as in endocrine disruption in humans who have eaten fish that have lived in contaminated waters. Waterborne toxins can also disrupt bordering land habitats, making nesting and reproduction difficult or impossible for affected wildlife.

Water can also carry contaminants to far reaches of a region, thereby dispersing and compounding their effects. Sometimes non-potable contaminants settle on the bottom of a body of water. The precipitation and accumulation of heavy metals is potentially hazardous to bottom-dwelling aquatic species. However, to remove sediment from the bottom of a body of water requires dredging, which can be more disruptive to habitats and species than not disturbing the sediment. Some waterfront brownfields sites have used imported soils to cover tainted sediments, essentially capping

the contaminants. A drawback to this method is that the capping layer of soil must be fairly deep and, therefore, may alter local water depths. Consequently, both aquatic and terrestrial plants and wildlife may be affected. In addition, fluctuations can result within the water table in the immediate vicinity of the waterway.

Overland run-off and airborne particles are additional, interrelated contamination problems affecting bodies of water. Run-off is excess water that is not absorbed by soils and washed away over land in rain or flooding episodes. Overland run-off often contains surfactants, fertilizers, herbicides, pesticides, and other human-made materials that drain into surface and groundwater supplies. Many waterfront industrial areas have also suffered from smokestacks belching particulate insults into the air. Airborne contaminants such as dioxin and ashes settle on surface waters, neighboring lands, and plants. As toxic particles fall from the atmosphere, animal and plant wildlife may experience direct exposure to pollutants or may ingest contaminated food and water. In addition, local watersheds may be contaminated through overland run-off containing deposited airborne pollutants.

Waterfront redevelopment strategies that address these complex contamination issues are likely to benefit from drawing on multiple levels of specific expertise among appropriate government, private, and public research, development, and construction firms.

Integrated Planning

Waterfront development projects—similar to many water resource management projects—incorporate a complex set of issues, including environmental, political, social, economic, and cultural community standards. Because hydrologic factors supersede established political jurisdictions and boundaries, a project can rarely be reduced to a specific area, such as a tract of coastline or riverfront property. So that all interrelated aspects of an ecosystem are accounted for, projects must start at the broadest end of a spectrum of issues. In other words, to examine a beachfront park, one must accommodate the entire watershed, including ponds, lakes, rivers, and other connected waterways.

Planning and management projects must embrace inclusive stakeholder involvement, and a pragmatic decision-making procedure.

Aside from environmental complexities, the introduction of various political, social, economic, and cultural institutions can obscure the clarity of matters and relationships in a deepening pool of water. Each institution can provide for diverse interests, agendas, and ideologies across a cast of players from local, state, regional, and federal agencies. It is essential, therefore, that waterfront redevelopment planning efforts attempt to infuse the interests of all stakeholders or, at least, derive the most representative course of action possible. The foundation of such planning and management projects must embrace inclusive stakeholder involvement, and a pragmatic decision-making procedure.

Types of Waterfronts

Every waterfront presents a set of different challenges and opportunities for redevelopment. Variety in waterfronts relates to the body of water that the land borders as well as to the former and future land-use options proposed for the site. However, waterfronts can rarely be isolated to a single tract of property, and studies must include connections among other surface and underground conduits. In addition, all water resources are subject to the dynamic balances of a larger hydrologic cycle; any disruption or contamination of a waterway will eventually be distributed throughout a complex network of underground, surface, and atmospheric water resources. Moreover, disruptions to water cycling can affect the distribution of nutrients and sediments crucial to terrestrial and wildlife ecosystems.

Along the same lines, the distinct cultural histories surrounding waterfront communities and districts must be considered along with hydrologic characteristics. Waterfronts allow access to important off-stream and in-stream human uses for waterways. Such uses include: drinking water, washing and sewage treatment, and agricultural irrigation, as well as navigation, hydroelectric power

generation, fish and wildlife cultivation, and recreation are all in-stream water activities. Regardless of the nature of a waterfront and its related uses, waterways have often shaped immediate and surrounding regions through industrial and agricultural exploitation. For practical intents and purposes, however, waterfronts are commonly analyzed by coastal, lakefront, and riverfront distinctions.

Coastal Redevelopment

Coastal waterfronts have traditionally been among the most popular areas for community development, often providing breathtaking aesthetic and recreational resources as well as comprising valuable real estate properties. Not surprisingly, coastal states—including those on the Great Lakes and the Gulf of Mexico—host approximately 75 percent of the U.S. population and the largest cities in the nation.²⁰ While most people are drawn to the waterfront for leisure and recreation opportunities, industry giants have been drawn to the waterfront for convenient access to waterborne transportation. For example, coastal zones are home to large ports and fishing industries that have long been a part of the American landscape. Maritime commerce accounts for 95 percent of U.S. imports and exports. In 1995, approximately 2 billion tons of cargo were shipped from 196 ports on coastal waters, rivers, and Great Lakes, with an estimated value of \$620 billion.²¹ Coastal development is not without faults, however, and can be extremely hazardous to natural ecosystems as well as to local human communities through cycle disruptions and point- and nonpoint-source pollution.

Coastal waterfronts are very dynamic ecosystems with numerous climatic, topographic, and hydrologic differences. However, all coastal regions are linked because of interactions that occur where continental and oceanic systems converge. Both of these geologic systems are very powerful, and coastal waterfronts are regions accentuated by dramatic landform changes.

Climatic idiosyncrasies among coastal regions often lead to a high susceptibility to violent storms and subsequent tidal surges and flooding that can be destructive. The resulting flooding throughout a watershed, and especially low-lying coastal communities, can be exponentially costly in property damage and threat to

human lives. Yet the impetus to develop coastal regions continues to outweigh hazardous storms and ramifications to natural cycles.

Residential communities and industrial facilities also affect coastal ecosystems through point- and nonpoint-source pollution. Run-off from residential and agricultural regions often contains fertilizers, herbicides, and pesticides that eventually reach coastal waters and permeate waterfront properties. Industrial port facilities often directly and indirectly contribute hazardous contaminants to coastal zones including, petrochemicals, heavy metals, radioactive wastes, and thermal pollution. In addition, historic practices of ocean dumping of solid waste, sewage, and toxic inorganic chemicals have severely contaminated many industrial waterfronts.

Thus, coastal redevelopment plans must consider a breadth of factors including natural, chemical, and social processes operating throughout the region.

Lakefront Redevelopment

Lakes are inland bodies of water that are fed through regional watersheds of surface and groundwater networks. As points of convergence for continental landforms and large bodies of surface water; the shorelines of larger lakes, such as the Great Lakes, undergo natural processes that may be similar to oceanic processes but smaller in magnitude. For the most part, however, lakes are more dramatically affected by seasonal variations in water flow among streams and groundwater resources within a watershed. In addition, most lakes are freshwater rather than saline, so their native vegetative and animal wildlife are significantly different from oceanic, coastal varieties.

Along with many historic residential and industrial development patterns, lakefront communities also share the subsequent environmental concerns related to contamination and landform processes. As previously mentioned, the presence of abandoned and contaminated lakefront properties is largely due to the decline in regional shipping industries, as occurred among the Great Lakes. However, communities bordering smaller, inland lakes are also confronted with brownfields redevelopment issues—typically, those related to

Revitalizing the Gold Coast: Glen Cove, New York

From the late 1800s to the early 1900s, Glen Cove was known as part of Long Island's Gold Coast. Steamboat operations between New York City and Glen Cove regularly brought people to Glen Cove's beautiful waterfront. Many wealthy families built mansions in Glen Cove to enjoy the city's resort atmosphere, waterfront recreation, and scenic vistas of Hempstead Harbor and Long Island Sound.

Ironically, Glen Cove was also the Gold Coast's center of industrial activity. A number of different industries developed along the banks of Glen Cove Creek during the 1900s. Today, though approximately nine out of the ten miles of Glen Cove's waterfront is pristine, the remaining 1.1 miles is home to a number of brownfields, two federal Superfund sites, and a New York State Inactive Hazardous Waste site.

Over the years, a number of plans were devised to revitalize the waterfront, including a light industrial park in the 1950s, but nothing significant materialized. In 1994, redevelopment of the waterfront into a maritime leisure site and tourist destination became a top priority for the newly elected mayor, Thomas Suozzi. Currently, brownfields redevelopment is a significant component of Glen Cove's strategy to reclaim and restore the waterfront's former glory because brownfields occupy 146 of the 214 acres of the targeted area.

Findings from New York's Department of State (DOS), Long Island Sound Coastal Management Program bolster plans for revitalization of the city's waterfront. DOS identifies Glen Cove as one of only three areas along Long Island's 314 miles of coastline where "concentrated waterfront redevelopment" should occur. Glen Cove is also designated as a historic maritime center. On the basis of this designation and the recommendation from the coastal management report, the city worked with the DOS to undertake a comprehensive planning process for revitalization of Glen Cove Creek and the waterfront district.

A grant under the New York State Clean Water/Clean Air Bond Act funded the development of a master plan for the city's waterfront district. Because the plan identifies the program goals, objectives, and action items, it is a useful tool for the government, the community, and the private sector. Developers considering an investment or project on the waterfront can use the master plan to see if their development plans are consistent with the area's future use. The local government can use the master plan to guide its efforts and to promote its program to agencies that may be able to provide resources. The city's waterfront redevelopment plan includes retail shops, restaurants, a hotel and conference center, a maritime learning center, and high-speed passenger ferry service to and from Manhattan and Connecticut. Some of the light industry currently in the waterfront district will be relocated to other sites in the city.

Because Glen Cove is a coastal community, Glen Cove's brownfields and waterfront redevelopment programs are highly interrelated. Accordingly, interdepartmental support within the local government has contributed to the creative and entrepreneurial approach of Glen Cove's revitalization plan. Because the city's vision and waterfront redevelopment strategy have been incorporated into all local government departments, each office has become an indirect stakeholder in the project. The Community Development Agency is the lead agency for the city's brownfields and waterfront redevelopment efforts, and it updates citizens and media through various community and task force meetings.

As a small city with fewer than 25,000 residents, and limited resources, Glen Cove has had to be innovative in finding strategies for putting its brownfields and waterfront redevelopment plans into action. Collaboration with county, state, and federal agencies has allowed the city to leverage \$18 million in funds and technical assistance. The support of those agencies, in addition to the entrepreneurial spirit of the local government staff, is making Glen Cove's vision of waterfront restoration a reality.

Land Acquisition and Consolidation: West Harbour District, Cobourg, Ontario

The development of Cobourg, Ontario, has historically been linked to the successes of its harbor district. A booming hub for ore shipping in the 1840s, Cobourg quickly saw the rise of industrial and passenger railroads as well as bulk petroleum storage facilities in its West Harbour District. Following World War II, however, Cobourg and many other Great Lakes port cities experienced a steady decline in shipping activities through the mid-1960s. The result was the abandonment of many rail, petroleum, and shipping facilities in the West Harbour District, leading to the creation of large, adjacent tracts of blighted and contaminated land. The presence of heavy metals (lead, arsenic, and mercury) in affected soil and groundwater resources added to the stigma surrounding West Harbour properties.

This stigma, common to many brownfields development projects, was a tremendous obstacle in the revitalization efforts of the West Harbour District. In addition, the district consisted of four adjacent properties owned by four separate entities with differing agendas and intentions for the future of their lands. Moreover, preliminary redevelopment plans addressed the lands collectively because of the scale of cleanup processes that superseded property lines. Although all stakeholders favored revitalization efforts in the West Harbour District, accommodating individual schedules and interests of various community members and organizations became increasingly difficult. To address those issues, the Cobourg Harbour Development Corporation (CHDC), the agency spearheading revitalization efforts, made a crucial step to involve a third-party mediator, the Waterfront Regeneration Trust (WRT).

Under the advisement of WRT, revitalization efforts in the West Harbour District focused on creating open forums for local municipal agencies, special interest organizations, private landowners, and the general public to share ideas and establish goals for waterfront development. These forums included municipal and county meetings as well as neighborhood gatherings. From such collaborative efforts, the CHDC identified two common goals: (1) a committed effort to create public greenspaces and improve existing infrastructure; and (2) a desire to harness private sector investment for commercial and residential development in the West Harbour District.

To date, the four adjacent brownfields have been decontaminated with \$2.3 million of municipal funding. Initial inertia setbacks were overcome after the successful cleanup of the MacAsphalt Ltd./Shell Canada property in 1993. After tainted soils were removed and transported to a land disposal facility, upscale condominiums were constructed and achieved full occupancy within one month of completion. Seeing the rapid turnaround accomplished in this revitalization project, adjacent property owners were eager to follow suit. Between 1993 and 1997, the Ultramar Canada Ltd. and Imperial Oil properties—both petrochemical facilities—were remediated and purchased by the Town of Cobourg. CHDC designated a second residential project on the Ultramar site while reserving the Imperial Oil property for public waterfront recreation activities. The final brownfields—a tract of municipally owned land tainted by the former three industries—has been decontaminated and sold to the CHDC for future redevelopment purposes.

For an investment of approximately \$2 million, the Town of Cobourg and CHDC have completely renovated four brownfields. In addition, reinvestment in formerly defunct waterfront properties has reinvented the economic, social, and environmental potential for Cobourg, Ontario. An estimated \$162 million will be generated by residential construction projects, compounded by \$10 million in taxes and construction fees. In addition, those projects are expected to create 100 to 200 new jobs within the Town of Cobourg. Finally, waterfront recreation facilities contribute additional revenue to the economy of Cobourg—a new marina produces over \$3 million annually—by bolstering a tourism industry founded on lakefront parks and festivals.

Source: ROBIN Case Studies: Cobourg, Ontario. *Case Studies: Waterfront Renewal: Regenerating Cobourg Harbour, Cobourg, Ontario*. December 14, 1998. Available at <http://www.glc.org/projects/robin/cases/waterfront.html>.

historical infill practices and the pollution that accompanies waste dumping or litter from lakefront recreational activities. Such communities are usually smaller in population and without extensive industrial economies and infrastructure; thus, local citizens may disagree on the extent to which site remediation and economic redevelopment initiatives are necessary or desirable. In such cases, it is essential that redevelopment planning incorporate the concerns of all local stakeholders. Nonetheless, many communities have benefited from the redevelopment of waterfront brownfields and the concomitant economic revitalization opportunities, including waterborne recreation, tourism, and employment in support industries.

Riverfront Redevelopment

Rivers make up the third type of waterfronts that are seeing extensive redevelopment throughout the United States. Riverfront development has often proliferated because of links to larger, coastal port facilities or at major hubs and intersections such as the Ohio and Mississippi Rivers. Rivers are also the terminal sinks for enormous regional watersheds such as the Mississippi and Ohio Valleys. As a result, they are the endpoint for contaminants that accumulate throughout watersheds that directly and indirectly feed into their waters. Therefore, smaller rivers throughout a watershed are often good starting points to address waterfront redevelopment. Today many historic rivers, which have shaped cities throughout the United States, are being redeveloped for industrial, heritage tourism, and recreational purposes.

In the most general sense, rivers result from the intersection of landforms and the water table where groundwater discharges establish a base flow within a channel. In a natural sense, rivers transport loads of sediments and nutrients through the process of erosion and deposition. Rivers have provided transportation waterways spanning the nation, hatcheries and habitats for aquatic wildlife, and another form of waterborne recreation.

Similar to all hydrologic systems, riverine ecosystems operate under dynamic equilibrium. When rain events surpass the absorption potential of saturated soils throughout a watershed, excess waters flow down natural gradients as overland run-off. Trends of urbanization have compounded

overland run-off problems by creating impervious cover—rooftops and paved infrastructure—that limits the mitigating potential of soils and groundcover. In turn, greater amounts of water reach streams faster, thereby increasing local and regional flood potentials. Moreover, run-off that flows over roadways is likely to transport petrochemical contaminants and flow directly into storm sewers and rivers. If rains persist and run-off continues throughout a watershed, the cumulative result may be massive flooding, contamination, or both among primary stream channels.

Throughout American history, modifications have been made to riverine waterways to facilitate transportation industries, mitigate potential floods, create water reserves, and generate power resources. For example, in the first half of the twentieth century, so that larger crafts could be used for shipping, channels were widened and deepened and the naturally sinuous paths of rivers were straightened.

Although such projects provided benefits to humans, they were often devastating to neighboring aquatic and terrestrial habitats. Furthermore, traditional floodplains became submerged along with fertile soils, as well as flood mitigating and water-filtering wetlands. Finally, as industrial activities on or along rivers developed, subsequent point- and nonpoint-source pollutants infiltrated many rivers and connected waterways through transport and deposition of dissolved and particulate contaminants.

In current riverfront redevelopment efforts these lessons of the past must be considered if a healthy future for American river systems is to be ensured.

The Federal Government and Waterfront Redevelopment

Funds, technical support, and remediation work are available from many federal agencies for waterfront activities. However, two agencies are distinguishing themselves in waterfront redevelopment and brownfields: the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Army Corps of Engineers (USACE).

The National Oceanic and Atmospheric Association is charged with the mission to conserve and wisely manage national coastal and

Breathing Life into the Riverfront: The Flats, Cleveland, Ohio

Cleveland, Ohio, was forged much like its industrial epicenter during boom years in the middle of the nineteenth century. Historically, Cleveland has been recognized as a leader in U.S. steel and oil refining, automotive and tool manufacturing, and chemical synthesizing for publishing and paint industries.

The Flats refers to a floodplain of the Cuyahoga River, which meanders through and geographically halves the city of Cleveland. Following the completion of the Ohio and Erie Canal in 1827, Cleveland became a major hub for Great Lakes and waterborne shipping. In the decades that followed, riverfront properties in the Flats were quickly developed into shipyards, warehouses, and oil refineries to accommodate a thriving shipping industry. Meanwhile, the broad, flat expanses that backed up to port facilities along the east and west banks of the Cuyahoga were ideal for railyards to link waterborne shipping and overland shipping facilities. By 1881, nearly all riverfront and adjacent properties in the Flats were filled with heavy industry and transportation facilities. Following World War II, when Cleveland-based industries received national accolades for contributions to wartime efforts, the city entered the 1950s without a clear and innovative vision for future industrial development. Through the 1960s and 1970s, as older facilities began to crumble and U.S. automotive and steel industries looked overseas to minimize labor costs, even more properties in the Flats declined and were abandoned. Furthermore, air and water pollution were prevalent throughout the Flats district during the entire rise and fall of heavy industry in Cleveland. One night, in the summer of 1969, a massive, burning oil slick wound its way down the Cuyahoga, severely damaged two railroad-trestle bridges, and made the cover of *Time* magazine. This episode brought national attention to the neglected state of the Cuyahoga River and placed the waterway among the most polluted in the United States.

Following the enactment of the Clean Water Act in 1972, extensive efforts were made to remediate the Cuyahoga River—at one point the river had been determined to be “dead,” meaning that dissolved oxygen levels were not sufficient to support animal or plant wildlife. Through the 1970s, however, sewer interceptors and wastewater treatment plants were constructed along the Cuyahoga. In addition, many remediation projects were initiated among Flats industrial properties by order of the U.S. Attorney General. In 1978, the Flats Oxbow Association was created to encourage economic redevelopment in the Flats district.

Since 1982, the Flats has become a center for historic renovation, residential living, waterfront recreation, and nightlife entertainment. In that year, the Lake Erie Maritime Trades Association established the Venetian Nights Parade involving privately owned boats along the Cuyahoga. In recent years, that festival has evolved into the River Expo, drawing crowds upward of 250,000 people. In addition, a thriving nightlife now exists in revitalized warehouses along the riverfront that includes numerous restaurants, bars, and clubs. In 1987, the Nautica Entertainment Complex was created as mixed-use property along a half-mile stretch of the Cuyahoga. The complex includes a 4,100-seat amphitheatre; a renovated, luxury party-vessel service; a boardwalk; and beach volleyball courts. In addition, a significant waterborne transportation service has been revitalized to accommodate pedestrian traffic among the Flats' many attractions as well as facilities for local boat owners to use when enjoying water recreation on the Cuyahoga and Lake Erie. The construction of the Gateway Project—an arena and retail district that houses the athletic facilities for the Cleveland Cavaliers and Indians franchises—and the re-establishment of the Cleveland Browns National Football League franchise have been an integral part of Cleveland tourism and commercial redevelopment. Finally, the Flats has been resurrected through the rise of newer, research laboratory industries in the district as well as through the proliferation of residential condominiums—literally bringing life to the once dead river.

Source: *The Encyclopedia of Cleveland History*.

Available at <http://ech.cwru.edu/Scripts/Article.Asp?ID=CR9>.

marine resources by providing funds, resources, and technical assistance to local governments. NOAA is able to offer technical assistance and limited funding to local communities for site assessment analyses under the Coastal Zone Management Act. In addition, NOAA offers Coastal Resource Community Coordinator programs, as well as community workshops, to provide education on the complex yet delicate nature of waterfront resources.

For more information see the discussion of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration in Appendix I.

The U.S. Army Corps of Engineers is charged with providing comprehensive engineering, management, and technical support to the Department of Defense and other federal agencies, as well as to state and local governments. While unable to contribute monies to projects, USACE offers technical assistance and conducts assessments for communities and other federal agencies. Many of those services focus on waterfront and waterway projects commensurate with USACE's history of waterborne navigation works. However, the agency is developing a new emphasis that balances the creation of public works with the maintenance of livable cities.

For more information see the discussion of the U.S. Department of Defense, U.S. Army Corps of Engineers in Appendix I.

In addition to NOAA and USACE, the U.S. Fish and Wildlife Service (USFWS) and U.S. Maritime Administration (MARAD) are able to contribute to waterfront brownfields redevelopment efforts.

The U.S. Fish and Wildlife Service is the principal agency charged with conserving, protecting, and enhancing the quality of aquatic and land ecosystems in the United States. In so doing, USFWS provides better environmental quality for animal and plant wildlife habitats for the benefit of indigenous species as well as for the enjoyment of the American public. If a revitalization project can be linked to habitat restoration or protection and conservation of potentially affected ecosystems, then USFWS is likely to get involved. For example, under the Environmental Contaminants Program, USFWS assesses effects of oil spills,

point- and nonpoint-source pollution, and hazardous waste contamination. In addition, USFWS undertakes remedial efforts to living resources in Superfund and brownfields cleanups. In other cases, although USFWS may not be providing direct resources or funding to a project, it may be called upon for technical consultation.

For more information see the discussion of the U.S. Department of the Interior, U.S. Fish and Wildlife Service in Appendix I.

The U.S. Maritime Administration oversees the interests of U.S. domestic and international waterborne commerce. Two hallmark missions of MARAD are the maintenance of a safe and environmentally sound maritime transportation system, and promotion of national security and economic growth through maritime endeavors. MARAD is able to contribute to waterfront brownfields development through economic and technical assistance. MARAD recognizes the importance of shipyard revitalization and upkeep and has devised a number of programs to streamline operations in this industry. Those programs do not address brownfields remediation in the conventional sense, but rather they encourage financial stability and bureaucratic efficiency in shipbuilding industries.

For more information see the discussion of the U.S. Department of Transportation, U.S. Maritime Administration in Appendix I.

Local and State Governments and Waterfront Redevelopment

Many state agencies are also becoming active in redevelopment of waterfronts. Waterfront contamination is often widespread and can be a deterrent to potential redevelopers because of the liability risks. State environmental agencies are stepping in and encouraging remediation through voluntary cleanup programs that support a landowner or potential landowner in remediating a site to certain standards. In such a case, landowners will be not subject to an enforcement action as long as they are remediating the property to the best of their knowledge. States are also providing infrastructure improvements to waterfront areas through improved roads. Many waterfront areas are in state-designated economic development areas, often called enterprise zones.

Michigan Coastal Management Plan

Michigan has enacted a comprehensive Coastal Management Plan (CMP) to provide protection to its vast expanses of waterfronts along four of the Great Lakes—the longest freshwater coastline in the world. The CMP is modeled after the federal Coastal Zone Management Act (CZMA) of 1972, which enables coastal states to develop programs aimed at sustainable development and ecosystem protection on coastal lands. To its credit, in 1978 Michigan became one of the first states to have a CMP approved and implemented.

The Michigan CMP is administered by the Great Lakes Shorelands Section of the Michigan Department of Environmental Quality (MDEQ). The office charged with the bulk of administration of the CMP is the Lake and Water Management Division (LWMD). Administrative groundwork is then distributed among seven offices within the LWMD that encompass coastal issues ranging from drinking water, submerged lands, wetlands, and sand dunes, to soil resources. Currently, the CMP has been updated to adapt coastal sections of the federal Natural Resource and Environmental Protection Act of 1994 and to review evolving federal agency roles in coastal development practices to ensure compliance within comparable state divisions.

The Michigan CMP receives an annual \$2.4 million federal grant that is then matched by state and local funding. The majority of this grant is used to pay the salaries—in full or in part—of the full-time employees of the LWMD. Roughly one-third of the grant is disseminated to local Great Lakes coastal communities to finance individual development and conservation projects. Communities are encouraged to apply for these annual grants, a highly competitive process designed to reward thorough, specific, and comprehensive proposals and congruities to the established CMP. Among some 300 coastal communities, fifty localities are selected to receive the annual \$50,000 grants. The local grants are then designated for use as mandated in sections 306 and 306A of the CZMA. Section 306 favors exploratory activities including site assessments, education programs, funding estimates, institutional controls studies, and expansion of development, redevelopment, and conservation policies. Section 306A applies to low-cost construction projects such as trails, boardwalks, and scenic overlooks; small-scale restoration; and retrofitting coastal-related infrastructure.

To date, Michigan has been recognized for its commitment to Great Lakes coastal communities through the CMP. In short, this program has allowed the MDEQ to improve the administration of coastal regulation programs and to provide increased technical and financial assistance to local governments. Most recently, Governor John Engler made provisions for \$143 million of the \$675 million Clean Michigan Initiative Bond to be invested in statewide environmental cleanup, anti-pollution projects, and redevelopment projects.²² Of this appropriation, waterfront redevelopment projects will be awarded a \$20 million grant through the MDEQ and Strategic Fund/Economic Development Corporation. Related areas that will benefit from this funding include projects to clean up and redevelop, efforts to remediate contaminated lake and river sediments, projects to control and prevent nonpoint-source pollution, and general projects to prevent pollution. In addition, CMP is being applied creatively to anti-sprawl development measures that conserve and restore agricultural lands and wildlife habitats.

Source: Michigan Department of Environmental Quality—Coastal Zone Management. *Michigan Coastal Management Program*. March 7, 2000. Available at http://www.deq.state.mi.us/lwm/grt_lakes/czm/czm.html.

States encourage economic development activity through tax incentives and other fiscal rewards for developers who invest in the area. Waterfront development can be the most complicated type of brownfields remediation because the fluid nature of water compounds contamination. Also potentially responsible parties can be difficult or impossible to

find, so recovery of remediation expenses can be a very lengthy process. Furthermore, the public often considers waterfront areas more valuable because of their past history and because of sentimental attachment. For those reasons, careful long-term planning, comprehensive community involvement, and careful partnering among local, state, and

federal agencies, as well as with the private sector, are essential for successful redevelopment to revert the mistakes of yesteryear's waterfronts.

Waterfront brownfields redevelopment demonstrates another example of a broad range of challenges and opportunities that can be effectively addressed to preserve land resources with great industrial, transportation, historic, recreational, and aesthetic significance. However, not all brownfields redevelopment projects are set in or near public settings. In some cases, facilities used to produce or house highly toxic materials become underused and eventually closed and abandoned. Most commonly, military installations with arsenals of chemical or nuclear weapons are subject to jurisdictional requirements that supersede public laws and agencies. Therefore, military base reuse demonstrates a form of brownfields redevelopment where a single or few institutions must develop appropriate funding and remediation protocols to address contamination and economic concerns.

5.10

Military Base Reuse

Military base reuse and conversion are not the same as urban redevelopment. Military base reuse is a unique situation governed by its own set of laws. The interplay of so many federal, state, and local agencies can often make the process frustrating and complicated. Communities with abandoned sites find themselves in troubled economic positions and must act quickly if they hope to recover. Communities must balance the need for environmental cleanup with the need for economic renewal.

In 1988, the Congress began the Base Realignment and Closure (BRAC) program in order to reduce military infrastructure to correspond with its post-cold war needs. To date there have been four rounds of military base closures (in 1988, 1991, 1993, and 1995) resulting in the closure or realignment of 98 major bases and 250 smaller installations. The 1988 Base Closure and Realignment Act required Congress to approve the closing

of bases that were recommended for closing by the Secretary of Defense. However, because the process was seen as too political, Congress enacted the Defense Base Closure and Realignment Act of 1990 to change the process.

Initiating the Process

The new process establishes an independent BRAC commission to oversee the selection of bases for closing. The commission reviews a list of bases submitted by the Department of Defense (DOD), which has established eight criteria in compiling its list of closures. The criteria are primarily based on the military's readiness needs and the ability of other bases to provide adequate support if a base is closed. The commission reviews the list, visits the recommended sites, and holds public hearings to receive alternative recommendations. The commission then sends the list to the president for approval. If approved by the president, the list is then sent on to Congress for final approval. Once Congress receives the list, it votes to approve or reject all of the closings as a whole. Congress cannot make additions to or subtractions from the list.

Once a base has been slated for closure, the affected region forms a local redevelopment authority (LRA). The LRA consists of local business interests and citizens that are concerned with the closing and reuse of the base. The LRA represents the diverse interests of the area. The LRA develops a reuse plan for the facility, considering environmental contamination, natural resources, historic preservation issues, the needs of local homeless providers, the local community, and economic circumstances. The LRA submits its completed plan to DOD and the U.S. Department of Housing and Urban Development. Both agencies must approve the plan before it can be implemented.

Many former military bases are highly contaminated. Liability for environmental cleanup falls on DOD, under the Comprehensive Environmental Response, Compensation and Liability Act. Even if the contamination was legal at the time, the military is responsible for remediation of the property. Closure of a base does not affect DOD's responsibility to clean up sites. DOD is also responsible for cleaning up any contamination that has spread beyond the base's boundaries.

Within eighteen months after a BRAC procedure is finalized, DOD must identify any base where hazardous materials or petroleum products were kept for a year or more. By doing this, DOD can identify uncontaminated parcels of land, which may be eligible for early transfer. DOD identifies “clean” parcels in consultation with the U.S. Environmental Protection Agency and state regulators. Before any transfer can be finalized the military branch must prepare a Finding of Suitability to Transfer or a Finding of Suitability to Lease, which will determine if the property is environmentally proper for its intended use or if any restrictions are necessary. The determination will be made using an Environmental Baseline Survey that identifies and analyzes all records of the base and the surrounding area. Physical inspections and interviews with current and former base employees and local officials are also conducted. The LRA must provide clear information to the Base Cleanup Team about its redevelopment plan so that a proper suitability statement can be written and cleanup can be conducted to the proper level. The suitability statement details what remediation will be necessary for the property to be used as the LRA desires.

Weighing Economic Issues

Base closings affect the entire economy of an area. They result in a great loss of both civilian and military jobs. Military staff will be transferred along with their families to new locations. Civilians and their families may also leave the area if they cannot find jobs locally. Local businesses, both those directly and indirectly connected with the base and its personnel, will suffer a loss in revenue. Housing sales will likely slow down as soon as a closure is announced and will worsen as transfers begin. Schools may also suffer as predetermined, district populations decrease and the funding for military children attending the schools is withdrawn. These odds often seem insurmountable to communities, but there are positive sides to base closings as well.

Cities that diversify their economies after a base closure fare better in the long term.

The closing of a military base often forces a community to diversify its economy and not to be reliant on any one employer or industry. Communities with diverse economies are often the quickest to recover from a base closing because the economies were not dependent on base employment alone. Cities that diversify their economies after a base closure fare better in the long term. One way this can be done is by subdividing ownership of the former base property to various owners, as opposed to allowing the former base to become the campus for a single entity. By dividing the site, a community can provide itself with many different sources of jobs and tax revenue. This process will diversify the local economy, allowing the community to recover and to insulate itself from future economic hardship.

Considering Environmental Issues

The biggest obstacle for many communities with closed bases is environmental contamination. Potential health effects on the community surrounding the base exist from contaminants on the base or from those that spread beyond the installation’s boundaries. Contamination also has a major effect on base reuse. Some bases are contaminated not only by hazardous waste and chemicals, but also by unexploded ordnance. Therefore, it can take years before any new business can be brought to a community, causing long-term economic hardship.

The military does not accept liability for asbestos and lead-based paint contained in buildings because those contaminants present no danger unless disturbed. Because many buildings on military bases were designed for special uses, they often cannot be used or renovated for commercial use. Therefore, most structures on former bases are not part of redevelopment plans and must be destroyed to permit reuse of the property. Once the buildings are destroyed, the contaminants become hazards and must be disposed of with extreme care. The costs for clean up of such contaminants, therefore, fall on LRAs and not the military.

Another issue in base reuse is discrepancies in cleanup standards. The LRA, Restoration Advisory Board, DOD, the state environmental protection agency, the U.S. Environmental Protec-

tion Agency, and developers all may want cleanup to be completed to different levels. One party may want complete remediation so that the land can be used for any purpose, including residential use. Another party may want to clean up the land only to a risk-based level and to employ institutional controls on the property. DOD's policy is that it will clean up land in accordance with the LRA's redevelopment plan; but as DOD points out, the more comprehensive the cleanup, the longer the process will take. This leaves the LRAs and communities to strike a balance between environmental cleanup and the need for economic renewal. The LRA must achieve consensus among the interested parties because it alone is in charge of proper redevelopment of the property.

Reacting to a Closure

To successfully handle a base closure, a community must act early. When Congress announces that it is ordering the formation of a committee to initiate a new round of base closures, the community should take a two-pronged approach. First, communities should ensure that the merits of the base are fairly recognized. Once a base is placed on the BRAC list it is almost impossible to get it removed. Second, communities should envision the makeup of the LRA and the base's redevelopment potential. Input should be sought from both public and private parties to ensure that everything can be in place for the creation of a redevelopment plan, including capital for infrastructure and construction. This planning should all be done early, before the base closure is announced.

Community leaders must be aware of the reuse process and the needs of the entire community. They must communicate with the military installation's leaders, citizens, business leaders, and other affected groups. They should not assume that a new DOD or federal program will take ownership of the land. The community should also not predetermine land use or think of the site in strictly military terms. The LRA should think in a revolutionary fashion and not jump at the first prospective developer. This process should be well thought out and should be the result of preparation, not knee-jerk reactions. The community must analyze its long-term needs and consider what it will need to remain economically viable.

Procuring Resources for Communities

With every closing there is a Base Transition Coordinator (BTC), who works as an ombudsman for the community. The BTC can provide the community with information regarding environmental cleanup and reuse of the base. The community can communicate with the BTC and the LRA through a Restoration Advisory Board, which provides recommendations regarding cleanup and environmental issues on the closing base. The RAB is made up of local government representatives, community members, community organizations, Native American tribal representatives (if applicable), and other concerned stakeholders.

When a city or county is faced with a base closing, it is not alone. Help exists on the federal level. Within DOD the Office of Economic Adjustment assists communities with organizational, planning, and transitional needs and can also provide limited planning grants. Only the LRA is eligible to receive those grants. The U.S. Department of Labor helps provide job training for former federal employees.

Various types of conveyances allow the transfer of property from the military to the LRA to be made at a reduced rate, sometimes up to 100 percent of fair market value. No-cost economic development conveyances (EDCs) are a new federal property disposal policy, created to help with job creation. DOD can grant EDCs if the land will be used to promote long-term job growth. This policy precludes the land from being used for residential or recreational space because those uses create only short-term employment in the creation of the structures. EDCs also require that for seven years all revenue from the property be reinvested into economic development. EDCs are a departure from previous federal law, which made public use the first priority for land reuse. The change was made because public uses often create few jobs, which are necessary after a base closing.

For example, an LRA's redevelopment plan may call for leasing out the property to a factory that would provide employment. The LRA then plans on investing the net profits into projects that would bring additional jobs to the former base, including infrastructure improvement and utility upgrades. This LRA could apply for a no-cost EDC, and potentially receive the land for free,

because its reuse plan calls for continuous job creation.

DOD can grant public-use conveyances when the site will be converted for public purposes, such as airports, seaports, historic monuments or parks. DOD can also issue homeless-assistance conveyances, at no cost to homeless assistance providers, if the land will be used to aid the homeless.

Although the challenge may be daunting, the future can be a positive one for a community faced with a base closure. In December 1998, the General Accounting Office reported that, as of 1997, approximately two-thirds of communities affected by post-1988 closures had unemployment rates at or below the national level. Turnaround may take time, but communities have recovered and in some cases are better off than they were before.

Military base reuse illustrates two important factors of brownfields development. First, it demonstrates the need for creative program development among a single or small group of agencies that must collaborate to remediate materials with highly unusual and toxic proper-

ties. Second, it illustrates the dire consequences to a “one-factory” town when a predominant industry leaves a community and eliminates numerous primary and support employment opportunities.

Industrial pursuits that are compatible with the natural environment and blend the needs and visions of surrounding communities are becoming increasingly popular. Evolving ecological industrial parks are founded on ideals that combine teamwork, employment security, efficient resource use, human health and safety, and environmental stewardship.

5.11

Eco-Industrial Parks

American industrialism emerged in the mid-nineteenth century and proliferated through the World War II era. Not surprisingly, urban communities thrived and grew to immense proportions from this catalyst, creating an increasing pool of commercial and industrial markets. In many cases,

Fulfilling Duties After Closure: Alameda Naval Air Station, Alameda, California

The reuse of the former Naval Air Station in Alameda, California, is an example of a successful base reuse. In November 1994, numerous interests came together in a collaborative effort. They included the following members of the Alameda LRA: the Alameda Reuse and Redevelopment Authority (ARRA), a representative of the Alameda RAB, members of the Alameda Homeless Collaborative, and others. They agreed to support the development of immediate and long-term reuse strategies to make the regional economy healthier and environmentally stable by involving diverse communities in the process.

In its planning, ARRA also took into account the plight of the homeless. An agreement was reached under which a percentage of base family housing or substitute housing will be used for homeless assistance and provide permanent or transitional housing. Two hundred dormitory rooms were also made available for homeless assistance. The group also set up a hiring center, along with other programs.

Today, sixty-three incubator companies are working to bring new technologies to the market, including electric cars, and have created 1,364 new jobs. Alameda Naval Station is also being used by Hollywood movie companies to shoot films.

Alameda was successful because of the system it used. The Alameda LRA took input from a broad range of interests. While the economy was the first priority, the needs of the homeless were also taken into account. ARRA split the site and brought in diverse businesses that were able to create a variety of jobs for people in the area. ARRA also thought in a revolutionary fashion, bringing new industries to the area and not depending on one industry. Taking all these steps translated into a successful reuse of the base.

a single industrial district—often linked to a specific land or water resource—accounted for a significant portion of the civic revenue for a community. Following World War II, the nature of industry began to change on a global scale. As new forms of transportation, manufacturing, and communication evolved in the latter half of the twentieth century, industrial strategies shifted toward centralized manufacturing.

As a result of that shift, many regional industrial facilities deteriorated and closed, sometimes capsizing entire communities along the way. Facilities that managed to persist through downsizing and overseas relocation were left geographically and technologically isolated from traditional clients. In nearly all instances, surviving communities suffered through unstable times and decreases to the local quality of life. In addition, the impacts of environmental degradation that had accompanied nearly a century of unmitigated dumping, run-off, and landfill practices were yet to be fully recognized.

In the latter decades of the twentieth century, initiatives aimed at urban renewal and sustainable development swept across the industrial nations of the world. Among those new approaches were attempts to create new visions that synthesized modern technology, comprehensive planning, and environmental stewardship. One of the forerunners in this process is the emerging concept of the ecological industry.

The goal of eco-industry is to maximize efficiency in production while minimizing environmental effects.

Examining Eco-Industry

Eco-industry refers to the practice of examining and considering all components—human, natural, and technological—in the industrial process under the rubric of an ecosystem.²³ The goal of eco-industry is to maximize efficiency in production while minimizing environmental effects. In addition, material components of the industrial process are produced as efficiently as possible, including: building

materials and designs, manufacturing processes, resources, and by-products. The underlying vision of eco-industry is to achieve “sustainable development by creating high quality jobs in environmentally sound industry.”²⁴

Eco-industry seeks to create an institution that operates within sustainable environmental parameters and can adapt to economic and demographic trends. This sense of resilience allows an eco-industry to bend under duress where traditional businesses may have been broken by financial or organizational hardships. Moreover, the underlying concept of perpetual reinvention allows ecological industries to evolve with the global marketplace. When these principles are merged, the result is an industry that operates at the utmost levels of efficiency—thereby generating minimal amounts of waste by-products. Ecological industries remedy brownfields by creating new industrial standards that reduce the potential of institutional failure. In this way, ecological industries are more of a mechanism for brownfields prevention than remediation.

Redefining Industrial Principles

One tenet of this approach involves a few simple thermodynamic principles: matter and energy are neither created nor destroyed, but rather are transferred to less structured and less useful forms. The ecological and industrial challenge is to maximize the potential industrial output from a minimum input of costly, non-renewable resources, by maximizing the efficient use of resources and minimizing the generation of wastes. In addition, new alternative energy resources can be used to supplement traditional ones.

A second goal of eco-industry is to break away from the classic portrait of a single industry or industrial district forming the backbone of a community and dictating the stability and identity of a town or region. Such a paradigm has proven to be precarious and detrimental to the stability of cities. In such a situation, when one or all of the industrial foundations of a city wane and crumble, the community suffers because of a systematic process of unemployment, infrastructure decay, and migration. The eco-industrial strategy is to

establish a form of industry that captures and adapts the social, economic, and cultural strengths and attributes of local and regional communities. This strategy allows a community, in effect, to pool its resources to form a synergistic relationship, yet to maintain the traditional values and integrity of each societal component.

Finally, eco-industry attempts to create a system that operates in the most environmentally friendly manner possible. Building on highly efficient resource use and incorporation of the societal aspects of its community, an eco-industry strives to exist in harmony with its natural and social surroundings.

Although still emerging, the aforementioned concepts are currently being used in evolving eco-industrial parks worldwide.

Eco-Industrial Parks

The evolving eco-industrial park (EIP) combines the basic tenets of ecological industry and represents an integral facet in the future of sustainable development. Instead of supporting a local and regional economy, the EIP thrives on the cultural traditions and natural resources of a community to form a mutually beneficial relationship. In turn, the EIP is a unique, collaborative product tailored to the demographic, social, economic, and environmental needs of the community it serves. Finally, the vision of the EIP seeks to merge industry and the environment, two provinces that have historically shared an adversarial relationship. In the most general sense, eco-industrial parks operate on a number of common principles.

Economic and Environmental Performance in Balance

Because of the underlying premise of maximizing the efficiency of operations, economic and environmental factors form a symbiotic relationship: a decrease in environmental efficiency causes a decrease in profits. EIPs are engineered to generate revenue and job opportunities for the surrounding community. While tasks are completed in a sustainable manner, an EIP should not be shrouded in environmental sentimentalism. On the contrary, the EIP is a market-driven mechanism that seeks to augment returns by eliminating wasteful practices.

A Green Industry In the Forest: Raymond, Washington

The Raymond Green EIP immerses a selective logging industry in the heart of its resource base—a historical, second growth, coastal forest in the State of Washington. Because the EIP will encompass the entire drainage basin of Butte Creek, efforts to treat and recycle industrial wastewaters are handled through a network of channels separated from natural tributaries on the site. In addition, programs to monitor existing waterways, to balance forest biodiversity with industrial productivity, and to recycle and treat waste by-products on-site are being instituted. The goals of those practices are to synthesize a low-impact lumber manufacturing facility with its delicate region of resources. While this relationship greatly diminishes resource and waste transportation costs, environmental stewardship is encouraged by selective harvesting and decreasing lodes of wastes normally destined for overwhelmed regional landfill facilities.

Source: *Smart Growth Network Case Study: Raymond Green Eco-Industrial Park*. February 25, 2000

Available at http://www.smartgrowth.org/casestudies/ecoin_raymond.html.

Efficient and Cyclical Resource Use

Every effort must be made to seize the maximum potential from resources consumed in industrial operations. As a result, emphases on raw material consumption are parlayed into increased efforts to recycle, recover, and employ by-products for secondary and tertiary uses throughout the industrial cycle. The primary benefit of this practice is decreasing the need to import raw materials. In addition, a natural reduction of solid wastes allows workers, vehicles, and properties formerly used to collect, treat, and store these by-products to be re-invested and used in a more effective manner. However, methods to exchange and recycle material and energy resources are not formulas that guarantee sustainability. EIPs must also cultivate creative personnel and marketing resources to remain competitive.

Government Support and Cooperation

Initial support and cooperation among local, regional, and state governmental officials and agencies are essential to establishing and developing an EIP. During the groundbreaking of the EIP, governments may expedite zoning and permitting

Pipedreams or Reality?: Kalundborg, Denmark

A classic example of recycling resources is found in one of the first EIPs, which was developed in Kalundborg, Denmark. For certain procedures, businesses are literally connected through a pipeworks that distributes water and steam resources in different states of degradation to be used by appropriate servers. Steam generated by a central coal-burning power plant is diverted to neighboring industries, while excess heat is rerouted to local residential units, greenhouses, and fish hatcheries through a heat-exchanging facility. A highly organized transportation and treatment network conveniently provides industrial extracts and by-products to best-suited clients. After a refinery extracts sulfuric acid from its natural gases, the acid is sold to a chemical manufacturer. Fly ash from the power plant helps supply a neighboring cement producer. Finally, sludge by-products from many of the park's members are recycled as agricultural fertilizer, while community wastewaters are reused with minimal treatment in the power plant.

Source: Friend, Gil. *The New Bottom Line: Strategic Perspectives on Business and Environment*. Industrial Ecology in Motion (3): Eco-Industrial Parks. NBL 4.23. November 21, 1995.

processes; extend existing water, power, and transportation infrastructure connections; and offer technical assistance. However, once established, EIPs are driven by marketplace competition and have demonstrated that they encourage environmental and institutional goals that exceed established compliance standards. Although skeptics discount those assumptions as leniency, the EIP design discourages wasteful practices by basing profit margins on the efficient and cyclical usage of resources.

Health and Safety Practices and Training Bolster Morale

Maintaining a facility that promotes the healthy coexistence of industry and the environment is only one rung of the EIP structure. Internally, EIPs'

strengths radiate from the well-being of employees and facilities. Simply put, by increasing the safety and environmental training of all employees, EIPs instill a positive consciousness among staff toward colleagues, the surrounding community, and the environment. In addition, facilities, operations, and technologies that require higher levels of compulsory education or advanced training translate into higher wages among staff members, attract desirable experts from applicable fields, and create a greater sense of job stability.

Internal and External Networks for Sharing Information

At the dawning of the twenty-first century, the need to keep pace with if not stay ahead of, the information technology game has become apparent.

Calling in the Experts: Oakland, California

Because of a number of multijurisdictional issues in the Greater Oakland Region, the East Bay EIP strives to invoke the planning support of many Bay Area commissions as well as local and state government officials and agencies. Included among local supporters are a recycling market development commission and the Alameda County Waste Management Authority and Recycling Board. In addition, the East Bay EIP is calling on the expertise of local and state economic development agencies. From those institutions, the East Bay EIP hopes to obtain funding for site selection and feasibility assessments. Once established, however, the EIP intends to fund development—costs of land preparation and structural construction—through private investment by local stakeholders. In addition, the EIP intends to establish departments charged to further develop entrepreneurship and to recruit additional EIP industry partners.

Source: *Smart Growth Network Case Study: East Bay Industrial Park*. February 25, 2000.

Available at http://www.smartgrowth.org/casestudies/ecoin_east_bay.html.

Strength in Grassroots: Minneapolis, Minnesota

Initiated without government funding, prodding, or guidance, the Green Institute EIP is a grassroots movement that demonstrates the potential for a community to recognize its cultural assets and goals while shaping the future of local revitalization efforts. In this instance, the Phillips neighborhood—one of the most destitute and racially diverse neighborhoods in Minneapolis—coordinates local industries through the redevelopment of a small, abandoned site in the vicinity. By pooling resources and efforts, Phillips residents foresee the creation of 200 new jobs in a facility to combine resource and waste treatment, separation, and transportation with general environmental and economic education. In addition, residents intend to develop sound training and safety regimens to satisfy local regulatory standards, but more important, to provide employment opportunity and stability to members of the Phillips neighborhood.

Source: *Smart Growth Network Case Study: Green Institute Eco-Industrial Park*. February 25, 2000.

Available at http://www.smartgrowth.org/casestudies/ecoin_green.html.

Conduits that allow the sharing of various information resources must be effectively maintained and upgraded as marketplace demands dictate. For this reason, EIPs serve as models, not only in using cutting-edge industrial methodologies and technologies, but also by possessing the tools necessary to communicate with a vast array of local and regional stakeholders. More conceptually, the EIP connects various stakeholders in a locality and region through the economic and cultural investments that helped form the complex.

Dynamic and Diverse Businesses and Strategies

To remain competitive in an ever-changing marketplace, businesses that make up the EIP must also continue to evolve corporate strategies. While technology is an exemplary tool in the EIP concept, it cannot replace sound research, devel-

opment, and marketing techniques essential to the dynamic nature of the EIP. Diversity among EIP constituents—in both size and nature—lends itself to a multifaceted marketplace of ideas. Moreover, the EIP must welcome businesses that agree and disagree on a range of issues, with the exception of environmental and industrial sustainability. Such a membership ensures the presence of professional expertise and, in turn, attracts corporations that are interested in participating in a consortium of pioneering ideas.

Local, State, and Federal Governments and Eco-Industrial Park Development EIPs that incorporate brownfields redevelopment clauses are able to draw on a breadth of federal resources to fund and assist projects. Like other brownfields projects, EIPs must carefully evaluate

The Virtual EIP Concept: Tucson, Arizona

The Civano Industrial Eco-Park of Tucson, Arizona, illustrates another possibility of the evolving EIP concept. At Civano, recruiters are aggressively pursuing leading firms in industries synonymous with sustainable development—photovoltaic technologies, electric vehicles, circuit boards, and renewable construction practices. In addition to efforts to share and recycle physical resources and wastes, the underlying goal of the Civano partnership is to create a virtual corporation through the exchange of information and ideas among EIP members and to vault to the forefront of eco-industrial research and development.

Source: *Smart Growth Network Case Study: Civano Industrial Eco-Park*. February 25, 2000.

Available at http://www.smartgrowth.org/casestudies/ecoin_civano.html.

Using Diversity to Encourage Prosperity: Shady Side, Maryland

The Shady Side Eco-Business Park of Maryland provides insight on the importance of a well-balanced membership, strategy, and resources among EIPs. Not unlike many EIPs, Shady Side acts to benefit a disenfranchised community through the combination of environmentally conscious industries. However, Shady Side demonstrates promise through the incorporation of a variety of domestic and international models in the development of vision, market strategy, and resource and site-mapping statements. In addition, Shady Side relies on an ongoing convocation of Business Ecology Roundtables to measure economic performance, stakeholder involvement, and environmental stewardship. Prospective industrial partners include a microbrewery, an aquatic wildlife breeding and research habitat, a marine exploration and technology firm, an oil recycling facility, and a composting facility. Alternative energy resources will be used to supplement a number of power facilities in the park. Finally, Shady Side intends to produce and distribute a variety of educational media (Internet, audio/video cassettes, and booklets), as well as to sponsor community meetings and activities to educate local stakeholders on the importance of ecological industries.

Source: *Smart Growth Network Case Study: Shady Side Eco-Business Park*. February 25, 2000.

Available at http://smartgrowth.org/casestudies/ecoin_shadyside.html.

project goals and determine specific avenues to pursue to garner appropriate federal assistance. For example, EIPs are eligible many aforementioned federal assistance programs such as pilot program funding from EPA, including Brownfields Assessment Pilot funding and Brownfields Cleanup Revolving Loan Funds (BCRLFs) to conduct initial site assessments. HUD financing options, including EZ/EC programs, CDBG grants, Section 108 loans, and BEDI loans, may contribute to funding project planning and construction financing. In addition, EIPs in smaller satellite and rural communities may employ similar USDA assistance such as Rural EZ/EC programs, Business and Industry direct and guaranteed loans, and Rural Utilities Loan financing in redevelopment efforts. In other cases, EIPs could invoke the technical assistance of DOT and USACE to address transportation infrastructure relating to road, rail, and port facilities on land and water resources involved or near a proposed site. In order to provide job specific training programs, EIPs can draw upon services provided in the U.S. Department of Education's Office of Vocational and Adult Education, as well as the U.S. Department of Labor's Job Training Partnership Act and Workforce Investment Act legislation.

For specific information on federal agency programs see Appendix I: Federal Interagency Working Group Summary and Contacts.

It is important to remember that the underlying emphasis of EIPs is to synthesize local and regional resources and interests into project missions and operations. This goal may be accomplished through integrated planning strategies that include a broad cast of local and regional government authorities, public and private interest groups, and the general public. Therefore, while federal assistance can be an integral source for remediating and initiating site development, the torch must be passed to local and regional stakeholders to capture the true essence of the community the EIP will represent and serve.

Industry and the Laws of Nature

As many ecological industries remain in development and planning phases, a number of criticisms have arisen. Eco-industries are likely to face difficulties when attempting to adhere to a scheme of delicately balanced natural cycles and relationships. Under such pretenses, comprehensively developing and retrofitting eco-industrial requirements can be challenging.

The success of any ecosystem, or EIP, relies on sustaining dynamic balances of vital resources in various natural phases. Intricate logistics and schedules to accommodate resource/waste sharing and treatment must be coordinated to ensure that critical materials are received in a timely fashion. Treatment processes must be executed in a consis-

tent and thorough manner to prevent the corruption of materials at any stage of the resource chain. The entire system builds upon the stability of subsystems and individual components. Yet, ecosystems exist in a state of dynamic equilibrium to a reasonable extent. In other words, a decrease in resource consumption in one sector will be compensated for as an increase in another sector. Thus, a prosperous eco-industry must maintain a consistent level of energy and resource exchange among all contributing mechanisms.

Finally, ecological industries face difficulties operating in compliance with environmental parameters because of their profit-driven nature. Even with the best intentions, commitments to environmental stewardship may not hold the same significance as reaping increased profit margins among ecological industrial partners. Yet, traditional economic principles have resulted in practices that have created many brownfields through facility closures, overseas manufacturing, and illegal contaminant dumping. Therefore, the eco-industry is relying on the good faith of members to place a higher emphasis on collective and environmental well-being than on individual interests. One negative scenario includes altering market values of common resources throughout the eco-industrial network. In effect, the entire system may be threatened by a single industry or group of industries that might increase prices on resources or wastes vital to other members of an EIP process.

Eco-industrial parks represent the potential fusion of industry and the environment—a concept that has historically been unthinkable. As a result, opinions of eco-industry range from skepticism to enthusiasm—from heralds of revolutionary thinking to scathing remarks of idealistic naiveté. The idea of the modern EIP is not without fault and must be crafted and implemented meticulously. Perhaps the greatest criticism of the EIP concept is that it looks wonderful on paper but rarely transcribes from theory into practice. Aside from complex infrastructural and scheduling issues, the EIP's success depends on the commitment of profit-driven businesses to remain true to sustainability concerns. While all of those criticisms are valid, they undermine a national and global recognition of the merits of

sustainable development practices. Certainly, the EIP concept is challenging and requires a delicate balance of flexibility, discipline, and dedication among all stakeholders.

5.12

Conclusion

Brownfields reuse requires careful and creative thinking in order to meet evolving needs for space in ways that are safe; that are economically feasible; and that will serve community and local government needs for the foreseeable future. In addition to tangible economic components of brownfields redevelopment, less apparent, aesthetic non-economic aspects must be considered. Both economic and non-economic categories of redevelopment projects are integral to improving and maintaining the overall quality of life in brownfields-affected communities. Through the careful balancing of those two factors and the synthesis of community partnerships, land-use strategies, and technical innovations, communities are nearing the successful completion of brownfields redevelopment projects.

However, another—and perhaps the greatest—challenge in planning for brownfields reuse is financing. As in the case of redevelopment models, a range of creative and straightforward methods and tools can be used to pay for the costs of assessment, remediation, and redevelopment of brownfields. Those financing measures are discussed at length in Chapter 6: Brownfields Finance and Economics.

¹ Lori Montgomery. “‘Smart Code’ Targets Crumbling Buildings.” *Washington Post*. pp. B1, B7. (April 24, 2000).

² Ibid.

³ U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. *Brownfields Success Stories: The Sweet Smell of Success*. (May 18, 2000). Available at http://www.epa.gov/swerosps/bf/html-doc/ss_klam2.htm.

⁴ U.S. Code, volume 42, section 1437f.

⁵ U.S. Department of Housing and Urban Development, Office of Policy and Research. *Now Is the Time: Places Left Behind in the New Economy*. p. 1. (April 1999).

- ⁶ This information was adapted from a presentation by Timothy Leonhard at Brownfields '99 in Dallas, TX. For more information contact Timothy Leonhard, Historic Restoration, Inc., 210 Barron Street #1717, New Orleans, LA.
- ⁷ Natural Resources Defense Council. *Leap of Faith: California's Experiment in Natural Community Conservation Planning*. 1997.
- ⁸ Douglas P. Wheeler. *Habitat Conservation Planning: A New Approach*. 25th Anniversary of Modern Environmental Law.
- ⁹ Thomas Beatley. "Habitat Conservation Plans: A New Tool to Resolve Land-Use Conflicts." *Land Lines*. (7), no. 5. September 1995.
- ¹⁰ U.S. Fish and Wildlife Service, Division of Endangered Species. *Habitat Conservation Planning and Endangered Species*. May 1998. Available at <http://endangered.fws.gov/hcp/index.html>.
- ¹¹ Natural Resources Defense Council. *Leap of Faith: California's Experiment in Natural Community Conservation Planning*. 1997.
- ¹² Blake Velde. U.S. Department of Agriculture, Hazardous Materials Management Group. Interviewed by Elizabeth Stasiak and Thomas Groeneveld. February 24, 2000.
- ¹³ U.S. Department of Agriculture, Economic Research Service.
- ¹⁴ U.S. Department of Commerce, Bureau of the Census. 1990. Washington, D.C.
- ¹⁵ National Association of Development Organizations Research Foundation. *Reclaiming Rural America's Brownfields: A National Report on Rural Brownfields Redevelopment*. Washington, D.C. December 1999.
- ¹⁶ The Economic Research Service places poverty rates in rural communities at 15.5 percent—2.2 percent higher than urban areas.
- ¹⁷ U.S. Department of Agriculture, Rural Development Administration, Office of Community Development. *Progress Report: Rural Empowerment Zones and Enterprise Communities Initiative*. Washington, D.C. April 8, 1998.
- ¹⁸ USDA statistics indicate that U.S. demographics may be loosely broken down into quarter sections among urban, suburban, and rural population designations. Urban and rural populations are composed of roughly equal quarters, while the remaining half (two-quarters) of the American public resides in a suburban setting.
- ¹⁹ American Farmland Trust. *Farmland Information Center—Technical Assistance: the Farmland Protection Toolbox*. April 2, 2000. Available at <http://208.55.71.155/fic/tas/tas-fptool.html>.
- ²⁰ Coates, D.R., ed. *Coastal Geomorphology*. Binghamton, NY: Publications in Geomorphology, State University of New York. 1973.
- ²¹ Walker, Kenneth and Matt Arnn. *Societal Responses: Preserving Waterfront for Water Dependent Uses*. National Oceanic and Atmospheric Administration State of the Coast Report. 1998. Available at http://state_of_coast.noaa.gov/bulletins/html/wdu_11/wdu.html.
- ²² John Truscott. Press Release—Michigan Department of Environmental Quality, Office of the Great Lakes Homepage. July 8, 1999. Available at <http://www.deq.state.mi.us/ogl/cmi/fnddes.html>.
- ²³ In the most general terms, an ecosystem refers to the dynamic and interdependent relationships among living and non-living entities, and the environments they inhabit. In addition, ecosystems may range from the Earth to a wetland to a single drop of water.
- ²⁴ Cornell University. *About Ecological Parks*. April 5, 2000. Available at <http://cfe.cornell.edu/wei/park.html>.

BROWNFIELDS FINANCE AND ECONOMICS



6.1

Overview

Brownfields sites must overcome serious financial hurdles that do not necessarily arise in the development of greenfields projects. The complicated process and legal hurdles of acquiring, cleaning up, and reusing older, often abandoned industrial sites can result in large site-preparation and loan-transaction expenses, as well as costly time delays. Site evaluation and testing, possible legal liabilities, and other factors can easily increase costs and serve to deter private participation in bringing contaminated sites back to productive use. In many situations, the private development and financial sectors are not able or willing to independently ensure that a brownfields project can achieve its full economic potential of site reuse.

Charles Bartsch of the Northeast-Midwest Institute contributed to this chapter.

This chapter seeks to explore the numerous challenges and opportunities available to brownfields redevelopment initiatives including

- 6.2 Public Financing
- 6.3 Private Financing
- 6.4 Banking Policies and Regulations
- 6.5 Environmental Insurance
- 6.6 Conclusion

6.2

Public Financing

Brownfields financing can be especially difficult for start-up firms or small companies with little collateral outside the business itself. In fact, funding gaps are the primary deterrents to site and facility reuse. By providing critical seed money and establishing a climate that invites private investment in brownfields projects, the public sector can help level the economic playing field between greenfields and brownfields sites. Creatively crafted and carefully targeted incentives and assistance can help advance cleanup and reuse activities and achieve significant economic, social, and aesthetic benefits. Such incentives can include grants, loans, loan guarantees, bonds, or cleanup tax credits. Entrepreneurial public sector partnerships are ideal for brownfields cleanup and reuse. Public agencies and organizations that share in the project's risks can also share in its rewards by recovering some of their investment during subsequent site sale or development.

No single public sector approach can ever match the financing needs of every brownfields project. The needs inevitably will vary by project type, developer (e.g. nonprofit development corporation or private investor), level and class of contamination, and financial position and desired return of the site owner or developer. Using a variety of incentives can provide the most effective public sector assistance. These incentives, used separately or in concert with private financing mechanisms, should significantly help in a variety of ways:

- Reducing the lender's risk, for example, by providing incentives or legal clarification for lending institutions that finance companies or projects at sites deemed riskier because of prior uses;
- Reducing the borrower's cost of financing, for example, by (1) making capital more affordable by subsidizing or eliminating the interest charged on brownfields loans, or (2) establishing policies that reduce loan underwriting and documentation costs;
- Easing the developer's or site user's cash flow concerns through incentives such as tax credits; and
- Supporting front-end activities, such as site assessment and cleanup or property assembly, that are particularly important and difficult to finance.

For decades, public finance mechanisms have been used to stimulate economic activity in certain geographic areas or industries or in situations when private capital markets chose not to participate. Increasingly, publicly driven economic development is reaching into new sectors and incorporating new concerns, such as environmental improvement. Some existing programs can confront the environmental issues of site reuse. However, public sector finance programs that cross traditional spheres of activity to address complex new situations such as contamination, cleanup, and related liability are critical components in any local government's program to clean up and reuse brownfields.

Federal Economic Development Tools

The federal government still provides the greatest share of public dollars to assist states and local governments in redeveloping brownfields sites in their communities. Since 1996, the U.S. Environmental Protection Agency (EPA) has awarded over 300 brownfields pilot grants to states, cities, towns, counties, and Native American tribes. In May 1997, EPA announced its National Brownfields Partnership Action Agenda, which, along with other initiatives, provided seed monies to pilot grant communities to establish local revolving loan funds (RLFs) to help finance site cleanups. As part of this partnership agenda and action

plan, the Clinton administration also coordinated other federal urban development programs with the EPA's brownfields pilots. In March 1998, Vice President Gore named sixteen cities as Brownfields Showcase Communities. These communities received funds and other aid and served as models of innovative environmental cleanup and revitalization.

For more information see discussion of the U.S. Environmental Protection Agency in Appendix I.

As local governments work to restore brownfields properties to productive reuse, they must understand the advantages and limitations of the various economic development tools.

In addition to EPA's brownfields work, the U.S. Department of Housing and Urban Development (HUD) Brownfields Economic Development Initiative assists local governments using Section 108 loan guarantees to finance business development efforts that create or retain jobs and increase private investment in their communities. In addition to this initiative, HUD has streamlined its hard-to-track notices of funding availability (NOFAs) into three consolidated "SuperNOFAs," which simplify the application and selection process for HUD's grant programs.

For more information see discussion of the U.S. Department of Housing and Urban Development in Appendix I.

As local governments work to restore brownfields properties to productive reuse, they must understand the advantages and limitations of the various economic development tools. These tools fall into two broad categories: financial and nonfinancial assistance.

Financial Assistance Programs

Financial assistance programs have been shaped to meet several objectives:

- Reducing the lender's risk;
- Reducing the borrower's cost of financing;

- Easing repayment with flexible payment terms;
- Improving business cash flow by reducing or forestalling taxes; and
- Providing equity capital.

Public sector financing initiatives meet one or more of these objectives through a variety of program structures, with the most common noted in the following sections. Since state and local efforts vary so widely, the examples used to illustrate these tools are based primarily on common federal programs.

Grants

Grants provide direct financial help and carry no repayment obligation. They usually are given for capital-intensive activities such as site preparation or infrastructure improvement. HUD and the Economic Development Administration are the most likely federal sources of grant funding. Only in rare cases are grants given directly to private firms for permanent capital improvements.

Loans

Loans allow companies to borrow the resources they need, either directly or through local economic development agencies, authorities, or

Revolving Loan Funds

Commensurate with the Brownfields National Partnership Action Agenda, a number of federal agencies have designed grant and loan programs to help states and localities to capitalize loan pools or revolving loan funds. In addition, state funds and investments or donations from private institutions are frequently included. Revolving loan funds work by reinvesting resources and loan pools while outstanding loans are repaid, multiplying the effect of the initial investment and creating a self-sustaining source of capital. Communities have traditionally used EDA-capitalized revolving funds, which have significant potential to help with brownfields activities, to support manufacturing improvement projects. In addition, EPA created the Brownfields Cleanup Revolving Loan Fund (BCRLF) Pilot program, as part of its Brownfields Economic Redevelopment Initiative, in 1997. The BCRLF program awards local governments with up to \$500,000 to establish local revolving loan funds.

corporations. Economic development loans often are made at advantageous terms and below-market rates of interest. They are important in filling capital gaps that impede further private investment in development projects. Loan programs are particularly attractive to new or small businesses and firms engaged in undertakings that are perceived to be risky, such as brownfields redevelopment. These companies usually lack access to affordable capital from conventional lending sources. Most loan programs require certain performance thresholds, often linked to job creation. Loans usually finance long-term fixed assets such as machinery or buildings, which are well suited to brownfields projects. They seldom provide the flexible, short-term working capital needed for inventories and day-to-day operating expenses.

Subordinated or secondary loans are essentially companion loans made by public agencies to recipients that have received a primary loan from a private sector source. The U.S. Small Business Administration's (SBA) Section 504 program

provides this type of loan. Publicly backed subordinated loans improve the creditworthiness of a business in two ways. First, they lower the amount of capital that private financiers must invest in a project. Second, they give the private lender first claim on assets in the event of a default by the borrower. This claim can be a critical factor in addressing risks commonly associated with brownfields lending. Secondary loans can be especially helpful to manufacturers who must secure significant levels of capital for modernization or expansion projects.

Loan Guarantees

A loan guarantee is a pledge to cover most or all of an outstanding balance on a loan made by a private lending institution in the event of a default. Loan guarantees also lower the risk of lending, thereby increasing the availability of private capital. Often they reduce the cost of borrowing as well. Since most loan guarantees are never exercised, guarantees are less expensive to the public sector than direct loans. At the federal level, SBA is the major source of such assistance. In addition, HUD's Section 108 loan guarantees enable local governments to finance economic development projects that might be too large for up-front financing with single-year Community Development Block Grants (CDBGs).

Interest Subsidies

Loans are more affordable to business borrowers when their carrying charges are lowered. Interest subsidies can be paid directly to lenders to reduce the rates charged to borrowers. The public sector sponsor, in exchange, usually stipulates eligible uses or outcomes (such as the type or location of investment or the number of jobs created) for the proceeds of the subsidized loan. Frequently, rates are brought several points below the prevailing market rate. Interest-subsidy efforts have proven to be quite effective as state programs. Federal interest subsidies are rare, and they are usually tied to HUD-supported CDBG activities.

Bond Financing

Federally sanctioned industrial development bonds (IDBs) are private-purpose bonds authorized or issued by a public agency, development

U.S. Small Business Administration

The U.S. Small Business Administration is an independent federal agency charged to aid, counsel, and protect the interests of small businesses throughout the nation. SBA offers financial management and technical and government-contracting assistance to current and prospective small business owners. SBA also has specialized programs to target minority- and women-owned small businesses.

Under the influence of brownfields redevelopment initiatives, SBA has changed its loan policies to accommodate the promotion of small business development on contaminated and remediated properties. In December 1997, SBA revised its procedures to give field offices great latitude in evaluating the risk to collateral property from environmental contamination. The revision provided guidance to field offices to determine whether the risk was manageable so that financial assistance could be provided. Even though SBA has no specific funds for brownfields remediation, businesses on brownfields are now eligible for all SBA programs and assistance.

For more information see discussion of the U.S. Small Business Administration in Appendix I.

corporation, or similar nonprofit organization. Targeted to manufacturers, IDB proceeds provide companies with financing to acquire fixed assets for industrial projects. The issuing government encounters little risk because the private beneficiary repays the debt and the bond buyers bear the loss in the event of default.

In essence, IDBs are a form of federal interest subsidy. Because the interest they bear is not subject to federal and state taxation, IDBs can be offered at lower-than-market interest rates to bond buyers, effectively reducing the cost of capital to the beneficiary manufacturer.

Because of perceived and real abuses of IDB subsidies, Congress in the 1984 and 1986 tax acts curtailed levels of issuance (generally to \$50 per capita per state) and restricted eligible uses. Consequently, a few states have experimented with taxable bond issues to promote economic development. Most states and local governments also use other forms of tax-exempt bond borrowings to help finance public and private projects, with the latter often focusing on manufacturers that typically have higher capital needs.

Equity Financing

Equity investors essentially buy into a firm. They usually accept a variable, rather than a fixed-term, payback obligation. The amount and schedule of payments are tied to the firm's future income or profitability, not the calendar. Companies receiving equity financing frequently obtain a waiver on repayments until they generate a return on the investment. Paybacks often are pegged to a percentage of return rather than a fixed amount. Some SBA venture and seed capital funds are structured as a form of equity financing. Like any equity partner, the sponsoring agency could earn a tidy return if the venture succeeds, and it risks losing the entire amount if the venture fails.

Tax Credits and Deductions

Tax benefits commonly are pegged to certain types of activity (such as manufacturing), specific types of capital investment (such as structural renovation), or jobs for certain numbers or types of workers (often youth and the economically disadvantaged). Congress devised rehabilitation tax credits in the 1970s to discourage the unnecessary demolition of

Special Facility Bonds

In the 1993 legislation that directed HUD and the U.S. Department of Agriculture (USDA) to designate empowerment zones (EZs) and enterprise communities (ECs), Congress authorized special tax-exempt financing targeted to these areas—"special facility" bonds. Up to \$3 million can be issued for projects, including activities such as basic site preparation, construction or renovation of company facilities, and acquisition of machinery and equipment. These bonds have already been used in Cuyahoga County, Ohio, and other areas to address brownfields site challenges.

sound older buildings and to slow the loss or relocation of businesses from older urban areas. Originally, the intention for rehabilitation credits was to help level the economic playing field and balance the development costs between older, established (and often declining) areas and emerging, newly built suburban centers. This goal is the same one advanced by proponents of brownfields cleanup and reuse.

Tax-Advantaged Zones

Designated geographical areas, such as federal foreign trade zones (FTZs) and HUD/USDA-designated empowerment zones, are offered special incentives or allowed special activities. In the case of FTZs, most production in the zone earmarked for export is exempt from specified levies (such as income taxes and customs duties), while comparable activity taking place outside the zone is not exempt. Businesses locating in any empowerment

Taxpayer Relief Act

Laws such as the Taxpayer Relief Act (H.R. 2014/P.L. 105-34), signed by President Clinton in August 1997, create tax-advantaged zones to help spur the cleanup and redevelopment of brownfields in distressed urban and rural areas. According to the law, a taxpayer may be able to deduct qualified remediation expenses incurred to clean up a property if the property is in or near an area with a high poverty rate, in a federally designated EZ or enterprise community (EC), or within an EPA brownfields pilot project area that was announced before February 1, 1997.

zone can take advantage of easier tax-exempt bond financing incentives (discussed earlier), worker training incentives, and advantageous tax treatment of investment through equity expensing. Urban empowerment zones have been designated in Atlanta, Georgia; Chicago, Illinois; Baltimore, Maryland; Detroit, Michigan; New York, New York; and Philadelphia, Pennsylvania-Camden, New Jersey. Rural zones have been defined in the Kentucky Highlands, the Mid-Delta region of Mississippi, and the Grand Valley area of Texas. *For more information see discussion of the U.S. Department of Agriculture and the U.S. Department of Housing and Urban Development in Appendix I.*

Nonfinancial Assistance Programs

Nonfinancial assistance programs can also be used to help parties involved in brownfields development obtain financing. Common types of assistance that may be useful in brownfields situations include management assistance and loan packaging.

Management Assistance

Management seminars, counseling, or tailored consulting services help new and small businesses boost their chances for survival. SBA's Small Business Development Centers (SBDCs) were established to collect and coordinate all types of management assistance information. SBDCs teach skills such as accounting, preparing loan documents, and applying to state and federal programs. SBDCs and similar organizations also may offer customized business plan development advice or loan underwriting guidance and support. Most services are available free or at low cost. Providing high-quality management education at a low cost may be one of the most effective ways a community can encourage economic development.

Loan Packaging

Some technical assistance programs help assemble loan components. That service can help address what is often a significant up-front cost in brownfields redevelopment. "Loan-packaging" services may involve liaison efforts with private lenders and government agencies, including environmental offices. Such services can be essential if firms must obtain capital from several sources with differing interest rates, payback

arrangements, and levels of risk to lenders. In particular, loan-packaging staff can provide valuable support to brownfields projects in small towns, where financial institutions may be less sophisticated in terms of cleanup products and remediation technologies and thus more reluctant to lend.

States are well positioned to promote brownfields reuse projects, and a number have launched financing initiatives focused on brownfields reuse situations.

State Economic Development Tools

States are well positioned to promote brownfields reuse projects, and a number have launched financing initiatives focused on brownfields reuse situations. Many of these initiatives are tied to state voluntary cleanup programs. Examples of states providing financial assistance include the following:

- Massachusetts has a new \$30 million state Brownfields Redevelopment Fund for loans and grants. Half the fund is used for cleanups (up to \$500,000 per project), and half is used for assessments (up to \$50,000 per project).
- Pennsylvania offers grants to cities and development authorities for brownfields inventory (up to \$50,000). In addition, landowners who redevelop properties in newly designated distressed Keystone Opportunity Zones may have all taxes forgiven for up to twelve years.
- The state of Washington has increased the maximum project size for participation in the state's Remedial Action Grant Program to \$5 million and increased the total size of the pool to \$25 million.
- Georgia's Hazardous Waste Trust Fund provides local governments with up to \$2 million per site for site investigation and remediation at solid waste disposal facilities.
- Alabama offers up to \$375,000 in industrial development grants, which may be adapted to brownfields purposes.

- California’s Mollo-Roos District designation allows communities to abate property taxes and issue bonds to capitalize revolving loan funds for site assessment and cleanup.
- Connecticut has a Dry Cleaner Establishment Remediation Fund for financing soil and groundwater remediation and pollution prevention (up to \$50,000 per year).
- Illinois has a Brownfields Redevelopment Grant Program that offers up to \$1.2 million each year to municipalities (\$120,000 per city) to coordinate activities related to reuse (but not cleanup).
- Michigan uses a Revitalization Revolving Loan Fund that provides \$4 million in loans for cities for site assessment, demolition, and removal activities, with an interest rate of 2.25 percent repayable over fifteen years. The program also allows a five-year deferral of repayment and interest to allow cities to repay loans from tax increments collected by a brownfields redevelopment authority.
- In New York, the Clean Water/Clean Air Bond Act earmarks \$200 million for environmental restoration project grants to investigate or remediate brownfields.
- The Ohio Urban Redevelopment Loan Program makes loans up to \$5 million to municipalities to develop parcels of land in distressed areas.
- Oregon’s Capital Access Program offers loan portfolio insurance for environmental evaluations and brownfields redevelopment projects.
- Wisconsin’s stewardship funds can be used to redevelop brownfields into parks or trails or restore riverfronts or rivers.

For more information see discussion of financial incentives associated with state voluntary cleanup programs in Appendix IV.

As with federal economic development assistance programs, many state efforts were designed, and their rules defined, long before brownfields concerns surfaced. States could support brownfields development simply by recognizing site assessment and remediation needs as legitimate project development activities within the context

of the traditional development programs. Likely program candidates for brownfields treatment are profiled in the following sections.

Voluntary Cleanup Programs

Many states’ brownfields initiatives are tied to their voluntary cleanup programs (VCPs). Most states are seeing steady increases in the number of sites going through their VCPs. Under a VCP, private parties that voluntarily agree to clean up a contaminated site are offered some protection from future state enforcement action at the site. Such protection is often in the form of “no further action” letters or “certificates of completion” from the state. Although such state commitments do not affect EPA’s enforcement authority, the agency has been working with states and its regional offices to develop Superfund memoranda of agreement (SMOAs). The SMOA guidance recommends that EPA regional offices use language to honor state VCPs. For example, although nothing in an MOA constitutes a release from liability under applicable Federal law, generally EPA does not anticipate taking removal or remedial action at sites involved in this voluntary cleanup program unless EPA determines that there may be an imminent and substantial endangerment to public health, welfare, or the environment.

Each state’s VCP is unique and requires various levels of commitment for participation in the program.

For more information and a summary of each state’s VCP see Appendix IV.

Enterprise Zones

More than thirty states currently administer their own enterprise zone programs to spur investment and job creation in distressed areas. Operating independent of the new federal initiative, most of these programs were launched in the mid-1980s, prior to the emergence of the brownfields issue. States have designated more than 1,400 zone areas. Although programs vary in their particulars, several common incentives can be found in most state programs:

- Tax credits, reductions, or abatements on sales, materials, inventory, and property;
- Job-training help or employer tax credits;

- Loans, loan guarantees, and other types of capital assistance; and
- Management and technical assistance and related services earmarked to the zones.

Many state enterprise zone programs could be used more effectively to encourage brownfields reinvestment. For example, loan and grant programs, as well as tax abatements, could be targeted to brownfields projects. Technical assistance services also could be tailored to brownfields issues, such as site characterizations or liability, and to brownfields users, including manufacturers and developers.

Loan Programs

Nearly every state offers economic development loans either directly or through development agencies, authorities, or corporations. These programs are capitalized from a variety of sources: general appropriations, fee collections, or repayments from previous federal or state project loans. Many states could target some of their resources to the specific financing needs of brownfields.

Most jurisdictions require collateral before issuing a loan so that, if the business defaults, the state does not lose its entire investment. The public or quasi-public agencies making the loans, therefore, are potentially subject to the same type of lender liability that private financiers face. If state programs are to promote brownfields cleanup and reuse more effectively and make capital available to the types of borrowers that private lenders avoid because of environmental concerns, they will have to assume some of this liability. Because of public interest or community concerns, state lending agencies may be in a better position to work with new purchasers or existing owners of contaminated sites to encourage cleanup and stimulate new development activity. For example, state lending agencies could offer more flexible loan terms to sites that have successfully gone through a state voluntary cleanup program.

Given the reluctance of most private lenders' to make loans for brownfields projects, publicly supported loan programs can be pivotal in providing the capital needed to retain or start up businesses in areas suffering from contamination. If states are willing to take some risk, they can use a

direct loan program to provide loans that commercial lenders would often refuse to make. Moreover, given the experiences of several states and cities, the potential risk can be reduced significantly if sound evaluation and project guidance procedures are established.

State loan programs could encourage brownfields development in other ways. Programs could target existing manufacturers or small operators needing only a small amount of money for site characterization or initial cleanup purposes. Many state loan programs offer capital at lower-than-prime rates, addressing a key concern of many prospective site reusers. Some initiatives forgive or defer loan repayments or interest charges if certain thresholds, generally linked to job opportunities, are reached. The typical brownfields project would be tailor-made to meet such an objective. Most existing state loan programs finance long-term fixed assets, such as machinery or buildings. These assets are critical components of many industrial site rehabilitation or business retention efforts.

Several states (along with large cities and multi-jurisdictional authorities in rural areas) provide development capital through revolving loan funds. These pools of funds are typically compiled from several sources. RLFs often are targeted to certain types of companies or borrowers or channeled to certain (usually distressed) areas. Their primary advantage is their flexible and simple design. The basic concept is that the lending entity provides businesses with direct loans, companion loans, or other financial assistance. As loans are repaid, the funds are put back into the RLF to be lent to new borrowers. An RLF pool targeted to brownfields activities, for example, could help finance environmental testing, soil removal, extraction of contaminants, and structural improvements. As the loans are repaid, new brownfields projects could be tackled.

Some loan programs provide help in the form of subordinated or secondary loans. Essentially, these loans serve as companion loans to financing that the company secures from private sources. They lower the amount of capital that private lenders must invest in a single project. Subordinated loans also give the private lender first claim on assets in the event of a default by the borrower.

This claim could help reduce lender concerns about the size of a loan loss or diminished collateral value if a company must cope with unexpected cleanup costs or if foreclosure is precluded because of contamination. In either situation, subordinated or secondary loans could prove valuable in stimulating brownfields project activity.

Loan Guarantees

States offer loan guarantees to minimize various risks that make financial institutions hesitant to lend. Small businesses, start-ups, and new technology ventures that typically are viewed as especially risky are often addressed. Environmental risks are rarely addressed, but they could be the focus of a loan guarantee initiative.

A loan guarantee program makes commercial lenders more likely to offer loans to operations whose fiscal health would ordinarily make them a questionable risk.

Loan guarantees are based on a state's pledge to cover most or all of the outstanding balance of a loan made by a private lending institution in the event that a borrower defaults. For companies, loan guarantees help increase the availability of capital and often reduce the cost of borrowing. For lenders, guarantees lower the fiduciary risks of lending.

A loan guarantee program makes commercial lenders more likely to offer loans to operations whose fiscal health would ordinarily make them a questionable risk. Guarantees serve to lower what bank regulators term the risk ratios; the guarantee strengthens the performance of a bank's loan portfolio in the eyes of regulators because the guaranteed portion of the loan cannot be subject to default or become, in banking lingo, nonperforming. Loan guarantees provide banks with a sought-after backstop. Although they do not solve the problems caused by concerns over liability, they do address the issue of diminished collateral value. Since collateral is much less important for a loan backed by a guarantee, the problem of a

facility's lost market value because of contamination is reduced. Loan guarantees also do not require as much staff expertise as direct loans because the private sector performs most or all of the loan processing, risk assessment, and credit analysis.

Business Development Corporations

Publicly chartered private development banks, usually called business development corporations (BDCs) or development credit corporations, are an important source of investment capital, especially for small companies. Currently, they operate in about thirty states. Although BDCs are administered privately, they are authorized by state law and operate under state rules. Several states, especially those with constitutional restrictions on using public funds to help private business, have chartered BDCs as an alternative to direct loan and loan guarantee programs. To date, though, little BDC financial assistance has been directed to brownfields projects.

BDCs generate most of their capital from private sources, such as banks, insurance companies, and similar institutions, that purchase shares of stock, provide advantageous loans, or extend lines of credit to the corporations. Some of the new BDCs have used state-granted tax incentives to attract individual and business investments. A financial institution often can participate in less risky companion or shared loans as part of a resource package assembled by the BDC to finance a business project.

BDCs make credit available to businesses that cannot secure it from conventional lenders. They tend to be more flexible in their financing guidelines than state agencies. Most financing is directed to small companies that use it for construction activities and working capital. Interest rates are usually above the prime rate, so BDCs do little, if anything, to reduce the cost of capital.

The primary advantage of BDCs is that they can provide money for companies that would otherwise be considered too risky for conventional loans: the typical brownfields project. In theory, BDCs should be less influenced by lender liability concerns than private bankers. Because BDCs are not subject to the same federal or state loan performance regulations as traditional financing

institutions, they may assume greater risks. Often, a conventional lender will refer a marginal prospective borrower to a BDC. Business development corporations also make an attractive partner for conventional lenders to team up with; the BDC is often willing to assume a subordinate position in the financing of a project. Finally, because BDCs typically handle mostly higher-risk loans, they have more experience in working with such projects and can process them more expeditiously than many conventional lending institutions. As such, BDCs could be prime candidates to underwrite brownfields projects. However, some local development officials have observed that BDCs tend to become more conservative lenders, even though they are chartered as risk-taking institutions, because of their need to attract the participation or contributions of banks or stockholders. Local governments and businesses can check their local chamber of commerce, their local bank, or the business departments of local colleges and universities for more information about BDCs and government loans.

Tax Incentives and Credits

Most states are developing their own system of tax incentives and credits to encourage businesses to redevelop brownfields. State and local innovation in developing incentives has provided a way to encourage economic development while meeting environmental goals. While each state has a different set of incentives to match their individual needs, the overwhelming majority are aimed at encouraging private investment.

Many state programs provide tax incentives or credits for investment specifically in distressed areas. For example, Arkansas provides a tax credit if the firm is located in a state enterprise zone, and Ohio provides an income tax credit on cleanup costs for those project involved in redevelopment in economically disadvantaged areas.

Other state programs are linked to job creation. Florida provides a \$2,500 tax “bonus refund” per job created at a remediated site for certain industries. Some state programs provide tax credits only for remediation costs associated with the site, while others provide such credits for the actual redevelopment as well. Maryland’s innovative program provides a tax credit

specifically to offset the increase in property tax that results from remediation.

These tax credits often have a limit of ten to fifteen years, depending on the state, and can be implemented on a sliding scale (e.g., Texas provides a four-year tax abatement that allows 100 percent the first year, then 75 percent, 50 percent, and 25 percent in subsequent years).

Often, small tax abatements can mean the difference between a brownfields and greenfields development. As part of Oklahoma’s program, the Oklahoma Sales Tax Code exempts sales tax on machinery, fuel, chemicals, and equipment used in the brownfields cleanup process. Programs such as these have helped spur brownfields redevelopment and level the playing field for developers.

Structured Brownfield Bonds and Credit Enhancement¹

One of the more innovative financial tools that give brownfields redevelopers access to affordable capital is structured brownfields bonds. These bonds appeal to global market investors by turning nonliquid loans into marketable securities and distribute investment risks (as well as yields) among various classes of bondholders. The bonds thus increase the redeveloper’s borrowing capacity and reduce capital costs.

Structured brownfields bonds are secured by pooling brownfields loans. A government agency, trade association, or investment banker combines debt service payments on the pooled loans and then divides the aggregated cash flow into bonds that distribute environmental and credit risk among borrowers and bondholders. These bonds are divided into multiple classes that disproportionately divide the risk involved with borrowing for a brownfields redevelopment. Junior bondholders would take the first-loss risk of environmental liability or borrower default, and would naturally receive higher interest payments than senior bondholders. It is possible that the state or local government agency that sponsored the structured brownfield bond might wish to retain some of the junior bonds at issuance. The agency could then either hold them until maturity or sell them as the bonds age and risk diminishes when debt payments increase.

Credit enhancement may be used as additional insurance against borrower delinquency. Public credit enhancement allows federal, state, and local agencies to fund more brownfields projects than typical loans or grants. Public credit enhancement may involve guarantee from a state or local government, high debt coverage ratios, or grants from the federal government to fund debt reserves.

A state, county, or local government can provide a “full faith and credit” guarantee to substitute for the credit rating of the person guaranteeing for a pooled loan. Essentially, the government promises to raise taxes if necessary to meet the debt service requirements, which is the strongest security a government can provide for a brownfields bond.

Bond issuers can also increase the debt coverage ratio (the number of times actual annual cash flow from the pooled brownfields loans exceeds the debt service requirements on the structured brownfields bonds) through overcollateralization. Overcollateralization means that more loan debt service is pledged on the bond than is needed to pay the bond principal and interest. This excessive debt coverage increases the debt coverage ratio, which, in general, increases a bond’s rating and lowers its interest costs.

Grants from the federal government can be used to fund debt service reserves. These reserves are used to offset potential interruptions in debt service payments. Although debt service reserves are usually funded through bond proceeds at the time of sale, federal government grants or even tax revenues can be used to increase reserves and make the loan more attractive.

Structured brownfields bonds and credit enhancement are ways to use limited public resources with private capital to give brownfields borrowers a chance to access the capital needed to redevelop contaminated properties.

Local Economic Development Tools

Federal and state resources will be able to meet only a relatively small proportion of financing needs at brownfields sites. Local governments need to consider using their own resources to

support brownfields reuse. These resources could help with site characterization and cleanup costs, development costs, or both types of activities.

Recognizing that competing public needs and objectives, as well as limits to public resources, are facts of life in every community, local officials should consider two approaches to promoting brownfields financing. First, they should identify and set aside public funding sources that can be mostly self-sustaining, stable over time, and relatively isolated from changing political tides. Given the inherent limits of public funding, some type of cost recovery is essential to the sustainability of such programs targeted to brownfields. Against this backdrop, local programs, as they evolve and become more established, can enhance their own flexibility by offering forgivable loans, recoverable grants, lengthy repayment terms, recovery upon property transfer, and similar conditions.

Momentum for brownfields cleanup and reuse, and justification for public sector involvement in it, can be created and maintained with visible successes, even at small sites.

Second, public resources should be marshaled in the context of an explicit, strategic brownfields approach. Generally, local officials should give sites with greater development potential priority for financial assistance. In many cities and towns, this strategy may mean supporting several smaller sites in a declining area rather than the one big abandoned plant that has come to signify brownfields to the community. Momentum for brownfields cleanup and reuse, and justification for public sector involvement in it, can be created and maintained with visible successes, even at small sites. Moreover, smaller brownfields projects are more manageable and often more significant in terms of real benefits than a single large, more contaminated site.

In addition, cities can explore other low- or no-cost techniques to stimulate the flow of capital to promising brownfields redevelopment under-

takings. For example, jurisdictions could adopt creative approaches to convey tax-delinquent properties to new owners with viable reuse plans. They also could modify zoning requirements in specific cases to provide developers with the opportunity to earn a greater return on their investment and offset more site preparation costs.

Local governments may set up new loan, grant, or other programs to meet brownfields needs, such as developing a revolving loan fund program (or using EPA's Brownfields Cleanup Revolving Loan Fund program). They may also give existing economic development programs a brownfields focus. Several traditional economic development tools that could be used to support brownfields development are described in the following sections.

The key to tax increment financing is the local commitment of incremental tax resources for the payment of redevelopment costs.

Tax Increment Financing

The tax increment financing (TIF) mechanism, available in nearly all states and employed in some states for almost half a century, has been used for many types of economic revitalization efforts, usually in economically distressed or abandoned areas. The TIF process uses the anticipated growth in property taxes generated by a development project to raise public sector capital. TIFs are built on the concept that new value will be created and that future value can be used to finance part of the activities needed now to increase value. TIFs do not lower the amount of tax revenues collected, nor do they impose special assessments on the project area. Bonds are issued to raise the capital needed for the redevelopment, and the new tax revenues generated by the projects are earmarked to redeem the bonds. The key to tax incremental financing is the local commitment of incremental tax resources for the payment of redevelopment costs.

States provide the authority for local governments to pursue TIF financing, laying out the basic ground rules that communities must follow.

Enabling legislation varies from state to state, but there are several common requirements. First, a local government or redevelopment agency establishes a TIF authority to define an appropriate redevelopment district. Local assessors then freeze property values in the designated district to establish the revenue base. This base is in effect for a specific length of time, often ten to twenty-five years. Generally, TIF authorities must prepare a redevelopment plan that lays out proposed projects, their costs, and a timetable for activities.

Many state statutes empower the locally designated urban renewal agency or redevelopment authority to issue TIF bonds for projects approved by local governments. Most states give sponsoring local governments a variety of other tools to design and carry out a TIF plan. In many cases, TIF agencies derive powers of eminent domain from their host cities. They can also enter into negotiations and contracts with private developers and improve sites. Nearly all redevelopment activities must be preceded by a determination or declaration that certain areas are blighted and in need of revitalization. Most states limit TIF projects to distressed or blighted areas. A few states have articulated specific project activities. Alaska, for example, limits TIF activity to earthquake-damaged areas.

The bonds are issued for the specific purpose of redevelopment: acquiring and preparing the site; upgrading utilities, streets, or parking facilities; and carrying out other necessary site improvements. This limitation makes these bonds an ideal financing tool for brownfields projects, and many cities with brownfields success stories helped bring them about with TIF financing. TIF programs are easily used with other types of funding, such as grants or loans.

From a local official's standpoint, an important feature of most TIF bonds is that they usually do not constitute a full faith and credit pledge on the part of the issuing jurisdiction, but only a promise that new tax revenues flowing in from increased property values will go toward bond redemption instead of into local coffers. However, some jurisdictions are hesitant to use TIFs because retiring the bonds can be difficult if projected development fails to materialize or an area's growth is unexpectedly sluggish. Some local economic

development practitioners also cite the complexity of TIF initiatives as a practical disadvantage. High levels of technical expertise and negotiating savvy can be required to move a project from concept to implementation, especially one made more difficult by environmental concerns.

A hypothetical example will show how a TIF works in practice and why it could be valuable for brownfields initiatives. State TIF legislation allows a city to declare an old industrial district near the downtown area to be deteriorated and in need of revitalization. The city then focuses on a run-down, largely abandoned ten-acre parcel within the district that currently has an assessed tax value of \$4.5 million. The cumulative city, county, and school district tax rate of \$3.25 per \$100 assessed valuation produces an annual property tax revenue of \$146,250. Redevelopment plans call for construction of a mixed-use, light industrial and commercial center on the tract, with an estimated value of \$50 million. The city, in defining this area, is allowed to freeze the valuation for general tax purposes at \$4.5 million, or its value before redevelopment. The \$146,250 continues to be distributed to the varying taxing bodies in proportion to each one's share of total tax collection for the prior, frozen assessment.

However, tax revenues from the \$45.5 million increase in property value are earmarked to pay the costs of land acquisition, preparation, and construction of any physical infrastructure needed to support the new uses. Under the TIF system, the growing amount of the increment reflecting increased property value, up to \$1,478,750 (or 3.25 percent of the \$45.5 million in increased value once the project is completed), is available for repaying the principal and interest costs on bonds issued to support the redevelopment costs. If this state authorizes TIF districts for twenty years, a common time frame, nearly \$22.2 million can be used for redevelopment over the life of the TIF district (assuming a 50 percent completion and occupancy rate during the first ten years, and 100 percent during the second ten years). When the bonds are paid off, the incremental value is added to the regular tax rolls and distributed accordingly.

Minnesota recently adopted a new TIF option, known as the hazardous waste subdistrict, which was designed to meet the financing needs of brownfields areas. Under Minnesota's plan, properties in the subdistricts can be valued down to zero for TIF valuation purposes. This strategy recognizes the practical effect of contamination and allows more revenue to be raised for site preparation and redevelopment purposes because the tax increment will be greater.

Tax Abatements

Tax abatements are reductions in or forgiveness from tax liabilities that are granted for a specified period of time. Abatements are most commonly given for property taxes, but they also are granted for sales, inventory, and equipment taxes. Tax abatements are commonly used to stimulate investments in building improvements or new construction in areas where property taxes or other conditions discourage private investment.

States usually must grant local governments the authority to offer tax abatement programs. Most state legislation designates only certain areas as eligible to participate, such as economically distressed communities or deteriorating neighborhoods. Abatements can be tied to specific industries or activities, company size, or sales volume. Some states abate taxes on certain types of machinery and equipment, such as assembly-line components or pollution-control devices.

Tax abatements are among the oldest economic development incentives and those most often derided as "giveaways" by their detractors. They can take several forms: freezing the assessed value of land or buildings at some point in time (often at a preimprovement date), reducing the tax rate for a certain period of time (typically, five or ten years), and exempting certain types of property from taxes altogether. Some abatement programs feature sliding scales. Full abatements are granted initially, when business cash needs are the greatest, and the level of abatement is reduced (and the amount of tax owed is increased) over time until the firm pays its normal levy. Other programs link tax payments to business income or profitability. Frequently, the percentage of abatement is tied to performance in areas such as

increasing job opportunities or investing within the jurisdiction.

Tax abatement incentives are generally better suited for physical, “bricks and mortar” development projects than job-generating activities. If used alone, tax abatements would be useful only for reuse projects where cash flow is a problem. They would not help brownfields owners who need up-front money to carry out cleanup activities and make needed site improvements. Many small companies need greater financial help than reduced tax liabilities.

Tax abatement programs must be carefully designed to target intended beneficiaries without offering unnecessary subsidies, a feat often difficult to accomplish. Therefore, tax abatement programs have numerous critics. But criticisms notwithstanding, the key advantage of tax abatements is that they give local governments a workable, flexible incentive that helps influence private investment decisions. That flexibility can be important in efforts to promote brownfields reuse.

Special Service Areas or Taxing Districts

Cities can use a “special service area” designation as a way to raise cash to finance extra services, improvements, or facilities that will benefit the targeted area. Projects commonly include security, storefront rehabilitation, advertising and promotion, and business retention or attraction efforts. Some communities have used this tool to finance infrastructure upgrades at industrial parks. Property owners in a defined brownfields area could use this approach to raise funds to cover cleanup costs.

The concept of a special service area is very similar to a TIF. In a special service area, property owners in the proposed district agree that a real estate levy or special fee will be imposed in the defined area that will benefit from the proposed services or activities. The jurisdiction uses this additional revenue to finance the improvements, either earmarking it directly for the area or using it to issue bonds to fund area projects.

For example, Minnesota gives the Metropolitan Planning Council in the seven-county Twin Cities area its own taxing authority, which the council is now using to raise revenues for a

brownfields cleanup initiative. The levy generates about \$6.5 million each year to be used for brownfields grants and loans.

General Obligation Bonds

Virtually any community can issue general obligation bonds for a variety of public purposes. Economic development practitioners can make a strong case that a bond pool to support brownfields cleanup and redevelopment projects could create jobs and enhance the local tax base, which are appropriate public purposes. Cities traditionally issue these bonds for acquiring land, preparing sites, and making infrastructure improvements, key elements in a brownfields redevelopment strategy. As more brownfields are brought back to productive use, the city’s ability to repay this bond debt would be enhanced by the growth in property tax revenues. Cities ranging from Chicago, Illinois, to Bridgeport, Connecticut, have used general obligation bonds to support some aspect of their community’s brownfields redevelopment strategies.

Federal Revolving Loan Funds

Revolving loan funds are simple ideas that are gaining popularity in use for brownfields cleanup and redevelopment, at least conceptually. In spite of the straightforward idea of the loans, implementation can be complicated and labor intensive, depending on the requirements of the authorizing institution. In short, RLFs use a pot of money to make loans that facilitate environmental cleanup of brownfields. The loans are made at low interest rates, and the interest and repayment circulates back into the pot of money, enabling the managing organization to make more loans with the repaid monies—hence revolving loans. This continued use of funds is the single greatest advantage of an RLF. Since the loans require, and in fact the fund depends upon, repayment, RLFs are not good candidates for use in greenway or open-space projects, because they depend on economic activity to generate the funds to repay the loan.

RLF’s are important for brownfields cleanup processes because banks often will not make loans for the cleanup of sites because they do not want to held liable if the borrower is not able to fully repay the loan and the bank has to foreclose on the contaminated property. This situation is called a

potential loss of collateral. RLFs allow a local government or managing agency to make the loan. In event of nonpayment, the lender would not necessarily be liable for the property, but it would lose the proceeds of the loan. Given this scenario, revolving loan funds are more likely accessed by current property owners who want to clean up a site for their own reuses or for potential sale. The logic in using the RLF is that the value of the property will be increased through its cleanup. In this situation, a loan from a bank is not needed because the property is not being bought or sold prior to the cleanup. In this scenario, the loan could be used for a cleanup if a property owner is entering in to a state VCP. RLFs would be particularly useful for small businesses and developers that would not otherwise have the resources to finance a cleanup effort, which might cost about \$50,000. RLFs are probably not as attractive to larger scale developers because such developers would likely already have resources to fund a cleanup.

There are a number of different kinds of RLFs, classified according to their funding

sources. The most preferred is a capitalized RLF in which the original funding source is recycled and remains the funding source for subsequent loans. The entity managing the RLF does not have to pay back the capital. Capitalization can happen in a number of ways: through private sector contributions, through appropriation in state or federal legislation, or through grants from state or federal agencies such as the U.S. Environmental Protection Agency or the Economic Development Administration.

Another type of revolving loan fund gets its original monies from soft loans. Soft loans are made at below-market-rate interest. In this case, the managing entity doing the loaning. This situation is not ideal because the original loan has to be paid back.

The third type of RLF is a debt capital fund. This funding is acquired through regular market-rate loans or bonds. Because of the increased cost to operate and repay the fund, this option is the least attractive for financing an RLF.²

EPA's RLF Overview

Revolving loan funds have been developed and used by local, regional, state, and federal jurisdictions. In regard to brownfields, EPA's Brownfields Cleanup Revolving Loan Fund (BCRLF), has been the most visible.

Revolving loan funds were popularly used for environmental cleanup in 1987, when EPA offered capitalized funds to state environmental agencies to establish RLFs under the Clean Water Act. The revolving loan fund, matched by 20 percent from states, was used to finance remediation of water sources. The model was copied in 1996 in the reauthorization of the Safe Drinking Water Act. Loans from these funds are used to make improvements to potable water systems throughout the country.³ These loans can be used in brownfields that involve the remediation of water systems.

EPA's BCRLF has not met the success of its sibling programs. It was established in 1997, when twenty-three jurisdictions were approved to receive pilot grants of \$350,000. In 1999, forty-five additional pilots, eligible for \$500,000, were announced. Since the sixty-eight approvals have been made, two loans had been granted as of January 2000. The complexity of the BCRLF process may be a factor in the lack of actual loans made. To be eligible for the BCRLF, applicants must have been awarded brownfields assessment pilots. EPA has produced guidance documents and RLF use manuals for the jurisdictions to better understand the nature and management of the grants.⁴ After application to the program and notification of eligibility to receive the award, jurisdictions must turn in a comprehensive work plan that includes a detailed description of the work to be performed by the borrower, a schedule of milestones, additional budget information, community relations information, health safety information, and quality assurance plans and appropriate certification form. This information must be submitted before every loan from the local jurisdiction to a property owner.

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EPA's BCRLF Process

The process of getting BCRLF funds is itself labor intensive and involves two sorts of risk management: technical risk and financial risk management. EPA has many requirements to ensure the funds are used properly and that appropriate environmental cleanup occurs. A BCRLF recipient must supervise the cleanup, determine that cleanup activities are authorized by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and make sure that the cleanup meets appropriate federal and state cleanup laws. The recipient is ultimately responsible and potentially liable for the environmental remediation. If the local jurisdictional office that receives the award is not an environmental office (for example, an economic development or a community planning office), the ultimate responsibility for environmental outcomes would likely exceed the purview of that office's expertise, further complicating the administration of the loan. The recipient can enlist the services of other agencies to carry out responsibilities. All of these procedural aspects make the revolving loan fund time-consuming to administer on the local level. Furthermore, only 15 percent of the total funds can be used to administer the loan. That amount would likely not cover the expenses of all the various aspects of administration (work plan development, assessment, environmental approval, and fiscal agency) over several loans as one RLF would require. However, local governments can partner with other agencies that may already be supervising the cleanup of a site to administer that aspect of the revolving loan fund.

For example, the City of Portland, Oregon, is looking into partnering with the Oregon Department of Environmental Quality (ODEQ) or the U.S. Army Corp of Engineers (USACE) to manage the environmental aspects of a site cleanup. ODEQ is already involved in many brownfields projects in Portland because they are entered into the state's VCP. Likewise, USACE is working on many brownfields sites that involve river and water issues. In this way, the effect on the outside agencies would not be as great because they are already supervising environmental aspects of projects.

EPA's BCRLF has some stipulations about who may receive a revolving loan. Of course, the loan recipient must have appropriate credit and cannot be under an enforcement action. Loan funds are for cleanup only and cannot be used for any assessment or redevelopment activities. Funds may not be used for cleanup at sites with petroleum contamination, unless the petroleum is commingled with other hazardous substances. Loans cannot be made to a party that is or has generated or transported contamination. This last stipulation may be the most telling reason why many jurisdictions have not employed BCRLFs. It disqualifies current property owners who have owned businesses (such as auto repair shops or dry cleaners) from using the loan to clean up their properties for potential sale or reuse. With this requirement, even property owners who enter a state voluntary cleanup program would not be eligible to access the loan to improve their property under the conditions of the VCP and contribute to improving a neighborhood. In many cities, the parties that would most likely take advantage of an RLF are those that are potentially responsible for the contamination but are trying to clean it up in order to expand their business on the property or to sell their property altogether, making way for redevelopment.

A potential property owner who has negotiated a prospective purchaser agreement (PPA) with the state could apply for a BCRLF loan. In this manner, a potential purchaser would negotiate and agree to certain levels of cleanup with the local or state environmental agencies in return for a promise of no further action on enforcement. A PPA often goes hand in hand with enrollment in state voluntary cleanup programs. Banks or other lenders of property loans often require a PPA when there is known contamination on the site.

Stamford, Connecticut: The First Brownfields Cleanup Revolving Loan

The first Brownfields Cleanup Revolving Loan was awarded in Stamford, Connecticut, to help clean up the Stamford Harbor waterfront property. The \$250,000 was awarded to the Southfield Associates LLC, through its managing member Clearview Investment Management, Inc., which will use the money to restore the harbor area to a major economic and recreational resource. The Stamford Community Development Office will be responsible for ensuring that environmental cleanups are done in compliance with all applicable laws and regulations. EPA selected the City of Stamford for a brownfields redevelopment assessment pilot in 1998 and selected the city for a BCRLF in September 1999. Under the BCRLF program, EPA provided the city of Stamford with \$500,000 to capitalize its revolving loan fund. The city uses the money to provide loans to public and private parties for the purposes of cleaning up brownfields sites in the city.

Brownfields RLFs at the Local Level

Many cities and counties are developing their own revolving loan funds with requirements that match their particular needs. Local governments have had mixed responses to RLFs. Some are hesitant to administer an RLF program because they are

ultimately liable for any contamination that might remain on the site. When a city gives a loan to clean a site, it is responsible for seeing that the site is adequately cleaned. The City of Baltimore, Maryland, and Cuyahoga County, Ohio, have each developed an effective brownfields loan fund.

Turning Federal Grants into Local Loan Programs: Baltimore, Maryland

The City of Baltimore used \$3 million of its HUD Empowerment Zone award to develop the Empower Baltimore Brownfields Loan and Grant Program. The program, administered by a private consulting firm, created a capitalized fund used for grants and loans in 1997.

Of the money, \$500,000 is used for the grant program, which is very specific in its purpose. Awardees can use grant dollars to assist in Phase II environmental assessments. The grant amount can cover 50 percent or up to \$25,000 of the total cost, whichever is less. To date, only one grant has been made, but another is pending. When asked why more grants have not been made, the fund manager said that he mentions the program to loan applicants, but they are usually so happy with the loans that they do not apply for the grants.

The loan program offers low-market, predevelopment loans to assist borrowers in overcoming the costs of any of the following: acquiring property, environmental assessments, area planning, environmental remediation, demolition of buildings, and environmental insurance premiums. In eighteen months, the program has made five loans, totaling just under \$1 million, with five more potential loans in the pipeline. The loans average about \$150,000, and the largest was \$340,000. The loans are made in leverage with other capital so that the loan covers between 10 percent and 50 percent of the total project costs. To date, the \$1 million in loans has leveraged just under \$6 million of investment in Baltimore. The loans are made at below-market rates of between 4 percent and 6 percent annual percentage rates on variable terms between two and five years. Program officials do not prohibit any sort of contamination when considering eligibility for the loans and the grants. Hence, including petroleum contamination, which is excluded from any EPA brownfields work, is allowed. Baltimore does not make loans to any parties under enforcement actions, but it will lend money to a property owner seeking to clean up contamination that he or she has caused, as long as the contaminating activity has stopped.

To date, the most successful and visible project has been Lancaster Square, near Fells Point in the city's arts district. This project remediated and developed 50,000 square feet that had been contaminated with building materials, including PCPs and asbestos, into mixed-use retail and residential properties. The project created approximately 100 jobs.

Leveraging Local Funds to Establish Loan Programs: Cuyahoga County, Ohio⁵

In late 1998, Cuyahoga County, Ohio, home to Cleveland, established the Brownfields Redevelopment Fund (BRF), a revolving loan fund for property remediation. The fund is specifically aimed at the first-ring suburbs that surround Cleveland. These towns need job creation and site redevelopment. The program was established with three principles in mind:

- Simple financing and ease of use of the program;
- Expedient availability of funds for identified brownfields projects; and
- Eligibility of private property owners for funds.

The BRF's efforts at capitalization for the fund involved a collaboration among the county, the state, local governments, private financial institutions, and the area's philanthropic community. The county successfully raised \$15 million in taxable bonds. An investor loan group pledged \$5 million. Two state agencies (the Ohio Environmental Protection Agency and the Water Development Authority) gave priority to BRF projects. The county is also negotiating with Ohio-based foundations for further contributions.

Private property owners, nonprofit community development corporations, businesses, local jurisdictions, and the county itself are all eligible applicants. The eligibility of private and public entities increases the breadth of appeal of the program. The Cuyahoga County Board of Commissioners must approve all loans made through the program to ensure a system of checks because the applicants can be public entities. Applicants and prospective purchasers must have completed a Phase I environmental assessment and be willing to enter into Ohio's voluntary cleanup program, Voluntary Action Program (VAP), and must receive a "no further action" letter. All properties receiving a BRF are to be used for industrial, commercial, research, or distribution purposes.

Sites with commercial and industrial uses are the primary focus of the BRF, reinforcing the job creation and job retention goals of the city. Housing developments and sites with no previous development activity are ineligible for the BRF. Current and former municipal solid waste sites and gas stations not a part of comprehensive redevelopment projects are ineligible.

A BRF can be used for any of the following activities: obtaining appraisals, acquiring property, demolishing property, environmental testing, remediating and paying costs that are part of the VAP. Private property owners can obtain three-year loans of up to \$1 million. These loans require leveraging or significant equity. Public property owners are eligible for fifteen-year loans up to \$1 million. Jurisdictions must back the loans with nontax revenues, such as potential site sales. The BRF can also subsidize between 20 percent and 45 percent of the loan principal for projects that are under distress or that have suffered a net loss between redevelopment and land sale.

6.3

Private Financing

While public support for brownfields redevelopment can encourage investment and reuse, the private sector controls the fate of most brownfield sites. Although lender concerns continue to hinder brownfields reuse, more and more lenders are coming to recognize the

economic potential of brownfields and that environmental risks can be better determined, enough so that these projects can be undertaken. In October 1996, Congress clarified many of the lender liability issues associated with brownfields with the Asset Conservation, Lender Liability, and Deposit Insurance Protection Act of 1996. While this law did not address all the issues, and many banks (especially smaller ones) have been very slow to accept its clarifications, the law has begun to sway many

While public support for brownfields redevelopment can encourage investment and reuse, the private sector controls the fate of most brownfield sites.

private institutions toward encouraging brownfields redevelopment.

Still, it is important to note that activities such as site assessment and cleanup rarely pass underwriting muster on their own, and private financing for brownfields activities is very difficult to secure. Economic development practitioners must understand the guidance and direction that bank regulators have provided to the lenders they regulate. These policies affect lenders' actions as they consider the effects on their own financial situation. Prospective borrowers will feel the effects of these regulatory concerns when they pay higher transaction costs or endure exhaustive site assessments and testing.

The Lender Perspective on Liability

Reluctant lending can affect the reuse potential of specific sites, as well as the broader economic development climate in many areas. Lenders, although naturally risk averse, are changing the way that they deal with projects that even remotely involve hazardous wastes and pose the possibility of environmental liability.

Effect of Lender Concerns on Brownfields Redevelopment

This section describes for local practitioners the full range of barriers that they might encounter when working with lenders on brownfields projects, as well as the lenders' rationale behind these concerns. However, it is important to emphasize that these barriers can be overcome and projects can go forward—environmental difficulties can be addressed in a way that makes economic sense. As the case studies in this guidebook illustrate, many brownfields sites offer their own competitive advantages: they can be

cleaned up and reused, and the numbers can work. Early success stories include the following:

- National West Bank helped finance a Trenton, New Jersey, mixed-use residential/industrial project. The bank's knowledge of the credibility of the local developer and city officials, and state participation in the form of an allocation of low-income housing tax credits, made the bank comfortable enough to participate in a brownfields project that has led to the retention of a longtime local manufacturer as well as created seventy-five new housing units downtown.
- A consortium of banks provided \$195 million to finance a major expansion of a leading biotechnology firm in Emeryville, California, onto adjoining brownfields properties. When completed, the project will create 3,000 new jobs and generate \$290 million in additional property taxes.

As explained in the following sections, financial institutions grappling with concerns over environmental liability and contaminated project sites have

- Curtailed their level of lending;
- Begun to charge more for the capital—sometimes as much as two percentage points on the interest rate, according to some bankers;
- Cut off financing for certain types of businesses, such as small enterprises or businesses that routinely handle toxic substances, (e.g., dry cleaners or auto-body shops);
- Increased transaction costs by requiring a thorough environmental assessment and necessary cleanup as conditions of loan approval; and
- Imposed restrictions on or limited their interaction with borrowers to reduce their exposure to liability.

Collectively, these practices can significantly limit an owner's ability to redevelop the property and can make these brownfields less attractive compared to pristine sites in the outlying areas.

Reduced Lending to Projects Perceived as Environmental Risks

From the lender's perspective, possible liability for significant damages has increased the risk of doing business. In many areas, lenders have gone beyond cautiously considering contaminated site reuse projects and closed the financial spigot. It is only reopening slowly as the reality of the risks involved become better understood. Many financial institutions are simply unwilling to provide any financing to some types of businesses unless the precise scope of a lender's liability is clarified, if not reduced. Throughout the country, but particularly in the old "rust belt" cities, bankers convey horror stories about brownfields reuse projects gone awry for environmental reasons and "deep pocket" former owners called to task years, or decades, after they sold their properties.

Brownlining: Shunning Certain Project Types

Lenders and developers may simply avoid doing business with certain types of companies or properties that carry environmental risks. Some development experts describe this lender reticence as "environmental redlining." Many bankers, in fact, have started to tally categories of undesirable borrowers, including tool and die shops, bottling and canning plants, high-technology metal fabricators, semiconductor facilities, and utilities. Ironically, local governments and economic development organizations have targeted many of these same industries for special attention and incentives because they are seen as key to community economic growth and diversification.

The size and financial resources of the current owner influence a site's marketability and reuse potential. Prospective purchasers, for example, may buy old industrial property only from large, thriving corporations that can afford necessary site remediation. Then, if EPA sues for cleanup costs, the new owner has a chance to pursue the seller successfully to recover remediation costs (or EPA may go after the seller itself). Likewise, lenders wanting to avoid defaults associated with expensive cleanups may limit their loan activity to large companies with considerable assets. Small enterprises, especially startups or expansion projects, usually use land and

buildings, their chief assets, as loan collateral. Since the loan may not be made if the land or buildings are of questionable value, this scenario could stifle many budding enterprises.

If cleanup is needed, the transaction is further disrupted. Even a low-cost cleanup can take months to complete; complex efforts may take years. Old industrial sites can present special cleanup challenges because few records may be available on past uses, and contamination has had time to spread or is deeply buried. Numerous developers have recounted how such unwelcome surprises wrought havoc with the financial projections of a project already under way.

The high failure rate among small businesses makes this type of lending especially risky and puts even greater pressure on the collateral aspect of the loan agreement. Furthermore, the lender must often work with and counsel the borrower, who, as an entrepreneur and not an accountant, frequently has little expertise in financial management. A few bankers have significantly scaled back such relationships with their borrowers because, until recently, there was a potential that the bankers could be held liable for cleanup costs. To address this issue, Congress provided relief by enacting the Asset Conservation, Lenders Liability, and Deposit Insurance Protection Act of 1996. This encouraging change may eventually bring more lenders to the brownfields financing table.

Increased Transaction Costs

As previously noted, Superfund gives prospective owners an incentive to evaluate sites before purchasing them to determine the owners' potential liability for existing contamination. Lenders increasingly require extensive environmental testing and cleanup, not only to protect themselves from liability but also to ensure the value of the collateral. Some states have adopted their own environmental assessment requirements. But these assessments are time-consuming and expensive, significantly boosting project transaction costs. Some test bores of the ground, for example, run \$15,000 or more. An assessment of a longtime industrial site detailed enough to satisfy a prospective lender can cost \$50,000 or more. In many cases, the tab for an environmental investigation and the delays involved in carrying out evalua-

tions alter the balance sheet of the proposed deal, undermining its financial viability.

Concerns about contamination have unleashed a flood of related paperwork. Bank officials have noted that since the issue of environmental risk emerged about seven years ago, loan officers must work through entire sections of loan documents devoted to nothing but environmental considerations. This paperwork increases the time and cost of assembling and processing loan packages by as much as threefold, according to some officials. Small businesses are particularly hard hit by these up-front investigative fees, which can make small loans prohibitively expensive to obtain.

In addressing contamination at a specific site, the developer must deal with local, state, and federal environmental agencies to ensure the adequacy of cleanup strategies. These agencies may disagree or may have different procedures and paperwork, unnecessarily complicating and delaying cleanup and redevelopment. Then, any contamination removed from the site must be taken to an appropriate treatment or disposal facility, often located hundreds of miles away. Some cities and states, in fact, are having difficulties locating a dump site that will accept the heavily contaminated debris from industrial reuse projects. Moreover, the party liable for the waste, be it a developer, a banker, or the local government that may have assumed title to a site, is still liable for the waste even after it has been taken to the dump.

Such procedures are fraught with delays and hassles. They are costly and may force otherwise viable projects to be abandoned. However a few developers have met with success by working closely with appropriate environmental agencies or by soliciting the help of the governor's office to expedite the cleanup process.

Restricting and Complicating Involvement with Borrowers

Real estate lenders manage their portfolios in a variety of ways. Some mainly originate and hold loans, while others originate loans and then place them with investors in the secondary market. Some mortgage bankers do not even close loans in their own name; instead they match real estate

projects to investors. Others act on behalf of insurance companies, pension funds, and other institutional buyers. Some lenders also take participatory interests in real estate, especially commercial projects, and are considered to be both owners and lenders.

The possibility of site contamination, and potential CERCLA liability, has changed the way large real estate lenders do business. For example, real estate financiers are increasingly demanding indemnification from sellers for any preexisting contamination. These agreements have been useful in allocating responsibilities and cleanup costs, as well as in closing deals. According to legal experts, these agreements generally address issues such as the following:

- Determining cleanup expenses and costs of fines, third-party claims, and loss of profits;
- Determining what costs are reasonable;
- Defining how clean is "clean" for purposes of allocating costs;
- Determining the consequences to a party that fails to adhere to the agreement;
- Determining the length of time the indemnity will last and what would happen in the event of the sale or the merger of one the participants;
- Assigning the burden of proof in determining when the contamination took place; and
- Limiting potential liability and cleanup costs.

However, such agreements usually take a long time to negotiate and involve a number of technicians and lawyers, making them expensive to conclude. Because of this expense, indemnification agreements generally are not viable for small business operators. In addition, even the best-crafted agreements are ultimately worth little if a key participating company goes bankrupt. Moreover, no such agreements will ever be reached on many old industrial sites where the title is held by the corporate remnants of defunct companies.

Liability Concerns and Lender Practices

Liability concerns have an important effect on the brownfields redevelopment process. When

undertaking a project, developers, investors, and companies want to quantify their risk as quickly as possible. The fear of surprises related to contamination has led to changes in financing practices. Given the uncertainty stemming from several judicial rulings, lenders and investors have grown wary of brownfields site reuse projects that may place them in a position of owning or operating a contaminated site. While new legislative changes may soften these concerns, many still fear that their activities in monitoring or salvaging their investments will put them in the “chain of title” and make them potentially liable for cleanup costs. Therefore, it is important to examine these situations closely.

The fear of liability not only impedes the approval of redevelopment loans, but also discourages lenders and investors from offering creative financial assistance that would prevent current industrial operations from becoming abandoned brownfields sites. Liability concerns also inhibit lenders from offering the types of technical assistance, financial advice, and creative loan restructuring alternatives that could help save a troubled firm. Economic development practitioners and private companies need to recognize that lenders often view the various types of involvement outlined as follows, which could work to the benefit of everyone involved with brownfields reuse, as posing an unacceptable risk of liability.

Loan Work-Outs

A loan work-out is a situation in which the lender seeks to actively help a borrower grapple with a financial or management crisis to keep the company from defaulting on its loan. In the case of brownfields projects, judicial rulings linking a lender’s management activities to liability have inhibited the use of work-outs. Increasingly, lenders refuse to use a work-out altogether, resorting instead to an early exit, pulling the plug on the project to cut their losses. But more importantly from an economic development standpoint, the inability to engage in a work-out discourages lenders from making many loans in the first place. In their view, if they cannot implement a work-out scenario, some other exit strategy must be defined. In the case of a brownfields property, the potential

for liability thwarts possible exit alternatives and often eliminates consideration of the site.

Foreclosure

As lenders assess the practical effect of the 1996 change in lender liability law, they may no longer view foreclosure as the great risk it once was. However, many lenders are still concerned that an immediate cleanup of the site may be required, which they as the new owner must carry out before the property is marketed. As a result, a prospective borrower faces tremendous pressure to identify acceptable alternative collateral, a requirement that many owners or prospective reusers of most brownfields sites simply cannot meet.

Button-Up

Even if a lending institution chooses not to foreclose, it faces potential costs in a “button-up” situation. In such cases, a defaulting borrower may leave the bank with the considerable expenses necessary to close down an operating facility (e.g., removing chemicals from storage tanks and process piping, hiring security for the facility). Clearly, the prospect of significant button-up costs can deter lending on industrial projects or brownfields reuse activities. These expenses can be avoided if a lender successfully intervenes and structures a work-out that avoids a financial crisis for the company.

Collateral

Lenders typically are much more comfortable if a prospective industrial borrower can pledge nonreal property, such as inventory or equipment, as collateral. In some cases, though, courts have considered the act of choosing inventory or equipment to acquire and liquidate to collect on collateral to be involvement in management and operations.

Trusts

Trusts can be sources of equity for brownfields redevelopment, but trustees, like any investor, can find themselves liable as owners. Therefore, a situation in which a lender or investor acts through a trust also is discouraged by the liability risk of managerial involvement.

6.4

Banking Policies and Regulations

The potential adverse effect of environmental contamination on a site or facility's collateral value and the potential for liability under CERCLA and other laws, no matter how remote, have become important factors for lenders as they assess real estate transactions and decide whether to make loans for project activities. Lenders also may feel constrained in brownfields lending because of concerns over how their regulators may view loans for environmentally risky projects. In fact, regulating agencies are concerned about the potential effect of environmental contamination on the overall loan portfolio of the lending institutions they oversee. The Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, the Federal Reserve Bank system, and the Office of Thrift Supervision all have issued guidelines for environmental risk and urged lenders to develop their own policies and procedures, within these guidelines, to address environmental concerns. In each case, the regulators suggest that environmental risks be evaluated as part of the cost of carrying out the banking business.

Economic development practitioners must therefore understand the guidance and direction that bank regulators have provided to the lenders they regulate. These policies affect lenders' actions as they consider the effects on their own financial situation of possible collateral devaluation or the inherited environmental responsibilities of nonperforming loans. Prospective borrowers will feel the effects of these regulatory concerns when they pay higher transaction costs or endure exhaustive site assessments and testing. The following section assesses these regulatory agency guidelines.

Federal Deposit Insurance Corporation

On February 25, 1993, the Federal Deposit Insurance Corporation (FDIC) outlined various procedures for banks to follow to identify and evaluate potential concerns when establishing an environmental risk program. The agency left no doubt as to its view of the importance of putting a respon-

sible program in place, emphasizing that "examiners will review an institution's environmental risk program as part of the examination of its lending and investment activities. . . . Failure to establish or comply with an appropriate environmental program will be criticized and corrective action required."⁶

FDIC officials noted that the environmental risk program should be tailored to the practices of the financial institution. In other words, lenders with a higher concentration of loans to environmentally high-risk industries or brownfields locations with known contamination likely will require a more sophisticated and elaborate program than those whose lending practices focus more on commercial or residential projects in greenfields locations. Lenders should consider the following eight issues when crafting their risk program: staff training, policies, environmental risk analysis, structured environmental risk assessment, loan documentation, monitoring, involvement in the borrower's operations, and foreclosure.

Staff Training

FDIC-covered lenders must offer sufficient staff training to ensure that the environmental risk program is successfully implemented. Loan underwriters and other appropriate personnel must be provided with the training they need to make sure they can determine and evaluate potential environmental concerns that might affect the redemption of the loan and the lending institution itself. When environmental circumstances become too complex for the staff to adequately evaluate, they must consult with the outside experts they need to make reasonable decisions.

Policies

The institution's loan policies, manuals, and written guidance to staff should address environmental issues affecting specific lending activities. For example, the loan manual that staff follow might identify the types of environmental risks commonly associated with certain types of industries or former manufacturing sites typically found in the lender's normal service territory. Loan policies also could provide guidelines for

underwriters to follow when conducting their analysis of potential environmental liability. FDIC also suggests that similar procedures might be developed for credit monitoring, loan work-out situations, and foreclosures.

Environmental Risk Analysis

Lenders must establish a procedure under which they carry out an initial environmental risk analysis during the loan application process. In FDIC's view, this procedure will help the institution minimize potential liability and avoid making loans that go sour because of contamination-related problems. Loan officers can gather much of the information needed for this analysis through discussions with the loan applicant. They might also visit the site to see if obvious contamination problems exist. In addition, loan applications can be modified to request pertinent environmental information, such as the present or past uses of the property and the company's prior cleanup activities or pollution prevention efforts.

Structured Environmental Risk Assessment

FDIC urges lenders to carry out a detailed investigation whenever the loan application, discussions with the borrower, or a site visit indicate a possible environmental problem. This so-called "structured assessment" might include the following activities:

- Determining the identity of past owners and their uses of the property;
- Inspecting the sites more closely, including contiguous parcels (which might contain contaminants that could spread);
- Reviewing company records for past use or disposal of hazardous materials;
- Contacting federal and state agencies to determine whether the borrower has been cited for violations of environmental laws or regulations; and
- Reviewing State and Federal lists, such as the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), that tally sites with potentially significant environmental contamination.

Loan Documentation

According to FDIC, loan documents should include language to safeguard the lender against potential environmental losses and liabilities. Depending on the nature of the borrower and the loan, financial institutions can demand that the borrower comply with all environmental laws; disclose information about the "environmental status" of the site, facility, or equipment being used as collateral; and give the lender the right to gather more information through inspections about the potential for contamination. The loan documents also could include provisions that give the lender the right to call the loan, not extend funds under a line of credit, or foreclose if the collateral is discovered to be contaminated. In light of this guidance, a growing number of lenders insist that they be indemnified by the borrower and any guarantors against liability associated with the collateral.

Monitoring

FDIC also states that borrowers should be monitored during the life of the loan, because ongoing environmental risk assessments are important to ascertaining that the property used as collateral remains uncontaminated and retains its value. The lender, moreover, should be aware of changes in business activities carried out at the site that might increase the risk of environmental liability. The FDIC also suggests that if a situation arises where the potential for environmental contamination could undermine the property's value, the lender should consider exercising its rights under the loan agreement to require the borrower to resolve the problem and take whatever actions are necessary to protect the property's value.

Involvement in the Borrower's Operations

The lender must scrutinize its own actions as it monitors loans for potential environmental problems, and it must direct borrowers to take actions to resolve such concerns. FDIC points out, however, that such actions that a lender carries out or contemplates could constitute "participating in the management" of the business being financed and thus trigger CERCLA liability.⁷

Foreclosure

Exposure to liability can increase significantly if a lender takes title to the site or facility being held as collateral. FDIC urges institutions to evaluate carefully the potential environmental costs and the liability potential associated with the property when deciding whether to take title by foreclosure or other means.

Federal Reserve Banks

The Federal Reserve's Division of Banking Supervision and Regulation issued a memorandum in late 1991 laying out its views on environmental liability.⁸ That document, which still serves as agency policy, recommends policies and procedures for banks to follow:

- Prepare environmental policy statements and provide training to ensure that staff are familiar with the provisions;
- Establish guidelines and procedures for dealing with new borrowers who want to use real property as collateral;
- Carry out appropriate analyses of potential environmental liabilities;
- Review existing loans to determine those with potential environmental problems;
- Develop a tracking system to document due diligence and efforts made at the time loans are made or property is acquired; and
- Include warranties, representations, and indemnifications in loan agreements as protection from losses because of environmental contamination.

The Federal Reserve emphasized that “safety and soundness” are its key concerns. Accordingly, its policy notes that lenders must strive to limit their environmental liabilities by adopting protective policies, including vigorous analysis of their existing portfolios, which are based on the types of properties involved and their uses. As the Federal Reserve's 1991 memo notes, banks must take the initiative to protect themselves because CERCLA provides little guidance in interpreting its secured creditor exemption, which would shield lenders from liability. In practice, this new scrutiny is often the reason that longtime indus-

trial borrowers are suddenly denied credit when they seek the same type of working capital loan that they have secured many times before.

Within the Federal Reserve system, guidance provided to bank examiners has two objectives: to determine if a bank's environmental risk safeguards and controls are adequate and to identify any potential environmental problems with either a bank's loan portfolio or its nonlending activities. The Federal Reserve's 1991 memo suggests that banks should minimize the potential environmental problems from nonlending activities, including trusts and mergers and acquisitions. Examiners are instructed to determine whether the bank has complied with Federal Reserve policies concerning environmental risk.

Typically, examiners look for evidence that basic Phase I environmental audits have been carried out at all financed sites with a “higher than normal” risk, no matter what the loan size. As the Federal Reserve explains, the size of the loan may bear very little resemblance to the size of potential environmental liabilities associated with the property. Examiners also expect lenders to identify potential hazards in their loan portfolios, such as gas stations, plating facilities, feedlots, or trucking firms that may haul waste products.

Economic development practitioners and companies also need to be aware of the Federal Reserve's perspective on warranties and indemnifications. The Federal Reserve encourages banks to include them in their loan agreements, but notes that, at best, such provisions provide limited protection for lenders. Warranties and indemnifications are not binding against the government or third parties and are only as good as the financial strength of the borrower. Banks, according to the Federal Reserve, should never view such covenants as a substitute for environmental reviews and assessments. Thus, prospective borrowers will not be able to avoid possibly expensive site testing with promises of future indemnification.

Finally, the Federal Reserve's 1991 memo, with more detail than FDIC guidelines, discusses lender activities that could be construed as participation in the management of a borrower's business. It recommends that bank staff avoid

serving on a borrower's board of directors, participating in board decisions, or determining changes in company management. Given this recommendation, the Federal Reserve warns that banks should be careful to consider their plans in the course of loan work-outs or debt restructurings.

Office of Thrift Supervision

The Office of Thrift Supervision (OTS) policy bulletin on environmental risk and liability, issued in early 1989, was prescient for its time. It lays out in considerable detail the policy guidance that OTS, a bureau of the U.S. Department of the Treasury, still follows, including "basic categories of risk" to lenders that could emerge from transactions involving environmentally contaminated property.⁹ As lenders have recognized these categories in their own underwriting procedures, the categories have had a major effect on the availability of development finance for brownfields projects. The categories include the following:

- Reduced value of collateral;
- Inability of borrowers to repay loans if they also must cover site cleanup costs;
- Preemption of a mortgage loan security by a cleanup lien imposed under so-called super lien laws in some states;
- Potential for the bank to become liable for the cost of site cleanup in the event of a foreclosure or to not foreclose in the face of significant cleanup costs; and
- Possibility that the borrower would not maintain the facility financed in an environmentally sound manner.

Finally, OTS guidance stipulates that the loan officer should make sure that a Phase I environmental assessment is performed at the site, that the financial institution is the primary client for the report, and that the Phase I assessment is carried out by an auditor included on an approved roster maintained by the lender.

Office of the Comptroller of the Currency

The Office of the Comptroller of the Currency's (OCC's) two-page Banking Bulletin 92-38, issued in July 1992, essentially advises banks to follow the protective procedures laid out in EPA's June

1991 Lender Liability Rule, which subsequently was invalidated by the courts for procedural reasons. EPA developed the rule to clarify the scope of existing liability exceptions and to make it easier for lenders to demonstrate that they are simply holding property as loan security and therefore are exempt from cleanup costs. The guidelines laid out a range of activities, including foreclosure, that lenders could undertake without fear of liability to manage and protect facilities that serve as collateral. EPA also attempted to clarify the circumstances in which a financial institution would be considered to be "participating in management" of contaminated property,¹⁰ a contentious issue clouded by court rulings. EPA proposed that lenders be able to offer financial and technical assistance or counseling to borrowers and to insist that financed properties be maintained in an environmentally sound manner. Lenders, according to EPA, also could undertake refinancing or loan work-out activities.

The OCC bulletin notes, "To avoid environmental liability [banks] should assure themselves that their policies, practices, and procedures are consistent with the definitions contained in the final rule."¹¹

Community Reinvestment Act

The Community Reinvestment Act, enacted in 1977, requires that banks attempt to invest in and provide for the credit needs of their local communities. Addressing issues of geographic and racial discrimination in lending policies, the Community Reinvestment Act was intended to aid credit-starved neighborhoods, often located in economically declining urban areas or remote rural areas. Communities have the opportunity to use the Community Reinvestment Act as an economic development tool because the act allows them to monitor local bank performance in providing the credit necessary to maintain existing businesses and residential neighborhoods and to attract new commercial enterprises. Some community development advocates estimate that the Community Reinvestment Act prompts more than \$4 billion in lending each year.

The four agencies that monitor financial institutions oversee the act, with OCC serving as lead regulator. Those agencies track lenders'

activities to ascertain the credit needs of the lenders' service areas, as well as their participation and investment in local development or revitalization projects or programs. Regulators also may evaluate lenders' participation in government insured, guaranteed, or subsidized loan programs for small businesses or housing. Some community groups and development organizations have used the Community Reinvestment Act to leverage investment capital for local development projects. They also have used it to open serious negotiations with banks on specific projects that require private loans.

In the past few years, many local economic development advocates have suggested that brownfields projects increasingly are the target of environmental discrimination in lending policies and decisions. On May 4, 1995, OCC issued revised Community Reinvestment Act guidelines that, for the first time, included a brownfields-related provision. The guidelines suggest that financial institutions can meet their Community Reinvestment Act obligations through loans to clean up and revitalize brownfields. In a brief footnote, the rules cite as an example "loans to finance environmental cleanup or redevelopment of an industrial site as part of an effort to revitalize the low- or moderate-income community in which the property is located."¹² To qualify for Community Reinvestment Act credit, bank-assisted projects must lead to redevelopment activities, as well as simply remove contamination. The Community Reinvestment Act footnote also encourages banks to participate in EPA's brownfields initiative.

6.5

Environmental Insurance

Environmental insurance is a tool used to limit a property owner's liability for contamination. It is one of the newest and most underused tools of environmental risk management. Environmental insurance can be purchased by an individual property owner, by a consortium of owners whose

properties are together and share contamination, or by an outside entity, such as a local government, that wants to attract potential developers of property, like the sort that exists in an industrial district. In the last case, the insurance is an economic incentive to attract investors and stimulate brownfields redevelopment. According to Peter Meyer and Kenneth Chilton of the University of Louisville, "the main value of environmental insurance is risk quantification; it is a tool for limiting the financial unknowns which are recognized as serious impediments to investment. Yet, environmental insurance remains underutilized by the public sector."¹³

There are five types of environmental insurance:

- Professional liability insurance covers mistakes made by parties involved in property cleanup and decontamination issues. Such insurance would include coverage if a firm conducting assessments declared certain contamination and, in the cleanup process, other types of contamination were discovered.
- Owner/operator liability coverage for parties actually working on a site, either conducting business or environmental remediation. Such parties could include the site owner, cleanup companies, assessment firms, or other individuals, such as public officials involved in the cleanup or transaction of the property. There are two types of coverage in this category: one is for demonstrable health damage from contaminant exposure, and the other is for economic damage for the inability to use a site or for a reduced property value.
- Legal defense coverage for regulatory or enforcement lawsuits made either by enforcement agencies or injured parties.
- Cleanup cost cap or stop-loss coverage limits the costs of cleanup that redevelopers have to pay. This coverage is critical in circumstances with a higher likelihood of unforeseen costs. This type of environmental insurance has the highest base rate for coverage.

- Regulatory action coverage for costs associated with future government actions that require additional cleanup, including cost associated with loss of use of improvements.

Local governments and communities can engage with environmental insurance in a number of ways. On the one hand, they can simply inform potential developers and other private sector interests about the availability of the insurance. On the other hand, local governments can buy environmental insurance for a plot of land where they know that suspected or known contamination is a large barrier to the property's redevelopment. Local governments can also buy a policy called pooled insurance for a group of small plots of land. Environmental insurance purchased by a municipality can provide an incentive for developers to buy property because their liability is reduced. Municipalities can also buy insurance for undeveloped plots of land and charge developers all or part of the costs of the insurance in propor-

tion to the amount of property that they have. In that case, the municipality is working more as a facilitator than as a provider.

Over the past ten years, as environmental insurance policies have developed and become more flexible and less expensive, insurance policies have begun to mix combinations of coverage. Other recent changes in environmental insurance include longer terms for policies. Previously, coverage was limited from three to five years. Now coverage extends for up to ten years.

In spite of the advantages of environmental insurance, it is a tool and should be used appropriately according to the redevelopment effort. Redevelopers should consider professional liability coverage even as early as site selection of brownfields. In site remediation, third-party liability and stop-loss protection coverage should be used. During the rehabilitation and new construction stage of the brownfields development, owner/operator liability coverage should be

The New Jersey Environmental Risk Management Fund

The New Jersey Environmental Risk Management Fund was set up to deal with the special problems of brownfields. The effort was undertaken by an alliance of 199 small cities throughout New Jersey to provide coverage for a range of environmental liability exposures and related costs in urban redevelopment. The cities joined together to create the Environmental Joint Insurance Fund (EJIF) to provide themselves with coverage for a range of environmental liability exposures and related costs, some of which contribute to facilitation of urban redevelopment. EJIF covers a population of about 2 million and includes municipalities with as many as 60,000 residents.

The current program covers four major classes of risk:

- Environmental liabilities related to current municipal operations;
- Liabilities related to hazardous materials accidents that damage potable drinking water systems and stormwater runoffs systems;
- Site-specific coverage for illegal dumping by unknown parties on municipal property, including costs for emergency cleanups, if needed, and municipal contributions to abandoned waste disposal facilities that have been classified as Superfund sites; and
- Public officials' liability for actions excluded from standard municipal liability coverage.

The fund also includes engineering consultations to assure compliance with state and federal regulatory requirements for covered operations.

Source: Meyer, Peter B., and Kenneth M. Chilton. *Environmental Insurance for Brownfields Redevelopment: A Feasibility Study*. U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 1997.

employed to protect professionals working on the project. The owner/operator coverage should be continued during the operation of the redeveloped site and for potential refinancing or resale of the property.

Barriers to Use

Because environmental insurance is still a new product and is not yet widely used, companies have not developed widespread specialty products or marketed to special sectors, such as local communities. Rather, most insurance marketing has been aimed at the private sector. Consequently, many local government professionals are uninformed about environmental insurance or believe that its costs are prohibitive. Targeted marketing could change perceptions that environmental insurance is too expensive for local communities to undertake. Such marketing might help local government see the opportunities that environmental insurance would provide.

Another complicating factor for local governments wishing to purchase environmental insurance is the administrative process involved. In general, local governments have property and casualty insurance that is purchased centrally through their purchasing or risk management department, which often do not have experience in environmental matters. Likewise, urban rede-

velopment offices usually have no experience in buying insurance or liability protection. Given these shortcomings, it is easy to understand why environmental insurance can fall through the cracks of economic development incentives. Insurance and other services are often purchased through a bidding system. For this reason, these deals take longer to close than private deals would.

Innovative Plans in Somerville, Massachusetts

Somerville, Massachusetts, a close-in suburb of Boston, has developed its own interesting environmental insurance plan. In this plan, the private sector buyer and seller of each site would work out the cost estimates and details of financing the actual cleanup, after which the city would provide up to \$100,000 to cover any unexpected cost overruns on each cleanup. The city uses its HUD CDBG funds and its EPA brownfields pilot funds, loan repayments, and interest escrowed to provide the pool to cover the potential cost overruns. The city is limiting the type of sites eligible for the program.

Source: Meyer, Peter B., and Kenneth M. Chilton. *Environmental Insurance for Brownfields Redevelopment: A Feasibility Study*. U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 1997.

Questions to Consider About Environmental Insurance

- What is the value of publicly financed insurance to developers and to banks? What is the cost-effectiveness of this insurance relative to other economic incentives?
- Is environmental insurance less expensive for clients who are enrolled in a state's voluntary cleanup program?
- Does environmental insurance make it easier to get loans from banks?
- How much can an insurance pool generated by a city reduce the costs of different insurance coverage for individual parcels by spreading risk and reducing the need for site-specific underwriting? How do those costs vary according to the characteristics of the pool?
- What is the value of municipally owned environmental insurance coverage to developers compared to other, more direct financial subsidies?
- What reworking of municipal purchasing processes is necessary to improve the ability of local government to purchase environmental insurance?

6.6

Conclusion

Financing is the most critical aspect of brownfields redevelopment. In most communities—wealthy or impoverished, rural or urban—financial concerns underlie the gamut of issues surrounding infill development. Regardless of the specific interests of landowners, developers, lending institutions, or the public, funding measures are typically the answer. Thus, the most convincing form of support for brownfields redevelopment comes through financing incentives and liability assurances. While great strides have been made in recent years to encourage federal, state, and local governments, as well as private lending institutions, to provide funding to brownfields projects, there is still room for expansion.

Along the same lines—and as demonstrated before—communities must aggressively pursue and creatively leverage funding, as well as tailor redevelopment initiatives, to accommodate financing measures wherever they may apply. Communities that have been able to do so—and effectively draw upon community resources such as land-use strategies, public and private partnerships, and citizens’ hopes and desires—have attained success in turning around their blighted brownfields and reinventing their local economies. Although many success stories have been mentioned throughout this guidebook, Chapter 7: Strategies and Best Practices, illustrates a number of innovative communities and the challenges they faced and triumphs they achieved in brownfields redevelopment.

¹This section is based on information from Scott Resnicks’s “Structured Brownfield Bonds and Credit Enhancement” in *Financing Brownfield Reuse* (Washington, DC: Northeast-Midwest Institute, 1999).

²William, J Penn., and Joseph Karabots, “Establishing a Sustainable Source to Finance Brownfield Remediation,” *Financing Brownfields Reuse*, Charles Bartsch, ed., (Washington, DC: Northeast-Midwest Institute, 1999, p. 33).

³Ibid, p. 34.

⁴For detailed information about EPA’s Brownfields Cleanup Revolving Loan Fund, see *Brownfields Cleanup Revolving Loan Fund Administrative Manual* (EPA 500-B-98-001) and *Proposal Guidelines for Brownfields Cleanup Revolving Loan Fund Demonstration Pilots* (EPA 500-F-99-001).

⁵This section is based on information from the Cuyahoga County Planning Commission’s “Local Brownfield Financing Initiatives: Cuyahoga County’s Brownfields Redevelopment Fund,” *Financing Brownfields Reuse*, Charles Bartsch, ed., (Washington, DC: Northeast-Midwest Institute, 1999, p. 51).

⁶FDIC Financial Institution Letter (FIL-14-93), February 25, 1993.

⁷Ibid.

⁸The Federal Reserve Board, Supervision and Regulation Letter #SR 91-20 (FIS), “Environmental Liability,” October 11, 1991.

⁹Office of Thrift Supervision, “Thrift Bulletin: Environmental Risk and Liability,” Section 210 TB 16, February 6, 1989.

¹⁰Office of the Comptroller of the Currency, “Banking Bulletin,” #92-38, July 1992.

¹¹Ibid.

¹²*Federal Register*, May 4, 1995 (60 FR 22156)

¹³Peter B. Meyer and Kenneth M. Chilton, *Environmental Insurance for Brownfields Redevelopment: A Feasibility Study*. (Washington, DC: The Department of Housing and Urban Development, Policy Development and Research, 1997). Much of the section on environmental insurance was based on this article.

STRATEGIES AND BEST PRACTICES



7.1

Overview

Sharing the experiences of different brownfields programs can provide an invaluable resource to other communities. Although every community faces its own set of goals, objectives, and challenges, the exchange of information among peers can provide guidance and insight on how to overcome obstacles, enhance program services, or adopt a new approach to brownfields redevelopment. This chapter is intended as a resource for communities to learn from each other through a sampling of different program ideas, approaches to common challenges, innovative strategies, and lessons learned. Topics covered include the following:

- 7.2 University Partnerships
- 7.3 Local Government Intracoordination
- 7.4 Regional Approaches and City and County Partnerships
- 7.5 Public-Private Partnerships
- 7.6 Brownfields Redevelopment to Attract Industry and Jobs
- 7.7 The U.S. Environmental Protection Agency Brownfields Showcase Communities
- 7.8 Conclusion

7.2

University Partnerships

Fostering partnerships with academic institutions can provide a community or a local government

Tapping into local academic institutions could be especially helpful in smaller communities and for brownfields programs with small staffs.

with resources that it may not have access to otherwise. Using university students as interns or for technical assistance can benefit the local government, the student, and the university. Students receive hands-on, tangible work experience, and the local government receives services that it may not have the time or resources to undertake. Partnerships also open the door for dialogue between the local government and the university.

Graduate Student Assistance in Shenandoah, Virginia

In Shenandoah, Virginia (population of 2,300), the town council in the spring of 1997 approached the Office of Sponsored Research and Outreach of James Madison University (JMU) for technical assistance in economic development. The town of Shenandoah and JMU created an internship program that would provide the town with a graduate student from the university's Department of Public Administration. The town hires a graduate intern for one year and pays the intern's JMU tuition in addition to a stipend. Not only is this arrangement more affordable for the town than hiring a full-time staff person, but it also provides the town with access to the university for resources, program support, and a steady pool of qualified internship candidates.

The graduate intern works with the town to identify and prioritize needs; build partnerships with local, state, and federal government agencies; and pursue grant opportunities. With the assistance of a JMU graduate intern, the town was awarded a \$200,000 U.S. Environmental Protection Agency (EPA) Brownfields Pilot grant in July 1998 for the assessment of a former iron and coke facility that the community wanted to redevelop into a park. A JMU graduate intern also succeeded in securing a \$72,000 Transportation Equity Act for the 21st Century (TEA-21) grant for streetscape improvements to Shenandoah's downtown commercial district.

The JMU and town of Shenandoah partnership to create a graduate internship program provided the town with the experience and additional resources to find tools and programs for reaching community economic and redevelopment goals. With the success of this program, the town and university are working to expand their partnership by exploring ways to incorporate the scientific capabilities of JMU's College of Integrated Science and Technology to meet the town's need for Phase I and II environmental assessments.

Source: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, *Brownfields Assessment Demonstration Pilot Quick Reference Sheet: Shenandoah, Virginia*. EPA-500-F-98-187. (July 1998).

Available at: <http://www.epa.gov/swerosps/bf/html-doc/shendoah.htm>.

Establishing these lines of communication could also lead to other opportunities for collaboration, including university staff lending their expertise to a local project. While communities and brownfields programs of all sizes could benefit from the extra sets of hands that a university can provide through internship or technical assistance programs, tapping into local academic institutions could be especially helpful in smaller communities and for brownfields programs with small staffs.

7.3

Local Government Intracoordination

Coordination among local government offices and agencies can be the key to highly successful strategies that approach redevelopment from numerous perspectives. Often, a local government can sequester resources from any number of

agencies, including housing, economic development, public works, public health, and transportation, to be put to use on a brownfields site.

Philadelphia's one-stop, up-front development services committee has proven to be a successful tool for coordinating local brownfields redevelopment efforts. Development services committee meetings bring city staff members and developers to the table at one time. Developers are able to meet and establish a direct and personal point of contact with each of the departments that they will be working with.

These meetings are efficient for both the city and the developers because they eliminate the need to attend numerous meetings. Having a direct point of contact also assures that developers are working with the most appropriate city staff member, thereby helping both parties to overcome obstacles expeditiously. Providing an opportunity where developers and city representatives can meet face-to-face also fosters a working relationship between the public and private sectors.

Intracoordination: The Recipe for Success in Philadelphia, Pennsylvania

The Philadelphia City Planning Commission (PCPC), Philadelphia Industrial Development Corporation (PIDC), Redevelopment Authority (RDA), and Commerce Department are the four local government agencies facilitating and streamlining the development process. The PCPC is the primary department overseeing brownfields redevelopment in the city. It works closely with all the involved agencies to coordinate activities. The PCPC is an independent commission with the responsibility to ensure compliance of the National Environmental Protection Act and related regulations. It has managed the environmental aspects of development projects for the past twenty-five years, and it provides a one-stop contact for grant approval of environmental remediation, land-use planning, and (if applicable) subdivision within the same time line. The PIDC offers developers of office, industrial, and commercial projects financial guidance and assistance, and the RDA works on the redevelopment of housing and commercial projects. The Commerce Department rounds out the redevelopment services of its brownfields agency partners by marketing sites.

The PCPC provides one-stop review for environmental approval and development plans, and provides developers with initial information on the city's development process. After this initial contact with the city, developers can meet with the other city departments at a biweekly meeting of the PIDC's development services committee. Developers of all major proposed developments arrange for these meetings at the start of their projects to initiate the review of their development plans and meet representatives of all the relevant local agencies including permitting, public and private utilities, finance, inspections, and licensing.

Source: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. *EPA Brownfields Pilot—Philadelphia, PA, Quick Reference Fact Sheet*. EPA 500-F-97-063. (May 1997).

Available at <http://www.epa.gov/swerosps/bf/html-doc/philadel.htm>.

7.4

Regional Approaches and City and County Partnerships

Communities of all sizes may coordinate, collaborate, or form partnerships among themselves or with the county. Some communities, especially those that are small, will partner with other small communities to pool resources or share common obstacles and strategies. Some local governments or communities find success in organizing and coordinating their efforts through an independent association or nongovernmental organization (NGO). A county may take the lead in brownfields redevelopment for a local government or a cluster of local governments that do not have the staff,

money, or other resources to manage an independent brownfields program or project. As the lead agency in a brownfields program, a county may be able to more effectively plan, advance, or execute a regional initiative such as economic development or “smart growth.”

Outreach and communication between the county, local government, and the community are essential components of this partnership. When a county takes the lead in a brownfields redevelopment project, it should keep local governments—and especially elected officials—informed of and active in what is being done in their neighborhood. The brownfields redevelopment process can be confusing at times, particularly if it is a new program to the city or county; to maintain support for the program, it is important that all stakeholders understand the process and their role in the project.

Sharing Resources in Antrim County, Michigan

In situations where a local government or a cluster of local governments simply does not have the staff to manage a brownfields program on its own, the county may initiate brownfields redevelopment projects in conjunction with the local government. In Antrim County, Michigan, the Office of the County Coordinator/Planner is creating a Brownfields Redevelopment Authority to undertake one redevelopment project for three small jurisdictions: Mancelona Township (population of 3,173), Custer Township (population of 630), and the Village of Mancelona (population of 1,370). These three jurisdictions share the same groundwater contamination problem, as well as the problem of the limited capacity of each small local government staff to independently address the issue. However, in partnering with each other and the county, they can work toward a goal that they would have been unable to accomplish alone.

Antrim County's Office of the County Coordinator/Planner will staff the Brownfields Redevelopment Authority, oversee its work, and report its efforts to the county commissioners. The county will also hire two additional staff members for the authority: a project engineer to do the work and a project administrator to track the progress of the engineer and handle paperwork, public meetings, and outreach. The County Coordinator/Planner will oversee the project administrator. Though the chain of command may seem cumbersome, having clearly defined jobs, oversight, and reporting responsibilities are essential for keeping the busy but small staff of the Office of the County Coordinator/Planner working efficiently.

Monthly meetings of the Mancelona Brownfields Action Team are the primary vehicle for coordination and communication between the county, local governments, and residents of the community. The meeting venue rotates between each of the three communities and the county, providing citizens from each jurisdiction with the opportunity to participate in a meeting in their hometown throughout the year. Local, state, and regional federal agencies such as EPA and other site stakeholders are invited and regularly attend the Mancelona Brownfields Action Team meetings. These meetings are intended to keep all the stakeholders informed on the progress of projects and to provide a forum for discussions on how to better coordinate efforts.

Source: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, *Brownfields Assessment Demonstration Pilot Quick Reference Sheet: Antrim County, Michigan*. EPA-500-F-99-003. (March 1999).

Available at <http://www.epa.gov/swerosps/bf/html-doc/antrim.htm>.

Bucks County, Pennsylvania: A Regional Approach

Counties may coordinate efforts so that they may take a more consolidated regional approach to brownfields redevelopment. In Pennsylvania, the Bucks County Redevelopment Authority (RDA) started its regional brownfields program by honing in on three state-designated enterprise zone communities that shared similar challenges and goals to use brownfields redevelopment as a strategy for regional economic development. By creating a partnership among the individual municipalities, the county is hoping to revitalize three square miles of vacant or underused facilities that were once part of an active manufacturing and industrial base. Businesses looking to locate in the county have avoided brownfields despite the large, high-quality workforce and the established transportation network in the region. Bucks County's multijurisdictional approach is a measure to control urban decay and sprawl, while attracting businesses that may otherwise have developed at a greenfields for fear of suspected contamination at older, abandoned sites.

The Bucks County RDA is the lead agency for the program, and it works with a contractor to identify brownfields sites. The RDA works to acquire the sites and perform environmental assessments. Funding for site assessments comes from grants, property owners, and the individual municipalities. Municipalities also participate in the RDA's brownfields program through representation on the Brownfields Task Force. Representatives from the RDA, Enterprise Zones, and local municipalities make up this group, which considers criteria for ranking and prioritizing sites.

The Bucks County RDA's brownfields program yields success through combining the strength and resources of the county with the individual municipalities. Although the program started with three Enterprise Zone communities, its scope has been extended to include three additional Enterprise Zone communities, so that the entire Enterprise Zone is in the area targeted by the RDA for brownfields redevelopment. The direction and action of the county's RDA allows for brownfields redevelopment to take place in a number of small municipalities that may not have had the ability to coordinate or finance brownfields programs on their own. The municipalities' participation strengthens the county program by contributing funds for environmental site assessments and by providing the local perspective in decision making. The local perspective is especially important for Bucks County because of its regional diversity; communities and priorities span the range of urban to rural. Guidance and feedback provided through the Brownfields Task Force helps the RDA meet the needs of its diverse county.

Source: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. *EPA Brownfields Pilot—Bucks County, PA, Quick Reference Fact Sheet*. EPA 500-F-97-125. (April 1997).

Available at <http://www.epa.gov/swerosps/bf/html-doc/bucksco.htm>.

7.5

Public-Private Partnerships

Partnerships between public and private sector entities can result in a symbiotic relationship. Public agencies may lack specific, innovative expertise required to remediate and redevelop

brownfields sites; private corporations typically avoid such sites because of perceived or actual liability and funding pitfalls. Through a negotiated partnership, public and private institutions can work together to combine technical resources; to balance economic incentives and liability assurances that aid each agency; and, more importantly, to work to benefit the community as a whole.

Involving the Private Sector in Provo, Utah

A partnership between the local government of Provo, Utah, and the company U.S. Steel (USX) proved to be a successful tactic in getting 300 acres of vacant property, known as Ironton, back into use. The city worked with USX to negotiate an agreement that resulted in remediation of the site by USX. A provision of the agreement also allows for both the city and USX to recoup costs with the money made through the sale of the land.

For over thirty years, the Ironton site had remained idle while the rest of Provo grew and prospered. As the largest undeveloped parcel in the city, Ironton represented a rare and potentially valuable commodity. So in 1978, the city purchased fifty-eight acres of the site with the intention of building an electric substation and spurring other private development. However, a number of obstacles, including new hazardous waste laws that caused contamination-liability concern among developers, impaired redevelopment plans, and the site laid idle for another decade.

In 1992, the city secured an option to buy approximately half of the Ironton property that it did not already own and initiated contact with the landowner, USX. The city's intentions were to have the site remediated, to recoup costs incurred in site assessment and oversight, and to get the site back on the tax rolls. The city wanted to work with USX to get these goals accomplished and help fund site-related activities, especially site remediation.

Communication between the City of Provo and USX was first initiated with a letter from the mayor to USX. To reinforce the city's resolve, a letter from the governor of Utah followed the mayor's letter. Moreover, a Provo local government representative visited USX headquarters in Pittsburgh, Pennsylvania. These efforts, in conjunction with the city's demonstration of commitment through securing the option to buy the Ironton property, were successful in getting USX to work with the local government on the Ironton site.

However, other factors also supported USX's decision to work with Provo and become involved with Ironton. The Utah Department of Environmental Quality and EPA had been surveying the site as a potential addition to Superfund. The city and USX could possibly avoid federal or state action on the site by negotiating an agreement. An invitation from the local government to negotiate a mutually beneficial deal presented an optimal opportunity.

Local governments seeking to work with a private sector organization should consider a number of issues. First, the local government is not always at a disadvantage when approaching a company with responsibility at a brownfields. USX could have pursued other parties connected with Ironton to take action at the site or contribute financially to the effort. But working directly with the local government to negotiate an agreement was less expensive for USX and more expeditious than having to take legal action against other potentially responsible parties. Local governments willing to facilitate a negotiation can offer a valuable opportunity to a company.

Another important aspect of the deal is the value of the property. If the land will be valuable after cleanup, it is more likely that parties will want to get involved, either to make a profit or simply to recoup costs expended on remediation or preparing the site for sale or redevelopment. In the case of Ironton, the fact that the city and USX would most likely be able to recoup their costs upon sale of the land enhanced the deal. Although economic value is important, so too may be the value of the property to the community. Having a specific use in mind and integrating that use with the needs of the community could also demonstrate a value such as the need for open space or parks. Results of such a redevelopment deal will yield a lasting community benefit, in addition to providing the company with a publicity-friendly project.

“Piercing the corporate veil” is not always easy. Aside from the challenge of finding a willing corporate ear to consider a local government’s offer, planning, organization, and coordination are also important. A local government must clearly indicate its concerns and intentions up front, as well as be consistent and reasonable in its goals, expectations, and decision making. Because the process often involves many players, both on the side of the local government as well as the private sector, coordinating efforts and communication is vital to keeping everyone updated and involved. For the Ironton deal, the brownfields pilot manager served as the point of contact and project manager for Provo, while USX had one person designated as a project manager who would then coordinated with USX’s other technical and legal staff.

Source: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. *EPA Brownfields Pilot—Provo, UT, Quick Reference Fact Sheet*. EPA 500-F-97-067. (May 1997).

Available at <http://www.epa.gov/swerosps/bf/html-doc/provo.htm>.

7.6

Brownfields Redevelopment to Attract Industry and Jobs

A number of communities have remediated, retrofitted, and redeveloped existing brownfields

industrial sites to pave the way for corporations that may have previously looked beyond or abroad to establish a headquarters. By taking the initial steps to remediate properties—at least to a level suitable for industrial operations—a community can reinvent its entire local economy.

Creating Employment Opportunities in Uniontown, Alabama

The city of Uniontown, Alabama, is using brownfields redevelopment as a tool for local job creation. Uniontown is a small, rural community of approximately 1,730 residents. The economic vitality of the town and its population depended on four factories that were the area’s major employers. The closing of these factories has had a devastating effect on the local economy and quality of life. The unemployment rate is almost twice the national and state average, and the poverty rate is approximately 40 percent.

The city is revitalizing the area by restoring and reusing the existing facilities left idle when factories closed. One facility in particular is the King Pharr vegetable-canning factory complex. The factory lay abandoned for several years after it closed down its operations in 1974. For a brief period, the property had been used for storing “carbon black,” a substance used in cement and coloring products. Although carbon black is a non-hazardous substance, its presence fed the perception that the property was contaminated.

The local government has purchased the King Pharr factory site and plans to spearhead redevelopment to override the perceived contamination issue, which has been hindering private development at the site. The city anticipates that private investment in the project will improve, and that much-needed jobs should follow, once the site is no longer considered a brownfields.

Source: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, *Brownfields Assessment Demonstration Pilot Quick Reference Sheet: Uniontown, Alabama*. EPA-500-F-98-190. (July 1998).

Available at <http://www.epa.gov/swerosps/bf/html-doc/uniontown.htm>.

Proactive Local Government Strategies in Shreveport, Louisiana

Built in the 1960s, the HICA Steel Castings, LLC, (HICA) foundry was a significant economic force in Shreveport for many years. However, a change in market conditions in the 1990s caused operations at HICA to decline, and eventually the foundry was shut down in 1996. The poverty rate for the surrounding neighborhoods reached as high as 75 percent. The area was designated a state enterprise zone, and though a proposal emerged to try to reopen a portion of the site, the fear of environmental contamination liability was a significant obstacle for prospective purchasers.

The local government decided to explore brownfields redevelopment resources as a way to spur activity on the HICA property while facilitating job creation. The city applied for and was awarded an EPA pilot grant of \$200,000. Funds from this grant enabled a prospective purchaser to have an environmental assessment performed on the property. The city used an additional \$200,000 in HUD Community Development Block Grant funds and a local bank provided a \$620,000 loan to renovate and redevelop the site, with the intention of bringing other HICA operations into the city.

Though the city was very innovative and successful in its strategy and role, conditions for other stakeholders were not as favorable. Unfortunately, HICA ceased all business operations because of market- and competition-related issues. Therefore, the plan for the upgraded and renovated HICA facility, which was projected to employ up to 250 people, has not met its original goal. However, the property is now remediated, redeveloped, and ready for another company that is looking for a place to set up business; essentially, HICA is a success story waiting to happen. Although the plans for the HICA facility fell short of expectations because forces beyond the control of the local government, the success or quality of the city's efforts is not diminished. Its experience demonstrates how a local government can be strategic and proactive in using brownfields redevelopment in meeting community needs such as job creation.

Source: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, *Brownfields Success Stories: Intervention Equals Prevention in Shreveport*. (August 4, 1998).

Available at http://www.epa.gov/swerosps/bf/html-doc/ss_shrev.htm.

7.7

The U.S. Environmental Protection Agency Brownfields Showcase Communities

On March 17, 1998, sixteen communities were named EPA Brownfields Showcase Communities, models of innovative programs in environmental cleanup and economic revitalization. The Brownfields Showcase Communities program has the following three main goals:

- To promote environmental protection, economic redevelopment, and community revitalization through the assessment, cleanup, and sustainable reuse of brownfields;

- To link federal, state, local, and nongovernmental action supporting community efforts to restore and reuse brownfields; and
- To develop national models demonstrating the positive results of public and private collaboration addressing brownfields challenges.

A partnership of more than fifteen federal agencies, known as Federal Partners, have pledged support to the Brownfields Showcase Communities and are providing financial and technical assistance resources to help the communities meet their goals. Each Brownfields Showcase Community program has its own set of unique characteristics, successes, and challenges. The experiences of the Brownfields Showcase Communities can offer insight to other communities looking for strategies in brownfields redevelopment.

Baltimore, Maryland

Baltimore was one of the three original EPA brownfields pilot communities in 1993. As a Brownfields Showcase Community, it is working to tie brownfields redevelopment into the city's livability agenda and programs, including downtown revitalization, job creation, environmental justice, and neighborhood development. The additional federal funding and access to federal resources is being directed toward making sites more marketable through site assessments and redevelopment since most redevelopment projects are being done by the private sector. To further promote brownfields redevelopment within the private sector, the city published a brochure about brownfields resources for a mass mailing to businesses and developers. The city also studied the track record of lenders and produced a list of brownfields-friendly lenders for developers.

Many of Baltimore's brownfields sites and the related environmental issues are of industrial origin. Warehouses and old factories found at many of the sites are being used for creative rehabilitation and even historic preservation projects. These projects result in non-traditional development where the characteristics of the existing structures are used to create unique office, retail, or residential space.

Chicago, Illinois

In 1993, the Chicago Brownfields Initiative was established by the city's Department of the Environment to link environmental remediation with industrial real estate development. The city takes an active role in the redevelopment process. It acquires and assembles land, conducts cleanups under the state remediation program, and then sells the properties. The Chicago Brownfields Initiative is creating jobs, generating tax revenues, and improving environmental quality.

The city's brownfield efforts are being directed towards acquiring land for the creation of modern, urban industrial parks. As part of Chicago's Brownfields Showcase Community effort, resources will be channeled to four industrial parks, and a citywide Chicago Brownfields Forum will be convened. But aside from direct redevelopment efforts, the Chicago Brownfields

Initiative staff works to promote public policies that encourage private sector development within the city, identifies barriers to redevelopment and offers ideas on how to overcome them, and conducts research with local universities on brownfields-related issues. Areas of research include a cost-benefit analysis of brownfields-versus greenfields-development, the effect of contamination on development, and the correlation of waste sites with historical demographic trends.

Dallas, Texas

The mission of the Dallas Brownfields Program (DBP) is "the economic redevelopment of Dallas real estate with perceived or real environmental contamination." DBP is a resource that assists developers in troubleshooting and overcoming obstacles. It also performs outreach and educational efforts within the community and private sector, functions as a point of contact for developers, acts as a liaison between developers and other city departments, and identifies potential sites for redevelopment.

DBP established the Brownfields Forum to foster a relationship with business community members, so that it could work with stakeholders to meet their needs and educate them on the opportunities in brownfields redevelopment. The Brownfields Forum, which currently includes a core of thirty to forty members, meets every six weeks to discuss different or new brownfields topics, to provide the staff with feedback, and to receive updates on various projects and programs. Representatives from state agencies and the EPA also participate in the forum. While DBP staff members organize the meetings, agenda items are determined collaboratively with forum members. Meetings have included the evaluation of case studies, tours of brownfields sites and projects, guest speakers, and presentations on programs such as tax increment financing districts. A local businessman and forum member who worked with DBP to develop a brownfields sees the forum as an extension of the DBP that "provides developers and businesses with a road map of how to work the brownfields redevelopment process."

East Palo Alto, California

East Palo Alto, California, is a small city, with a population of 23,000 in an area of three square miles. It is also a relatively new city, formally incorporated in 1983. For years, East Palo Alto has been the neglected sibling of the more affluent Silicon Valley and Bay areas, suffering from higher rates of crime and poverty. However, while most of Silicon Valley is built up and filled in, with few opportunities for industries to locate, East Palo Alto is home to one of the last major tracts in the area available for industry, manufacturing, or offices.

The city is using brownfields redevelopment and the resources of the Brownfields Showcase Communities program to develop a 130-acre site known as Ravenswood. The Ravenswood project poses a number of interesting challenges. Because of its mix of existing industrial uses and undeveloped sites together with some residential uses nearby, community participation has been essential to get feedback and comments from citizens. The city embarked on a thorough planning and urban design process to obtain business and citizen input about the site's future. The city convened a stakeholder forum to get community input on possible activities and industries that may be sited at Ravenswood, and it also conducted a special tour for Bay area businesses and banks to generate private sector support and investment interest.

Eastward Ho!, Florida

Eastward Ho!, is a regional initiative that seeks to revitalize and improve the quality of life in Southeast Florida's historic urban areas, lessen development pressure and urban sprawl into the Everglades, and protect the region's future water supply. The initiative focuses its sustainable growth and planning efforts on a 115-mile corridor that extends through five counties, and it includes the participation of a coalition that comprises public, private, and nonprofit organizations. The South Florida Regional Planning Council (SFRPC) manages the Eastward Ho! initiative. SFRPC's objectives include working with the public and private leadership in the South Florida region to achieve a vision of the future and identify regional challenges and opportunities for achieving goals.

Brownfields redevelopment is an important component to the Eastward Ho! initiative because contaminated properties are a significant barrier to infill development and redevelopment. The Eastward Ho! Brownfields Partnership is working to establish a regional inventory of potential brownfields sites, perform site assessments, and undertake rehabilitation and redevelopment projects that feature sustainable reuse of brownfields sites. A distinguishing feature of the partnership is its regional collaboration in these efforts. The program allows for both the public sector and the private sector to contribute their skills, ideas, and resources. In addition, community meetings are held to update stakeholders on the progress and activities of the program, and to collect feedback from the public.

Glen Cove, New York

Glen Cove, New York, is using brownfields remediation and redevelopment as a main component of its goal to reclaim the waterfront district. Although spearheaded by the city's redevelopment agency, the waterfront revitalization plan has been integrated among numerous departments. This cooperative work among departments also gives everyone a stake in the project and allows for many people to lend their talents to the project.

One of the city's innovations is its "Commitment to Action" workshops. The National Oceanic and Atmospheric Administration has funded three of these workshops, which bring together representatives from agencies and stakeholder groups. Workshop participants learn about the city's program, its objectives, and its challenges; they can then determine what resources from their agency or organization can be used to help the city in their brownfields and waterfront redevelopment efforts. Because the city is small and must account for various water resource issues in brownfields redevelopment, it coordinates with state and federal government agencies for resources, funding, and technical assistance. "Commitment to Action" workshops have resulted in a number of partnerships between the city and agencies that have allowed Glen Cove to overcome many barriers to redevelopment.

Kansas City, Kansas and Kansas City, Missouri

The Kansas City Brownfields Showcase Communities program is a joint venture between Kansas City, Kansas, and Kansas City, Missouri, known as the Kansas City Brownfields Initiative. Historically, Kansas City, Kansas, and Kansas City, Missouri, share common characteristics. Both benefited from stockyards, the meatpacking industry, the railroad industry and numerous secondary industries. Whenever a regional industry declined, both cities were affected. Brownfields redevelopment is being used as a tool in the cities' broader regional economic development goals.

The Kansas City Brownfields Initiative is focusing on environmental cleanup, economic development, and community outreach. Careful planning, land reuse, and long-term quality-of-life issues are characteristics that define the program. Although the local governments are working together and with their respective states' administration of brownfields, the program and the majority of resources reside in Missouri, whose city is five times larger than its Kansas counterpart. The majority of funding from the pilot and the Brownfields Showcase Community program is being used to conduct Phase I and II site assessments. A portion of the funds is used for program administration, including personnel, travel, equipment, communications, and other expenses.

Los Angeles, California

Los Angeles' Brownfields Program is organized into interdepartmental teams with the common goal of identifying, coordinating, and targeting resources for the city's brownfields efforts. While the city works to provide incentives for cleanup and remove barriers to redevelopment, it is also active in actual brownfields projects. One project in particular is the revitalization of an active industrial site where the city will be working to improve the site's infrastructure by cleaning up and revamping on adjacent railroad right-of-way.

Los Angeles has become a national leader for its use of HUD Section 108 loan money to support its own Brownfields Revitalization Fund. How the city allocates these loan dollars is a good example of strategic political leadership. The Brownfields

Resource Team also solicited project ideas from each of the fifteen Los Angeles City Council offices as part of an request for proposal process. The city's Brownfields Executive Team then selects brownfields redevelopment project sites from the pool of ideas generated by the council districts. As part of this process, each council office has designated one staff member to act as a liaison to the Brownfields Resource Team. The city's brownfields program also reports regularly to the city council and council committees. All of these processes enhance the sense of ownership in the program and keep the city's elected leadership informed about the latest developments.

Lowell, Massachusetts

For the city of Lowell, brownfields redevelopment is necessary because there is almost no vacant land or greenspace within city limits. Lowell was one of the first U.S. cities to enter the Industrial Revolution, and abandoned textile mills still occupy many square miles of land in Lowell. The city's brownfields program is focused on redevelopment of these industrial facilities and contaminated properties. Lowell's brownfields program is also tailored to incorporate the city's history. Much of Lowell is a National Historic Park or State Industrial Center that depicts the history of industrial New England. Many of the city's brownfields projects involve the renovation of former mills or industrial sites that reflect the history and architecture of the area.

Also noteworthy is the city's work and recognition in community outreach and cultural resources. Lowell was named an All-American City in 1999 by the National Civic League for its community development efforts in helping Southeast Asian immigrants adapt to a new social and cultural environment. The city's brownfields program works with community organizations, including the Cambodian Mutual Assistance Association (CMAA). The CMAA, which functions like a community development corporation, is gradually remediating a former mill to house a number of its programs, including a day care facility, health and counseling facilities, and a job-training center. CMAA has turned the basement of the building into an aquaculture center with fish production tanks and hydroponic vegetable

farming. Fish farming is seen as a big economic development strategy for the city's large and elderly Cambodian population, most of whom come from an agricultural background.

Portland, Oregon

The City of Portland has had an influx of jobs and people over the past ten years and is expecting 500,000 more residents in the next five years. Given this population and economic growth situation, the city is working to manage its growth in a socially and environmentally responsible way. The local government has been preparing for this growth by creating an urban growth boundary, public transportation systems, and high-density housing options. Brownfields redevelopment is one way that the city is trying to maintain and support these "smart growth" strategies.

As the state's oldest and largest industrial, shipping, and commercial center, Portland has the highest number of Oregon's contaminated urban and industrial lands. These industrial properties are served by major new rail and highway facilities, an international airport, and state-of-the-art deepwater port facilities. While companies are settling in the Portland area, not all are settling into urban infill areas. However, the city is targeting some of its infrastructure development around brownfields specifically to attract and accommodate companies as they grow and develop. Currently, the Brownfields Showcase Community program in Portland is concentrating on the development of smaller brownfields sites in targeted urban renewal areas.

Providence, Rhode Island

Providence is aiming both public resources (at the local, state, and federal levels) and private resources at the revitalization of communities affected by the relocation of industry and the wake of hazardous materials, contamination, vacant buildings, and decaying industrial facilities. The preservation of greenspace and the promotion of reinvestment in brownfields sites are key components to bolstering overall revitalization efforts.

Providence's Brownfields Showcase Community program is unique in its collaboration among government agencies and nongovernment agencies, and the subsequent coordination of fund-

ing sources. The target of these resources is the Woonasquatucket River Greenway Project, which will include approximately thirteen miles of multi-use paths and on-road bicycle routes. The City of Providence's Department of Planning and Development manages the brownfields aspect of this project, while the nonprofit organization, The Providence Plan, manages the project as a whole. The Providence Plan received a four-year matching grant from the Lila Wallace-Reader's Digest Urban Parks Fund, and it also formed a partnership with the Trust for Public Land for acquiring and conserving land along the river. The State of Rhode Island, the U.S. Department of Transportation, and the U.S. Army Corps of Engineers have also committed resources and technical assistance for the greenway project.

Salt Lake City, Utah

Salt Lake City's Brownfields Showcase Community project is the Gateway District, a 650-acre area within walking distance of downtown. Although the district was a vibrant and culture-rich neighborhood in the late 1800s and early 1900s, the area is now primarily home to industrial and commercial business, idle or vacant facilities, and a few residences scattered throughout. Brownfields are a significant component of the city's redevelopment plan because of Gateway's industrial history. Site assessments to identify environmental contamination or dispel any concerns about perceived contamination are essential to bolster redevelopment efforts.

The city's Redevelopment Agency (RDA) works to address brownfields redevelopment and economic and housing development. In this capacity, the city's RDA is spearheading brownfields efforts and the plans for creating an urban neighborhood in the Gateway. This plan calls for the incorporation of retail space, mass transit, greenspace, and existing points of public interest such as Pioneer Park, one of the oldest parks in Utah, among the Gateway's industrial and commercial businesses. These public-oriented land uses and the use of brownfields resources are currently practical because those industries still operating within the Gateway District are mostly non-polluting.

King County/Seattle, Washington

The King County/Seattle brownfields program is a web of local partnerships held together by environmental, contractual, regulatory, and economic relationships. The city of Seattle, King County, and other public agency and private sector staffs work together to provide leadership and direction for the program. Two goals at the center of the King County/Seattle brownfields program are protecting the environment by cleaning up industrial land, and creating and retaining industrial jobs. King County established an urban growth boundary that makes successful reuse of industrial land a priority. Four manufacturing industrial centers (MICs), areas specifically designated to accommodate growth, were established. Brownfields redevelopment resources are being used to improve conditions in these industrial areas.

A unique characteristic of the King County/Seattle brownfields partnership is its work with a local coalition of stakeholders. In 1994, the King County Council created the Duwamish Coalition and gave it the task of building a systemic approach to revitalization of an MIC known as the Duwamish Corridor. The coalition included representatives from labor unions, private companies, public agencies, environmental groups, financial institutions, tribal governments, and community and business organizations.

St. Paul, Minnesota

The Port Authority of Saint Paul has taken the lead in the city's brownfields redevelopment efforts. Although created in 1932 to facilitate commercial navigation through the port, the Port Authority's scope was eventually extended to include removal of blighted properties throughout the city. The Port Authority uses brownfields redevelopment to leverage other community benefits. For example, the city sold remediated parcels of land in a business park for \$1, but attached conditions to the sale. Companies that buy the parcels must build on 30 percent of the site, spend a minimum of \$32 per foot in building costs, pay employees at least \$8 an hour, and guarantee that at least 60 percent of the new hires are St. Paul residents. These provisions ensure quality building and jobs for the city.

St. Paul's Brownfields Showcase Community efforts focus on the Phalen Corridor Initiative. This plan calls for the construction of Phalen Boulevard along abandoned rail lines, which will open 100 acres of previously inaccessible brownfields to redevelopment and job creation.

Stamford, Connecticut

Stamford's highly competitive real estate market makes brownfields redevelopment very economically practical. The city is targeting three brownfields sites for redevelopment, with the expectation that these sites will catalyze the restoration of adjacent brownfields and deteriorated neighborhoods by the private sector. All of the targeted brownfields sites are also situated near each other and are part of a 230-acre, long-term restoration project of underused industrial property called the Stamford Harbor Redevelopment Project. Goals to improve transportation and develop strong community involvement are also being incorporated into the city's brownfields redevelopment efforts.

Stamford was the first city in the country to make a loan under EPA's Brownfields Cleanup Revolving Loan Fund. A \$250,000 loan was made to a developer who admitted that the loan was not what made or broke the brownfields deal since his organization is large enough to independently finance its own deals. However, the developer is leading the industry by example through the support of a program that has the potential to aid other developers without the resources to finance their own deals. Working through the Brownfields Cleanup Revolving Loan Fund not only promotes the program itself, but also provides the developer with an opportunity to work in partnership with the local government and EPA.

Trenton, New Jersey

Trenton's brownfields program is housed in the Department of Housing and Development (DHD). DHD has established relationships with a number of private and public stakeholders, especially with regard to community participation and education. When the city received its initial brownfields pilot grant, a significant share of the funding went to a local community development corporation (CDC). The CDC has had a presence in the community

and a relationship with residents for many years. The CDC works to bring the neighborhood residents into projects related to brownfields and the “greening” of the city, including the creation of community gardens, development of open space, and community education on environmental and public health issues. These programs empower residents to become active in revitalizing their neighborhoods and advocating for their interests.

DHD is also very active in the redevelopment of brownfield sites. Unlike some cities, Trenton is not reluctant to acquire project sites through tax foreclosure. DHD staff members are strong advocates of their brownfields projects, and acknowledge that they must do more than facilitate the deal; they must put together the package and make it happen. One particular example is a large-scale remediation and redevelopment project known as the Roebling Complex. The Roebling Complex is a 45-acre former industrial facility that fabricated heavy steel cable in the 1900s. This site is being remediated and developed into a multipurpose center for office space, retail shops, a 10,000-seat arena, and the first new supermarket to be built in the city since the 1960s.

7.8

Conclusion

Brownfields redevelopment presents a set of unique challenges and opportunities to a community. In one respect, these sites are almost always burdened by stigmas as a result of liability and funding insecurities of potential investors. Yet these same sites present the opportunity of revitalizing neighborhoods—entire communities or regions in some cases—that have fallen by the wayside through years of neglect.

With the right combination of innovation, patience, and desire, the citizens of any community have the potential to reinvent their local neighborhoods and communities. This process requires careful and comprehensive planning among all stakeholders within the community as well as the formation of partnerships with public and private institutions along the way. In addition, these initiatives must find ways to create funding through creative leveraging techniques and stretching resources to the fullest extent. More importantly, communities must not forget to plan and prepare for the future of brownfields redevelopment initiatives. This is the focus of Chapter 8: The Past and Present of Brownfields: Community Planning and Institutional Responses.

THE PAST AND PRESENT OF BROWNFIELDS: COMMUNITY PLANNING AND INSTITUTIONAL RESPONSES



8.1

Overview

Communities continue to address the brownfields issues that have developed over the past several decades. Local governments coordinate resources and try to find funding to quickly redevelop brownfields. However, few communities are systematically planning for their own future land-use needs, for the future of brownfields, and for the long-term requirements needed to maintain a multifaceted approach to brownfields redevelopment. Likewise, few state, regional, and federal agencies are carefully examining how current land-use trends and urban revitalization needs will affect agency programs, delivery of services, or technical needs. Lack of planning for brownfields, long-term land uses, and technical and fiscal resources could threaten to undo, or abruptly halt, all of the successes that a project has realized to date. Areas that need more atten-

tion for long-term planning include community development and land-use planning, institutionalizing staff knowledge and resources for brownfields, maintaining funding and technical assistance for brownfields, and preparing for future redevelopment challenges. Issues that will be discussed in this chapter include:

- 8.2 Community Development and Land Use Planning
- 8.3 Institutionalizing Staff Knowledge and Resources
- 8.4 Maintaining Funding and Technical Assistance
- 8.5 Preparing for the Future
- 8.6 Policy Development
- 8.7 Conclusion

8.2

Community Development and Land Use Planning

Research suggests that brownfields-afflicted communities that have conducted long-term planning are better prepared to take advantage of funding opportunities, have an easier time unifying departments and agencies, and have better community participation in the brownfields redevelopment process. The sorts of planning that have benefited these communities include: (1) land-use planning that considers how local properties will be zoned, divided, developed, or left undeveloped; (2) long-term municipal planning that accounts for changing demographics as well as the social and economic needs of citizens and businesses; and (3) brownfields planning that looks at underused, abandoned, or blighted properties. Each type of planning considers the future needs, population, and resources of jurisdictions.

Lack of Direction

Many cities have land-use and long-term planning documents that are not used effectively. Specific visions are not drawn, and goals are not articulated. The role of brownfields redevelopment,

therefore, may not be included in such long-term planning documents. The documents are sometimes outdated and may not have been amended as technology and city needs changed. In some communities, long-term planning documents are not followed because planning commissions or zoning boards have allowed variances. Some staff members involved with brownfields projects may be aware that a document exists, but they have not seen it or used its mission or vision as a part of developing brownfields programs. In addition to lacking a vision, the long-term planning documents that do exist in some communities were developed without coordination among local agencies and with little or no input from community groups and residents.

Selection of a Long-Term Development Strategy

In an optimum planning process, local governments and neighborhood groups work together to develop land-use plans for communities. In the planning process, local governments and communities create a vision for the community that they want to build together. That vision includes economic development activities, residential, commercial, and industrial land uses, and roads, parks, and other amenities. Local governments and communities also work with municipal planning organizations to consider long-term regional growth and development. Likewise, state agencies contribute to local planning efforts through their own planning policies on road construction and other

In addition to encouraging community groups and local government agencies to work together, the long-term planning process also creates an outline and sets goals for the entire community. These goals become building blocks to strengthen community capacities and resources.

land-use efforts, such as targeted development districts and urban growth boundaries.

This sort of planning serves communities in a number of ways. First, it brings together many agencies and community groups that must develop a unified long-term plan. Such planning encourages each sector to learn about and consider the priorities of the others, as well as to evaluate its own priorities. In the process, groups and departments learn the art of compromise for the good of the whole. This experience is beneficial in stakeholder involvement and brownfields redevelopment because the groups become familiar with each other, learn how to work together, and learn the process of implementing multifaceted projects.

In addition to encouraging community groups and local government agencies to work together, the long-term planning process also creates an outline and sets goals for the entire community. These goals become building blocks to strengthen community capacities and resources. With brownfields and blighted-property concerns, the long-term planning process allows a range of local agencies to consider how brownfields issues can be folded into their programs. This consideration and programmatic adaptation demonstrates the flexibility of a local government that is working to meet the changing needs of the community. Some federal agencies, as a condition of providing funding, require that proposed projects fit into formal community land-use plans. Other agencies that do not require planning documents look for evidence of long-term planning and work with state and regional planning organizations in reviewing funding considerations.

Successful brownfields redevelopment projects integrate regional, state, and federal planning efforts. Likewise, careful planning on the part of regional, state, and federal organizations can further benefit brownfields programs. Many communities successfully work with their metropolitan planning organizations (MPOs) to understand how local transportation and land-use needs tie into larger, regional issues. Many communities have seen the advantages of sharing plans and work with MPOs to obtain and coordinate federal

funds from the U.S. Department of Transportation. Local governments also can communicate and work with each other to develop some regional approaches to issues affecting brownfields, such as employment and transportation opportunities. Addressing these sorts of issues among municipalities and counties—sometimes across state or national borders—facilitates more cooperative approaches to redevelopment.

State governments are increasingly conducting their own land-use and community planning, which affects local programs, including brownfields. Often, community and economic development goals are influenced by natural resource issues. Yet land-use, water, and geographical growth policies are typically established at the state level and enforced by counties or other local jurisdictions. As a result, the state plan often affects more than just the targeted land or water issue. For example, state policies that encourage infill development and discourage urban sprawl often target economically and socially disadvantaged communities that could benefit from development programs. In this case, coordinating and planning among state agencies is necessary to produce the best results for local communities.

Multijurisdictional Coordination in Kansas City

Kansas City, Kansas, and Kansas City, Missouri, participate in a number of coordinated planning efforts as part of their brownfields redevelopment. The two cities approach their economic, social, and infrastructure problems from a regional perspective. The cities passed a bi-state cultural tax, which helps fund the redevelopment of Union Station in Kansas City, Missouri, into a museum and science center. Eleven separate jurisdictions had to approve a cultural tax for the success of the project. The two Kansas Cities are also coordinating metropolitan public transportation efforts and job-training and worker recruitment efforts across state lines. The economic development agencies in the area have agreed not to entice industries within the metropolitan area to cross city or state borders.

State Agency Cooperation in Oregon

The Oregon Economic and Community Development Department (OECDD) and the Oregon Department of Environmental Quality (ODEQ) work together on a number of issues related to brownfields and infill development. ODEQ does not have any of its own funding earmarked to assist property owners with site cleanup, but it can use pass-through dollars from EPA for site assessments.

OECDD has programs to assist brownfields property owners; OECDD offers revolving loan funds for property redevelopment, and some of that money targets brownfields redevelopment. To participate in the programs, OECDD requires compliance with ODEQ brownfields standards. In addition, OECDD consults with ODEQ before making a loan decision.

OECDD offers other funding programs such as water/wastewater infrastructure and ports planning. The state can also use its share of HUD CDBG funding for projects in non-entitlement, small-city areas. These other programs, while they do not specifically mention brownfields, could be used as a funding source for environmental evaluations (and in some cases, remedial activities), as long as the overall project relates to the original scope and purpose of the funding program.

Finally, ODEQ and OECDD staff members worked on a state legislative committee to address brownfields issues. One of the recommendations was to establish a brownfields ombudsperson at OECDD to answer brownfields financing questions. ODEQ staff members or brownfields clients can use the ombudsperson as a resource for any questions that they have about OECDD's programs.

Some federal agencies have brought their resources to bear on local plans and are working with communities to develop new nongovernmental partnerships in brownfields and other land-use and community development programs. The National Park Service (NPS) is involved in brownfields primarily through its Rivers, Trails, and

Conservation Assistance (RTCA) program and through the RTCA Groundwork Trust program. RTCA, founded in 1988, is intended to help local groups undertake conservation projects, such as upgrading properties, creating trails, and protecting rivers or urban forests.

RTCA Groundwork Trust

The RTCA Groundwork Trust is an independent, nonprofit organization designed to aid communities in carrying out development and conservation efforts. The Groundwork Trust model was created twenty years ago in the United Kingdom. Since then, program interest has spread to Europe, Japan, and—through NPS—the United States. With a sustainable program in place, local groups can participate in redeveloping their communities.

NPS believes that a sustainable organization like the RTCA Groundwork Trust program allows brownfields projects to participate in and benefit from opportunities beyond those provided by funding alone. An RTCA Groundwork Trust assures investors that the community is interested in supporting redevelopment. Businesses can work with the residential community to aid in redevelopment such as planting trees along roads. NPS and RTCA serve as a liaison among various groups involved in brownfields projects and enhance communication among stakeholders, such as investors, community members, and brownfields staff members. NPS is also working to include private sector investment in its RTCA Groundwork Trust program and is seeking corporate partners.

8.3

Institutionalizing Staff Knowledge and Resources

Research suggests that without some sort of institutional setting, programmatic development, staff retention, and coordination among offices and stakeholders may be hampered. These factors are important elements in adapting and developing programs that meet the changing and evolving needs of communities. Regardless of what label is attached to the numerous environmental, economic, and community development issues that constitute what we call brownfields, the national pervasiveness of their presence and the depth and breadth of their impact on communities require that all levels of government create an institutional setting where the issues can be systematically addressed.

Reluctance To Create New Programs

Many local government offices, state and regional departments, and federal agencies are reluctant to create entirely new programs specifically for brownfields. The reasoning is that brownfields issues are not new. Rather, it is the cross-section of a number of existing issues and of approaches to addressing these issues that is new. Hence, brownfields programs address old issues with new tools. Although organizations are invested in addressing brownfields issues, they do not feel that they have resources to dedicate wholly to brownfields. Instead, existing programs will be adapted for new uses.

Creation of a Setting for Brownfields Issues

Successful community redevelopment projects have created a home for brownfields reuse processes. In these settings, staff members can concentrate on developing long-term approaches to the numerous aspects of brownfields redevelopment. They can also establish clear lines of communication and working relationships with brownfields stakeholders, organizations, and agencies without having to re-create the system for each brownfields project. A permanent home for

brownfields work will become increasingly important in the following situations:

- When project funding diminishes;
- If the current economic climate changes so that developers are less likely to take on the inherent risk in investing; or
- When non-economic redevelopment uses are considered for more properties.

Knowledgeable and resourceful staff members with a pool of experience in working with a range of agencies and private sector interests will be able to develop creative approaches to redevelopment under changing circumstances and funding opportunities.

Adaptation and Synthesis of Existing Programs

State and federal agencies that are anticipating the future needs of communities are working to make their organizations more brownfields savvy. While few agencies have the human, technical, or financial resources to dedicate themselves wholly to brownfields, many are working across departments in their agencies to build the knowledge and experience so that staff members are able to address a variety of brownfields issues and apply a number of agency resources. In this way, different agency departments and staff members can work on various aspects of brownfields depending on how their background or job focus fits the particular situation.

Communities, as well as state and federal agencies need to be prepared for changes in the types and levels of resources.

8.4

Maintaining Funding and Technical Assistance

In addition to the need for community-based planning and institutionalization of brownfields

programs, communities, and state and federal agencies need to be prepared for changes in the types and levels of resources. As federal programs and priorities evolve, current agency partners shift course, and new leadership takes the helm, the existing Brownfields National Partnership could change significantly. Therefore, communities that are planning for modified or diminished forms of funding will be better prepared for long-term brownfields program sustainability.

Lack of Extensive Planning Beyond Current Resources

Our research suggests that some local brownfields offices will be challenged when current widespread funding for brownfields changes, because neither are they considering ways to capture technical and professional knowledge, nor are they working to use their current funding to create incentives and leveraging to ensure long-lasting support for brownfields.

For example, some communities are not preparing for the end of their current round of resources. Through the Brownfields National Partnership, technical assistance is available to communities through state, regional, and federal offices. Perhaps the most obvious example of technical assistance has come through the U.S. Environmental Protection Agency Intergovernmental Personnel Assignments (IPAs). In the Brownfields Showcase Communities Initiative, the IPAs served as important additions to the communities' brownfields programs. These individuals, who brought a great understanding of federal agencies with them to the communities, dedicated all of their time to brownfields issues. Depending on the communities' needs, the IPAs worked to coordinate stakeholders, educate local government agencies about brownfields issues, network with regional and federal agencies, and conduct community outreach and education. The IPAs' presence in communities has been imperative to the success of the program. However, few Showcase Communities have made concrete plans for the departure of the IPAs by arranging for the knowledge and experience to remain within the community. In addition, many Showcase Communities are not preparing to have one less staff person working on brownfields and are not

thinking about the effect that loss will have on the program.

Creative Fund-Leveraging

When funding from federal agencies expires, many local governments will be faced with challenges such as covering the cost of site assessments and community education efforts. Local governments that are thinking strategically are planning for the eventual end of funding; they are preparing to use their own funds in ways that benefit community goals or that create long-term investment in brownfields. Extensive community education efforts and assessments over wide areas (such as blocks of former industrial sites or widespread groundwater testing) are examples of ways that communities are using federal funds to address long-term issues that may not be funded in the future. Many communities are also taking steps to promote the overall successes of local brownfields programs in general in an effort to keep brownfields a high priority for local, state, regional, and federal agencies. In this way, they are sharing the models of cooperation and public-private partnerships, as well as detailing how investments to brownfields have seeded redevelopment and economic activity.

In spite of the ability to creatively leverage funds, local governments continue to need increased and more flexible funding from state and federal agencies. This funding is needed for the range of activities required to prepare sites and expedite the redevelopment of brownfields. This issue can become more urgent as the best brownfields sites are redeveloped, leaving the less attractive sites that are either more contaminated or are located in less desirable areas. Similar to picking fruit, the best pieces—in terms of brownfields, the best lots—are selected first, leaving behind the less desirable choices. Currently, the most attractive and easily reused brownfields are being redeveloped, while more complicated brownfields sites are being passed over. Current funding from federal agencies has been helpful in easing assessment costs. This funding has been an extra incentive for developers to move forward with the development of a brownfields site. However, as the easiest brownfields are redeveloped and more complicated

brownfields remain, more flexible funding will be needed to assess and remediate sites, especially in the case of brownfields sites that will not be used for direct economic development projects and that will not yield a definable revenue stream.

Comprehensive and Flexible Program Structure

State and federal agencies that are moving strategically to adapt their programs and policies to benefit brownfields scenarios will still have the capacity to deliver services and assistance to communities after brownfields have faded from the limelight. While some agencies are creating programs to specifically meet the needs of brownfields redevelopment, a number of existing programs could, with modifications, be applied to brownfields projects. In this capacity, federal agencies are truly within their role of providing service and assistance to local governments. As the needs of communities and local governments change, the resources of the federal government must also change to respond adequately. As local governments, communities, and developers become increasingly familiar with the tools and methods for successfully redeveloping brownfields, brownfields-specific programs will be less needed. Rather, brownfields redevelopment will be one tool that a community may use in its economic or neighborhood development strategy. Similarly, federal agencies will not necessarily have to offer a brownfields-specific program; they may be able to meet the needs of brownfields practitioners through the natural evolution of policy and program development.

One of the basic issues facing brownfields practitioners is maintaining momentum for brownfields redevelopment.

8.5

Preparing for the Future

A series of long-term issues face all stakeholders in brownfields redevelopment. The issues are most compelling for local governments because they are the essential glue that binds redevelopment efforts together as they provide incentives and guidance to local stakeholders, including private sector redevelopers. But the challenges require consideration by all stakeholders and at all levels of government. One of the basic issues facing brownfields practitioners is maintaining momentum for brownfields redevelopment. How does an office or an individual keep ongoing funding, staff interest, and stakeholder interest high so that abandoned or idle sites will continue to be redeveloped after the early brownfields victories have been realized and the more challenging sites remain? A similar issue facing brownfields practitioners is the ongoing struggle to unify economic and community development and to include public health issues. For example, how can community and public health concerns be equitably addressed while maintaining important private sector investment?

At the local level, this challenge involves maintaining relationships among agencies, keeping political-level or executive-level support for brownfields, nurturing community relations as well as public-private partnerships, and developing new relationships. Additionally, local brownfields practitioners face the ongoing struggle of including brownfields in other local government initiatives and finding ways to fund the costs of assessments and remediation. Another long-term management issue that local governments face is future brownfields development for non-economic uses such as greenways, parks, and recreational areas.

Maintaining Project Momentum

Some state agencies attempt to maintain brownfields momentum by broadening their scope of interest in brownfields programs and developing working relationships with other state and re-

gional agencies charged with managing issues such as transportation, community and economic development, and job training. Our research suggests that state environmental agencies are caught in the precarious position between enforcing environmental noncompliance and working with property owners to remediate and redevelop sites for potential economic or community uses. The former discourages property owners and businesses that are creating economic opportunities. The latter frustrates community groups and citizens who want assurances of environmental compliance.

Regional organizations and agencies must continue to serve as links among local jurisdictions and state and federal agencies. To maintain the momentum of brownfields programs, regional offices of federal agencies must work with their federal counterparts to clarify roles and levels of involvement in programming, to provide technical assistance, funding, and to generally coordinate efforts. To broaden interests and increase opportunities for brownfields programs, federal regional offices must work more closely with each other to develop partnerships where resource availability, technical assistance, and project development can be shared.

Retaining Coalition Membership

To continue the successes of nationwide brownfields redevelopment initiatives, federal agencies must work to get all partners on board in the fullest sense. To date, some federal agencies have agreed to be part of the Interagency Working Group, but they have brought few, if any, resources or technical assistance to the widespread brownfields projects. The future of brownfields redevelopment programs can also benefit from more extensive working partnerships among the federal agencies, which will allow the agencies to consider each other's expertise, program areas, and ways that programs can work together in a complementary fashion. Given the scope of activity of federal agencies, the range of work, and the amount of time involved in brownfields redevelopment, agencies can participate in the brownfields process at many different times over the course of revitalization. Some agencies, in spite of their original commitments to the pro-

gram, have not made concrete contributions to brownfields initiatives. This lack of support results from many factors, including competing interests, statutory or regulatory prohibitions over commitment levels and activities, lack of support for brownfields at top agency levels, and the need for the agencies to develop a clear-cut mission regarding brownfields. Over the course of several years—and given the various stages of redevelopment and ways that agencies' resources fit the needs of projects—federal agencies that are involved in the Brownfields National Partnership are likely to rotate in and out of the Interagency Working Group. Therefore, a sustained partnership faces the challenge of keeping federal partners—especially those whose resources are needed later in the brownfields redevelopment process—enthusiastically involved in the Brownfields National Partnership.

Addressing Unfavorable Brownfields

Another set of issues related to managing brownfields programs addresses the increasing complexity of redeveloping brownfields. One issue involves the next generation of brownfields redevelopment. Currently, the economy is strong, brownfields are popular, and incentives for redevelopment are high, so many properties that are blemished by contamination are still good candidates for assessment, remediation, and redevelopment. However, many brownfields, such as those with worse contamination, odd-sized lots, and lack of infrastructure, are considerably less attractive than their more easily redeveloped counterparts.

Moreover, the true test of brownfields program sustainability will take place during the next economic downturn. How many of the current initiatives will survive more difficult times? Many of the popular economic development incentives, such as tax increment financing (TIF) and tax abatements, will gravitate toward those projects most likely to be achieved, and competition for these incentives will be considerable in tougher times. It is possible that, as was the case during the early 1990s, brownfields will be at a tremendous disadvantage in the competition for public assistance to promote private development. Program leaders will have to work with the next

generation of stakeholders to make sure that brownfields can successfully compete. Adding to that issue is the dilemma that many of the next-generation brownfields will not be developed for economic purposes.

Because the property will not be contributing back to the economy through tax generation or job creation, it may not be able to provide an opportunity for recouping the monies paid for remediation. Given the complexity and potential lack of economic uses for these abandoned sites, in all likelihood communities will face the expense, liability, and work of redeveloping the properties themselves.

With this reality, communities are also facing the question: Who is the next generation of stakeholders and how can we get them involved today? Some communities are considering how to cover these future expenses for projects that will not produce any economic activities.

Facilitating Private Sector Participation
Among these uncertainties, the brownfields roundtable is getting another leaf that will allow room for the increasing participation of banks, corporations, foundations, and nongovernmental organizations. Banks and corporations can find themselves in a dilemma analogous to that of state environmental agencies: being both good performers to their stockholders and investors by bringing home a solid economic return as well as good community members by cleaning up properties. These attributes are often in conflict with each other. In the future, these sorts of issues need to be addressed at all levels on brownfields policy in general.

Banks are often silent partners in brownfields cleanup, although their engagement in the process has been crucial. Over the past several years, banks have become knowledgeable about issues surrounding contaminated properties. They have begun to understand the real versus the perceived environmental and financial risks in redevelopment. For the most part, banking institutions and regulatory agencies have received accolades for understanding and adopting various tools that can support brownfields real estate transactions and development (such as environ-

mental insurance) and for changing lending practices that surround brownfields.

Nonetheless, banks are in a quandary regarding other aspects of brownfields. Banks may be left holding notes in arrears on brownfields properties. When a property is not contaminated, banks typically foreclose on the defaulted property, take it from the owner, and sell it to recover the loan amount. However, in the case of brownfields, banks often choose not to foreclose on properties to avoid potential liability and the additional (and often unknown) costs of cleanup. In other cases, the perception of contamination undermines the value of the property when the lender tries to sell it, even if liability is not an issue. Thus, banks are reducing their legal and financial losses by not pursuing ownership of the collateral property. This strategy may make good legal and fiscal sense but it makes bad community sense. This strategy also has the unintended effect of contributing to neighborhood decline because no viable party steps forward in a timely manner to take ownership of and responsibility for a property. Therefore, as banks consider their participation in urban redevelopment, they must also think about ways in which they can work with civic and community groups as well as the resources the groups can contribute to brownfields reuse.

8.6

Policy Development

As brownfields-afflicted communities, brownfields practitioners, federal staff members, and researchers all look to the future, no one can be sure exactly what they will see. However, research uncovers a few upcoming challenges that brownfields programs are likely to face down the road. Those challenges include fundamental questions about how to measure results across communities and programs of different sizes and the long-term future of brownfields redevelopment projects. Other concerns involve whether brownfields redevelopment can adequately address community and social issues such as environmen-

tal justice and neighborhood gentrification. Stakeholders are also engrossed in detailed discussions about the complexities and opportunities in current and future economic development and non-economic development alternatives for brownfields, such as open space and temporary or interim uses. The following section of our research discusses these and other policy challenges on the horizon for brownfields practitioners and other community stakeholders.

Measurements of Community Success

Given the diversity of approaches that a community can take in redeveloping brownfields, measuring results of brownfields programs can be very difficult. Aside from the number of lots remediated and jobs created, other factors of redevelopment are subjective and cannot be easily seen or counted. Therefore, it is difficult to describe or show the levels of success that a community is realizing in its own revitalization. Communities pursuing more ambitious, large-scale redevelopment may not see initial successes because basic site organization and preparation require a longer lead time than small, single-lot redevelopment. In some communities, the physical redevelopment of a site may happen late in the process of revitalization, and even after several years, measurements may be difficult to take. Many results of brownfields redevelopment, such as new interagency partnerships, are long-lasting but difficult to tabulate. Funding agencies and other organizations that are accountable for their fiscal investments may not be able to use such non-objective results to authorize further funding. Nonetheless, time and resources invested in developing trust and effective communications among agencies will reap far-reaching benefits in the long run that straight-ahead redevelopment without stakeholder consultation may not realize. However, the results of remediation and redevelopment are easier to measure in the short term. Given this difficulty, many communities are forced to strike a compromise between long-term planning and partnering and quick turnaround on redevelopment.

Community Progress

In spite of the subjective nature of some benefits of brownfields redevelopment, several observations can be made to indicate levels of success. The actual amount of cleanup, the number of properties remediated, the extent of redevelopment, and the number of jobs created can be accounted for. Other factors include the following:

- The number and degree of assessments conducted;
- Lists of target sites and plans for brownfields use;
- Institutional controls and other land-use concerns;
- The cultivation and involvement of community leadership in brownfields issues;
- Outreach and education to community members, financial players, private sector representatives, and community development corporations;
- Job-training programs targeted to either brownfields cleanups or locations;
- Public health agency involvement;
- Financial incentives targeted to brownfields situations;
- The number and intensity of partnerships on local, state, regional, and federal governmental levels, as well as those with the financial and private sector; and
- Steps taken toward program self-sufficiency.

The last measurement factor that deserves discussion in the context of the brownfields redevelopment is that of revitalization strategy and local government resources to achieve that strategy. Some communities focus on small, quick results in redevelopment. Other communities do not have target sites but are dedicated to developing a comprehensive approach that includes community and interagency buy-in. Resources that communities can dedicate to brownfields redevelopment vary greatly.

Gentrification

Other challenges involve whether brownfields redevelopment can help address environmental justice concerns and whether a brownfields

project might lead to neighborhood gentrification. Many communities target community development needs such as housing, cultural heritage, public spaces, and amenities. These programs highlight how traditional economic development efforts can integrate traditional community development objectives.

As these community brownfields programs venture into the domain of community development, they will encounter other challenges. One of those challenges is the specter of gentrification. In many cases, the only resource available is anecdotal information about gentrification. Some community stakeholders raise concerns about the possible displacement of neighborhood shops owned or operated by ethnic or racial groups. Others worry that, although brownfields projects in their community might serve as a catalyst for economic revitalization, the long-standing residents of that community, many of whom represent various ethnic and racial minority groups, will not directly reap those benefits. Although it is nearly impossible to determine the strength of these concerns, the following perspectives offer a glimpse of the future.

Projects with a more community-driven focus offer good models on how to work closely with the community to address the potential of gentrification. By developing close partnerships with community development corporations and empowering community members, brownfields redevelopers can address community needs first. Coordinating with local job-training pilot programs and organizations helps increase the likelihood that residents in these redeveloped neighborhoods can find jobs linked to brownfields projects. Even with these efforts, it is still difficult to reverse years of neglect and mistrust that have permeated many of the neighborhoods. Nonetheless, brownfields revitalization strategies offer positive first steps that communities can use to address the ongoing challenges of environmental justice and gentrification.

Non-Economic Development Uses

Most brownfields projects to date involve sites that are prime targets for economic redevelopment

In some communities, stakeholders are beginning to explore the idea of including non-economic land uses in their brownfields reuse strategies.

by the private sector. With the economic boom of the past several years, the marketplace has driven many of these successful brownfields projects. A critical challenge confronting brownfields policy makers today is those sites with little economic potential. If the private sector is not attracted to these secondary sites, can the public and nonprofit sectors acquire and revitalize these properties? If so, how will they do it? Do they have sufficient expertise and resources? If not, can temporary uses be designed during the interim? Nonprofit organizations, such as the Trust for Public Land and the RTCA Groundwork Trust program, have discussed the possibility of using certain brownfields sites as neighborhood open spaces or for community recreational uses until the market generates sufficient interest.

In some communities, stakeholders are beginning to explore the idea of including non-economic land uses in their brownfields reuse strategies. Amenities, such as parks, open space, and waterfront trails, can be viable ways to use land but involve added challenges related to funding and maintenance. Some cities, such as Stamford, Connecticut and Glen Cove, New York, are pursuing development-linked funding strategies—using the revenues from boat slips and new business ventures to pay for installation and maintenance of new parks, riverwalks, and the like. As brownfields sites take on a more prominent role in local land-use strategies, alternative development and funding mechanisms will need to be pursued. The partnerships established among successful brownfields redevelopment programs can be useful sources of ideas and technical assistance to communities pursuing the next generation of site uses.

8.7

Conclusion

Issues and policy development ideas are a dime a dozen. Everyone has ideas and evidence of what has worked and what has not. However, initiatives that work to simultaneously address economic, environmental, and community issues in our society while developing new models for how government should work are priceless. In many cases, brownfields projects have done just that. Yet questions remain. Have brownfields redevelopment and interagency coordination worked? What is the final answer?

In general, the answer is yes. Brownfields redevelopment has worked as a model to promote environmental protection and to foster economic redevelopment and community revitalization through the assessment, cleanup, and sustainable reuse of brownfields; to link federal, state, local,

and nongovernmental strategies and resources to restore and reuse brownfields; and to develop national models demonstrating the positive results of public and private collaboration to address brownfields challenges that can be adapted and applied to other programs. At least to this point, nationwide brownfields redevelopment initiatives have yielded many evolving components—and continue to improve.

Who is responsible for the successes? Brownfields redevelopment strategies have had champions in every corner to coordinate the efforts and rally the troops when they were flagging. However, like all brownfields efforts, the successes that came at all levels were those generated by every stakeholder who participated in the process. In this sense, all brownfields development stakeholders continue to redefine how issues are addressed, how funding is granted, how partnerships are developed, and how solutions are achieved across governmental entities and communities.

APPENDIX I

FEDERAL INTERAGENCY WORKING GROUP
SUMMARY AND CONTACTS

The following agencies have programs that provide technical and financial assistance to brownfields redevelopment efforts. Agency summaries are provided to establish the missions and background of federal partners as well as their significant contributions to the Brownfields National Partnership. In addition, specific financial, technical, and regulatory programs are described where appropriate.

U.S. Federal Departments

U.S. Department of Agriculture

The U.S. Department of Agriculture (USDA) is a department of twenty-nine agencies that, together, cover a broad spectrum of responsibilities and authorities primarily geared to serving rural communities. The USDA's mission includes supporting the production of agriculture; ensuring a safe, affordable, nutritious, and accessible food supply; caring for agricultural, forest, and range lands; supporting the sound development of rural communities; and providing farm and rural residents with economic opportunities. In this respect, USDA might be likened to the U.S. Department of Housing and Urban Development (HUD) of rural America—bringing levels of resources and technical assistance to rural communities comparable to those HUD brings to urban communities. Moreover, USDA uses Empowerment Zone (EZ) and Enterprise Community (EC) Initiative programs to bring economic redevelopment opportunities to disadvantaged communities in rural settings. Brownfields redevelopment is an issue for USDA because it is an initiative that can help save farmland. By promoting and supporting brownfields redevelopment, USDA strives to prevent prime farmland from being sacrificed, while helping bolster rural economies.

USDA works on the regional and local level through extension offices that can be found in almost every county in the United States. These USDA Service Centers have staff to help connect local efforts to federal resources. USDA builds on existing relationships between the community and USDA Service Center staff to disseminate information about brownfields and those USDA programs applicable to brownfields projects.

While USDA does not offer any grant programs, it supports brownfields and other development initiatives through loan and technical assistance programs. Because USDA is the primary agency working in rural America, such communities are accustomed to this type of financial assistance. Urban communities, on the other hand, typically receive grants from federal agencies more commonly than loans. Few USDA programs can readily be applied to urban proj-

ects, and funding through loans—instead of grants—may not make USDA support as attractive to urban areas. Whereas grants are often used to fund programs, USDA loans programs are used primarily for leveraging resources.

Financial Assistance

While no USDA programs can be used toward site remediation, funds can be used to assist in the redevelopment of brownfields or the development of a business on brownfields site.

USDA Urban Resources Partnership

The USDA Urban Resources Partnership employs the services of numerous federal, state, local, and independent stakeholders to address sustainable redevelopment issues in disadvantaged communities. USDA contributes funding, technical assistance, and access to existing resources to redevelopment projects originating at community and neighborhood levels. This partnership focuses on exploring and promoting the creative application of redevelopment of properties and mechanisms to return brownfields to “green” developments.

Open Space Development and Tree Planting

USDA employs technical assistance and funding from the U.S. Forest Service to coordinate efforts with independent forestry organizations including American Forests, the National Tree Trust, and the National Arbor Day Foundation. Activities are intended to promote sustainable open space development, tree replanting, and the mitigating qualities trees may provide for brownfields remediation practices.

Business and Industry Guarantee Loans

Business and Industry Guarantee Loans can be used to fund the initiation or development of a business on rural brownfields sites. These loans function much like loans from banks, except USDA offers technical assistance to its borrowers.

Rural Utilities Service

The Rural Utilities Service lends money to fund infrastructure development or improvements, including those relating to brownfields projects in rural areas.

Rural Empowerment Zone/Enterprise Community
The Rural Empowerment Zone/Enterprise Community (Rural EZ/EC) program is designed to promote and support economic opportunity, sustainable community development, community-based partnerships, and strategic visions for change. With regard to brownfields, USDA plans to identify those rural EZ/ECs with brownfields pilots and to coordinate federal, state, and local redevelopment efforts. USDA will also award preference points to rural EZ/EC applications that include brownfields pilot sites.

Technical Assistance

State Urban Forestry Coordinators

USDA uses coordinators within the U.S. Forest Service to promote environmental sustainability in urban development through land and brownfields reuse, conservation of local natural resources, and development of ecologically sensitive transportation infrastructure.

Land-Grant Colleges and Universities

Land-grant colleges and universities founded under the First Morrill Act of 1862 and the Second Morrill Act of 1890 can provide another source of regional information for brownfields-related issues. Those acts provided funding to establish at least one land-grant institution in each state to ensure the development of agricultural, mining, and other vocational technologies. Thus, land-grant universities may provide further insight into economic and cultural issues as well as strategies for economic and brownfields redevelopment in small or rural communities.

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U.S. Department of Commerce

The U.S. Department of Commerce (DOC) promotes job creation, economic growth, and sustainable development through partnerships with businesses, universities, and communities. DOC emphasizes enhancing U.S. competitiveness in the global marketplace by bolstering national economic infrastructure, developing innovative technologies, and managing valuable national resources. DOC is able to contribute to the Brownfields Initiative most effectively through the Economic Development Administration (EDA) and the National Oceanic and Atmospheric Administration (NOAA).

Economic Development Administration

The Economic Development Administration is an agency within the Department of Commerce whose purpose is to generate new jobs, help retain existing jobs, and stimulate industrial and commercial growth in economically distressed areas. EDA assistance is available to rural or urban areas experiencing high unemployment, low income, or other severe economic distress. EDA has become a good friend to the Showcase Communities Program. Since 1997, EDA has identified brownfields as strategic priorities for the projects that it funds at the local level. Generally, EDA provides communities with funds to make infrastructure improvement and to begin capitalized revolving loan funds, as well as other forms of support.

To this end, EDA polices do not allow cities without comprehensive long-term planning documents to receive EDA grants or loans. This policy is EDA's way to encourage all cities to develop a comprehensive economic development and land-use strategy. EDA looks to carry this belief further in federal partnerships that are working with communities and local government. Such long-term planning serves many functions in brownfields redevelopment. First, it allows communities to better coordinate the multifaceted local approaches to brownfields. Second, long-term planning allows communities to understand how redevelopment and land use are part of larger goals. Last, and perhaps most important on the local level, communities will be able to better coordinate local, state, regional, and federal resources if they have long-term planning docu-

ments that demonstrate the communities' dedication to methodical redevelopment and their commitment to partnerships broader than just cities.

Financial Assistance

Public Works and Development Facilities Program

The Public Works and Development Facilities Program allows EDA to bolster economic development efforts in disadvantaged communities intended to attract local, private sector, and public sector funding for redevelopment projects. In many cases, grant funding is used to develop or revamp deteriorated infrastructure on brownfields sites that are well suited for industrial or commercial redevelopment or both. In addition, this program allows special infrastructure and property enhancements for specific industries as well as job training and creation.

Economic Adjustment Program

EDA uses the Economic Adjustment Program (Title IX) to provide funding and technical assistance to tailor specific local, regional, and state economic redevelopment strategies in areas that have experienced drastic blows to or have sustained depletion of existing socioeconomic programs and institutions. Cases where Title IX funding is available include, but are not limited to, industrial or military complex closings, population emigration, and natural disasters.

Planning Program for Economic Development Districts, Indian Tribes, and Redevelopment Areas

EDA uses the Planning Program for Economic Development Districts, Indian Tribes, and Redevelopment Districts to strengthen local economic bases in disadvantaged areas including Indian communities and designated economic districts. Funding is provided through planning grants to generate and retain jobs as well as to stimulate industrial and commercial growth.

Planning Program for States and Urban Areas

The Planning Program for States and Urban Areas is the mechanism employed by the EDA to provide distressed urban metropolitan areas as well

as states with funding to encourage widespread economic revitalization. These planning grants encompass inclusive strategies and policies aimed at revitalizing commercial and industrial growth for an intrastate region or an entire state.

National and Local Technical Assistance Programs

EDA uses both the National and Local Technical Assistance Programs to provide funding and technical assistance to a broad range of communities and interest groups through state and local governments, educational institutions, and public-private institutions. Assistance and grants are offered to promote economic revitalization through comprehensive planning strategies including sustainable development and brownfields reuse.

University Programming

EDA awards grants to colleges and universities to develop programs that stress economic development strategies among private sector markets in local communities.

Trade Adjustment Centers

EDA utilizes twelve regional Trade Adjustment Centers to revitalize U.S. corporations that have suffered because of foreign competition and relocation practices. Assistance is offered through cost-shared technical consultation geared to equip firms with innovative economic development strategies in global markets.

Defense Economic Conversion

EDA provides specific funding allocations to communities affected by military base closure or downsizing. Military economic conversion goals are used to attract private sector investment by providing an impetus for redevelopment through demolition, rehabilitation, or construction of facilities, as well as through infrastructure improvements.

Office of Economic Conversion Information

The Office of Economic Conversion Information (OECI) operates in partnership with Department of Defense to maintain a database of statistics related to defense economic conversion. The OECI

database is a free service and catalogs economic and technological information on existing military facilities, as well as government programming that may be used to revitalize communities affected by downsized or terminated operations.

Revolving Loan Funds

EDA offers funding initiatives aimed at promoting community economic redevelopment through private sector investment and job creation. Remitted funding and interest payments are then reinvested within the community to finance continued redevelopment efforts.

Research and Evaluation Programs

EDA provides grant funding and enters partnerships through the Research and Evaluation Program to provide concrete data on national economic development trends. Through directed studies, EDA identifies economic development practices that have succeeded and failed as well as strategies to prevent and overcome future development impediments.

National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Association of the Department of Commerce is charged with the mission to conserve and wisely manage the nation's coastal and marine resources. It is in this capacity that NOAA has become involved in brownfields redevelopment by providing funds, resources, and technical assistance to support brownfields development efforts on the local level. NOAA participation in the Brownfields National Partnership also provides an opportunity for the agency to engage in the land-use planning that is necessary to protect aquatic environments.

NOAA does not offer resources for brownfields through a consolidated brownfields program, nor are brownfields issues managed by one particular office within the agency. Rather, existing agency programs and funding have been modified to include brownfields redevelopment. NOAA is promoting such programming to be used to further brownfields redevelopment efforts.

Financial Assistance

Coastal Zone Management Program

The Coastal Zone Management Act allows the Office of Ocean and Coastal Resource Management to offer technical and financial assistance in voluntary partnerships with states. The goal of those partnerships is to help states protect and revitalize coastal resources by empowering states to designate the specific uses of federal grants. Funding is typically not sufficient for site redevelopment but serves as seed money for projects such as feasibility studies, site assessments, and master plan development.

National Marine Fisheries Service and Science Centers

The National Marine Fisheries Service (NMFS) or “NOAA Fisheries” administers NOAA’s programs which support the domestic and international conservation and management of living marine resources. NMFS provides services and products to support domestic and international fisheries management operations, fisheries development, trade and industry assistance activities, enforcement, protected species and habitat conservation operations, and, through Science Centers offices, the scientific and technical aspects of NOAA’s marine fisheries program.

National Ocean Service

The National Ocean Service (NOS), the nation’s principal advocate for coastal and ocean stewardship, develops the national foundation for coastal and ocean science, management, response, restoration, and navigation. The National Ocean Service maintains its leadership role in coastal stewardship by bridging the gap between science, management, and public policy in the following areas: healthy coasts, navigation, coastal and ocean science, and coastal hazards.

Coastal Resource Coordinator Program

The Coastal Resource Coordinator Program engages the Office of Response and Restoration to protect delicate coastal resources from the adverse effects of hazardous contamination that may be linked to brownfields sites. While services are limited to assessing and remediating affected

coastal sites, technical information and remediation strategies may provide insight into brownfields that are responsible for second hand contamination.

Showcase Community Workshops

The Office of Sustainable Development finances educational programming in appropriate Showcase Communities that is designed to alert stakeholders to the causes, effects, and remedial techniques associated with waterfront brownfields contamination.

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U.S. Department of Defense

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) operates within the Department of Defense and is charged with providing comprehensive engineering, management, and technical support to DoD and other federal agencies, as well as to state and local governments. USACE does not receive a mission-funded budget from Congress but, rather, generates revenue through services rendered. While unable to contribute monies to brownfields redevelopment projects USACE offers technical brownfields assessment, consultation, and service to communities and to other federal agencies. Many of those services focus on waterfront or waterway projects commensurate with USACE's history of waterborne navigation works. However, the agency is developing a new emphasis that balances the creation of public works with the maintenance of livable cities.

Technical Assistance

USACE's primary role in the Brownfields National Partnership is to provide technical consultation to brownfields redevelopment projects that require engineering services. USACE fulfills this role by developing comprehensive plans, reviewing and revising civil works policies, maintaining an inventory of formerly used defense sites (FUDS), and offering planning assistance to brownfields pilot communities. Planning assistance includes providing appraisal, title, and deed restriction services; performing market impact studies and cost-benefit analyses; sharing laboratory and field research data; developing environmental and structural frameworks for projects with contractors in pilot communities; and carrying out projects to protect, restore, or create aquatic and ecological habitats related to the disposal of dredged materials.

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U.S. Department of Education
 The Department of Education (ED) is devoted to improving the overall quality and efficiency of all levels and varieties of U.S. learning institutions. This mandate is most often approached through enforcing national educational standards, regulating federal educational grants, and compiling national statistics through standardized testing and then distributing information to all levels of government. In addition, ED is able to encourage learning initiatives that emphasize emerging and contemporary issues such as sustainable development and brownfields redevelopment.

ED fulfills its commitment to the Brownfields National Partnership primarily through disseminating information on brownfields issues to local primary and secondary educational institutions. However, the Office of Vocational and Adult Education is able to provide more direct assistance with issues that often accompany brownfields and environmental justice problems.

Educational Assistance

School-to-Work Program

The School-to-Work program allows ED to provide literacy programs, as well as vocational and technical training, to disadvantaged adults in low-income communities. Not only do such programs bolster community confidence, but they also may act as direct avenues to provide brownfields redevelopment training and, in turn, generate jobs and revenue in impoverished communities.

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U.S. Department of Energy

The Department of Energy (DOE) is the primary scientific and technical research agency regarding national energy, security, and subsequent environmental concerns. In other words, DOE is often affiliated with high-level contamination associated with nuclear energy and weapons facilities. Following recent trends of military downsizing and nuclear disarmament, DOE has made the assessment of environmental quality and public health concerns at underused or unused facilities the top priority of the agency.

DOE contributes to the Brownfields National Partnership by studying, developing, and sharing information as it relates to remediation methodologies and technologies of high-level contamination. Through the experiences that are typically unique to DOE protocol and jurisdiction, brownfields reuse strategies may directly shape or be incorporated into site-specific projects. Finally, DOE is able to contribute funding to research ventures that address efficient energy technologies in land-reuse projects.

Technical Assistance

The National Institute for Environmental Renewal DOE has entered into a partnership with the National Institute for Environmental Renewal in an effort to reach multiple levels of stakeholders in energy and related strategies, technologies, and alternatives in brownfields redevelopment.

Office of Environmental Management

The Office of Environmental Management operates within DOE to fund contamination remediation as well as to research and develop innovative technologies designed specifically for identifying and treating high-level hazardous wastes. In this capacity, DOE is able to rectify hazardous waste issues implicit to historical departmental operations while providing tools to address a broad range of brownfields contaminants.

Office of Energy Efficiency and Renewable Energy/Center for Excellence for Sustainable Development

DOE employs this office to compile, research, and develop resources commonly associated with

sustainable development practices: land-use planning, municipal energy, green development, and ecological industry. Brownfields redevelopment is among core strategies to promote sustainable development.

Office of Building Technology, State and Community Programs

DOE uses the Office of Building Technology, State and Community Programs to coordinate information resources among governments, industries, and communities relating to energy-efficient construction and distribution. Findings of the program are used to develop and implement programs designed to balance energy consumption and waste reduction to promote more energy-efficient buildings, infrastructure, and communities—including practices used and facilities erected during brownfields redevelopment.

Office of Industrial Technologies

The Office of Industrial Technologies (OIT) creates partnerships among industry, trade groups, government agencies, and other organizations to research, develop and deliver advanced energy efficiency, renewable energy and pollution prevention technologies for industrial customers.

Office of Power Technologies

The Office of Power Technologies (OPT) seeks to develop clean, competitive power technologies including renewable energy (solar, wind, geothermal, and biomass), energy storage, hydrogen, and superconductors. OPT works with members of the power sector on initiatives dedicated to lowering energy costs, reducing greenhouse gas emissions and pollutants, and improving the reliability of services.

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U.S. Department of Health
and Human Services

The U.S. Department of Health and Human Services (HHS) is the principal agency for protecting the health of U.S. citizens. HHS has eleven operating divisions and 300 programs that focus on a variety of issues including research, disease prevention, financial assistance, and health care. Two divisions, the Agency for Toxic Substances and Disease Registry (ATSDR) and the National Institute of Environmental Health Sciences (NIEHS), have been particularly engaged in brownfields programming.

Agency for Toxic Substances and Disease Registry

The Agency for Toxic Substances and Disease Registry was created through Superfund 104 legislation to reduce exposure to and to prevent adverse human health effects and the diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution. ATSDR activities include public health assessments, applied research, emergency response, and education. ATSDR's brownfields work is administered through the Office of Urban Affairs, which provides leadership in the areas of environmental justice, brownfields, and minority health issues.

National Institute of Environmental Health Sciences

The National Institute of Environmental Health Sciences strives to reduce human illness through investigating and understanding health issues resulting from environmental causes. To reach this goal, NIEHS conducts community outreach, prevention, intervention, research, and education. NIEHS supports the Showcase project through its involvement with worker training, including the administration of the Brownfields Minority Worker Training Program, and through research conducted by the Superfund Basic Research Program.

ATSDR and NIEHS both receive their funding from the U.S. Environmental Protection Agency (EPA) but are administered through HHS, so directives and funding do not always correlate in programming. In recent years, funding has been cut to both agencies. In spite of funding cuts, HHS

is developing a brownfields strategy and process that examine the capacity and coordination of issues at the local, regional, and state levels; improve education among local stakeholders; effectively communicate issues to the public; and address environmental justice concerns.

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U.S. Department of Housing and Urban
Development

The Department of Housing and Urban Development (HUD) has been one of the most active federal agencies in brownfields issues. HUD asserts that brownfields redevelopment strategies comprise integral methods to achieve urban economic revitalization and sustainable development. Thus, HUD has a number of programs aimed directly at or applied to brownfields renovation. In addition, HUD uses a network of regional and field offices with a broad base of professional expertise in community and economic development, transportation, public health, housing, and a number of other fields to extend technical assistance to local governments and community groups.

Financial Assistance

Community Development Block Grants

Community Development Block Grants (CDBGs) are largely administered to address brownfields issues in “entitlement communities” of urban and surrounding metropolitan areas. Through state governmental partnerships, HUD also allocates CDBG funding to smaller communities. In both cases, either the urban development authority or the state directs how funding will be specifically disseminated to accomplish site assessment, remediation, and redevelopment, as well as planning initiatives. However, activities must be commensurate with HUD mandates requiring that projects accommodate low- and moderate-income households, prevent or eliminate disadvantaged neighborhoods, or address imminent community redevelopment needs.

Section 108 Guaranteed Loans

Section 108 guaranteed loans act as a second-tier funding mechanism to recipients of CDBG financing and are intended to provide a greater impetus for private investment among redeveloping communities. Entitlement communities and states may use these secured loans to finance logistically and economically extensive redevelopment projects that often address multiple facets of community revitalization by committing an agreed portion of CDBG funding as collateral. Limitations

on Section 108 guaranteed loans require that funds be administered to address community needs as specified in CDBG financing.

Brownfields Economic Development Initiative
The Brownfields Economic Development Initiative (BEDI) is derived from HUD's Economic Development Initiative (EDI) to complement Section 108 funding. EDI provides access to emergency funding should a state or community development authority default on a Section 108 guaranteed loan or assuages liability concerns by being applied to specific components of a redevelopment project—as in a brownfields renovation. BEDI funding is adapted specifically to brownfields redevelopment projects in lieu of private investments that are increasingly difficult to acquire because of liability concerns.

Empowerment Zones and Enterprise Communities Initiative

The Empowerment Zones (EZ) and Enterprise Community (EC) initiative is jointly administered through HUD and USDA to create an emphasis on the revitalization of disadvantaged communities; HUD oversees EZ/EC programming in urban settings while USDA oversees rural EZ/ECs. An EZ or EC designation automatically qualifies a community for enhanced access to federal programming intended to promote economic redevelopment and neighborhood revitalization. In efforts to give distressed communities critical financing considerations, EZ or ECs receive numerous tax abatements and restructuring aimed at remediating and redeveloping brownfields sites, bolstering educational institutions and community centers, and encouraging commercial and residential development projects.

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Section 108 Loan Guarantee Program & Economic Development Initiative
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U.S. Department of the Interior

The Department of the Interior (DOI) manages the internal affairs of the United States by conducting scientific research on natural ecosystems, protecting and conserving federal land holdings, and enforcing regulations that pertain to both.

National Park Service

The National Park Service (NPS) is dedicated to the protection and restoration of natural resources, and appropriate education services relating to natural resource preservation. NPS fulfills its commitment to the Showcase Program by aiding local groups in undertaking conservation projects and by helping create sustainable participatory organizations on the local level.

NPS is involved in brownfields, primarily through its Rivers, Trails, and Conservation Assistance (RTCA) program and through the RTCA Groundwork Trust. The RTCA program, founded in 1988, is intended to help local groups undertake conservation projects, such as upgrading properties, creating trails, and protecting rivers or urban forests. The RTCA Groundwork Trust is an independent, nonprofit organization designed to aid communities in carrying out development and conservation efforts. The Groundwork Trust model began twenty years ago in the United Kingdom. Since then, program interest has spread to Europe, Japan, and—through the NPS—the United States. With a sustainable program in place, local groups can participate in redeveloping their communities.

A sustainable organization like the RTCA Groundwork Trust encourages brownfields pilots to participate in and benefit from opportunities beyond those provided by funding alone; the Groundwork Trust assures investors that communities are interested in supporting redevelopment. Businesses can work with residential communities to aid in development such as planting trees along roads. NPS and the RTCA Groundwork Trust serve as liaisons among various groups involved in brownfields projects, enhancing communication among stakeholders such as investors, community members, and brownfields staff members. Currently, NPS is looking for corporate partners to sponsor the Groundwork Trust in the United States.

Technical Assistance

Rivers, Trails, and Conservation Assistance Program

The RTCA program and the RTCA Groundwork Trust allow NPS to help local governments and organizations plan and undertake conservation projects, such as upgrading properties, creating trails and protecting rivers or urban forests, as well as providing consultation and education through community workshops. The RTCA Groundwork Trust is an independent, nonprofit organization designed to aid a community in carrying out development and conservation efforts.

Federal Lands-to-Parks Program

NPS extends its informational resources to state local governments in the pursuit of purchasing surplus federal land. NPS provides this service freely but requires that all facilities established on those lands—as well as all lands—be open to the general public and be operated and maintained to foster parks and recreational activities.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) is charged to conserve, protect, and enhance the quality of aquatic and land ecosystems in the United States. In so doing, USFWS provides better environmental quality for animal and plant wildlife habitats for the benefit of indigenous species as well as for the enjoyment of the American public. The majority of this task is accomplished through management of the 93 million acres of the National Wildlife Refuge System—consisting of 520 National Refuges and thousands of smaller special management areas (wetlands). Specific management duties of USFWS include enforcing wildlife laws, protecting endangered species, managing migratory birds, restoring nationally significant fisheries, conserving and restoring wildlife habitats, and cooperating with foreign governments in international conservation efforts.

To effectively regulate activities spread throughout the United States, USFWS relies on over 700 field units within seven geographic regions. In addition, because many targeted

habitats extend onto or lie within nonfederal lands, USFWS fosters many partnerships among government, public, and private institutions to encourage voluntary conservation efforts on private properties. Among other federal agencies, USFWS has worked with EPA in the Chesapeake Bay Program, the Gulf of Mexico Program, and the National Estuary Program. Other partnerships have included the NOAA in the Coastal Zone Management Program and National Marine Fisheries Service. In addition, USFWS has been involved in numerous channeling and dredging projects with USACE. Finally, nongovernmental partnerships have included the National Fish and Wildlife Foundation, the Nature Conservancy, and the National Audubon Society.

Concerning brownfields redevelopment, USFWS may apply its enforcement and restoration policies liberally. In other words, if a revitalization project can be linked to habitat restoration or protection and conservation of potentially affected ecosystems, then USFWS is likely to get involved. For example, under the Environmental Contaminants Program, USFWS assesses the effects of oil spills, point- and nonpoint-source pollution, and hazardous waste contamination. In addition, USFWS undertakes remedial efforts to living resources in Superfund and brownfields cleanups. In other cases, although USFWS may not be providing direct resources or funding to a project, it may be called upon for technical consultation where relevant.

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U.S. Department of Justice

The Department of Justice (DOJ) is the central agency dedicated to legal and justice issues. DOJ is ultimately responsible for national law enforcement and community policing efforts that include drug enforcement policies and the maintenance of federal prisons. The Office of Justice Programs (OJP) operates within DOJ and focuses on state and local justice issues. Concerning commitments to the Brownfields Initiative, DOJ influences are manifested mainly through two divisions of OJP: the Executive Office of Weed and Seed (EOWS) and the Community Relations Service (CRS).

Executive Office of Weed and Seed (EOWS)

The Weed and Seed Program within the Office of Justice Programs has been most active in brownfields redevelopment. Essentially, Weed and Seed is a strategy that “weeds out” violent crime, gang activity, drug use, and drug trafficking in targeted neighborhoods, and then “seeds” the area with social and economic revitalization programs. The Weed and Seed strategy recognizes the importance of linking federal, state, and local law enforcement programs with social services, the private sector, and community efforts to maximize the impact of existing programs and resources. Law enforcement activities constitute the majority of the “weed” portion of the program, while revitalization efforts that include prevention, intervention, and treatment services as well as neighborhood restoration constitute the “seed” element. Community policing acts to link both the weed and seed elements.

DOJ incorporates EOWS programming into brownfields pilots by offering up to \$50,000 in flexible funding to be used at the discretion of local communities for brownfields activities. Weed and Seed funds can be used in brownfields for any of the following activities: conducting education and outreach to inform and involve citizens and businesses; building partnerships among stakeholders; planning community involvement or environmental justice initiatives; assessing and evaluating potential reuse sites; renovating existing facilities; fostering local job development and training initiatives; and assisting not-for-profit entities in economic development projects.

Community Relations Service

The Community Relations Service (CRS) is dedicated to preventing and resolving perceived and actual discriminatory allegations in local communities. CRS acts mainly to address environmental justice concerns in communities and neighborhoods where brownfields redevelopment issues are prevalent. Moreover, CRS works to educate leaders of minority and impoverished communities about techniques to resolve disputes, as well as about the financial merits of brownfields revitalization efforts.

DOJ was not an original member of the Brownfields National Partnership when it was established in 1997. For that reason, DOJ did not make any contributions to the Action Agenda. DOJ has conducted regional meetings and a national training conference where EPA representatives have made presentations that discuss the link between Weed and Seed and brownfields. EOWS has also developed the Sustainable Safety and Community Enhancement Prototype Initiative that works to sustain economic development within distressed areas. The initiative brings jobs and money into the areas so that those most in need can benefit from the revitalization.

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U.S. Department of Labor

The Department of Labor (DOL) fosters, promotes, and develops the welfare of working people by improving working conditions and enhancing opportunities for profitable employment. DOL's role in the Brownfields National Partnership falls within the existing departmental mission: to provide job training and permanent job placement. In addition, DOL's basic job and life skills training complements other more environmentally focused training programs designed to help assess and clean up brownfields.

The brownfields program at DOL started in the Office of Policy and Research, where pilots and demonstration projects are launched. Early in 2000, the brownfields program moved to the Office of Adult Services of the Employment Training Administration, which has more field programs and more funding to extend to program initiatives. Together these programs ensure that the community residents most affected by brownfields will directly benefit from their redevelopment.

Technical Assistance

Job Training Partnership Act and Workforce Investment Act

DOL is working through the Job Training Partnership Act (JTPA) and the implementation of the Workforce Investment Act to promote stakeholder participation in the Showcase Program. The JTPA provides job-training services for economically disadvantaged adults, dislocated youth, and others who face significant employment barriers. The act seeks to move jobless individuals into permanent, self-sustaining employment. There are more than 600 JTPA designees nationwide, and the program has \$5 billion in annual funding, although none of that money is earmarked for brownfields.

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U.S. Department of Transportation

The Department of Transportation (DOT) seeks to advance national growth through efficient and flexible transportation and to protect the natural environment that is affected by DOT-funded transportation. DOT addresses brownfields in many of its agencies, including: the Federal Highway Administration; the Federal Transit Authority; the Federal Railroad Administration; the Maritime Administration; and the Office of the Secretary of Transportation.

DOT has adopted a new policy making brownfields cleanups an eligible activity for funding in transportation projects; previously, DOT policy avoided all brownfields situations. Now, DOT is encouraging the development of brownfields sites in conjunction with transportation projects and is examining all policies as they relate to brownfields. DOT is also working to address brownfields situations in transportation planning through new guidance and a series of technical assistance efforts. DOT is also distributing information to field offices, metropolitan planning organizations (MPOs), transportation associations, and State transportation agencies about brownfields redevelopment opportunities. Moreover, DOT and EPA are working together to explore liability issues as they relate to brownfields contamination. Finally, DOT is including brownfields as one focus area in its \$25 million (over five years) research program on transportation, land use, and sustainability issues.

Generally, DOT policies dictate that the federal office does not make transportation or land-use decisions. DOT also does not directly fund cities; rather it funds MPOs and state departments of transportation. In turn, those agencies allocate funding to individual jurisdictions and projects. Typically, MPOs and state departments of transportation work with local governments and regional groups to develop three-year and twenty-year planning documents that suggest local transportation developments. Accordingly, localities must contact their MPO or state department of transportation when addressing brownfields that contain or when they intend to renovate or construct transportation infrastructure.

Financial and Technical Assistance

Transportation Equity Act for the 21st Century
The Transportation Equity Act for the 21st Century (TEA-21) was enacted in June 1998 and authorizes highway, highway safety, transit, and other surface transportation programs for the next six years. In the TEA-21 Restoration Act, subsequent technical corrections have been incorporated; thus, the material presented here reflects the combined effects of both acts and the two are jointly referred to as TEA-21.

TEA-21 builds on the initiatives established in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), which was the last major authorizing legislation for surface transportation. TEA-21 combines the continuation and improvement of current programs with new initiatives to meet the challenges of improving safety as traffic continues to increase at record levels, of protecting and enhancing communities and the natural environment as transportation is provided, and of advancing America's economic growth and competitiveness domestically and internationally through efficient and flexible transportation.

Federal Highway Administration

The Federal Highway Administration (FHWA) contributes funding and technical assistance to programs designed to improve or develop interstate highways and affiliated roadways. In addition, FHWA supports infrastructure that accompanies highways, including intermodal service and recreation facilities, access roads, bridges, and bicycle and pedestrian infrastructure, as well as safety devices including guardrails, signs, and reflective road markers.

Technical Assistance

Transportation and Community and System Preservation Pilot Program

The Transportation and Community and System Preservation Pilot (TCSP) program allows DOT to apply direct technical assistance to state and local governments as well as MPOs so that brownfields development strategies become eligible for federal

funding measures. Usually, DOT provides training and guidance to local and state authorities when planning to improve or construct transportation infrastructure on or connecting to brownfields properties.

Financial Assistance

Surface Transportation Program

FWHA funding is administered to state, regional (MPOs), and local agencies through which it is allocated—through predetermined formulas—to various forms of roadway transportation planning and enhancement. Some uses for FHWA funding include alleviating traffic congestion, installing service and safety facilities, preserving or rehabilitating historical areas, acquiring land easements for scenic vistas, and mitigating run-off water pollution.

Congestion Mitigation and Air Quality Improvement Program

The Congestion Mitigation and Air Quality (CMAQ) Improvement Program provides DOT funding to innovative roadway planning strategies that include specific measures to reduce air pollution through traffic control measures. Examples of CMAQ programming include high occupancy vehicle (HOV) incentives and state or county emissions testing and certification for registered automobiles.

FHWA Field Organization

The field organization delivers program services to FHWA's partners and customers. This organization consists of resource centers, and divisions to state-level federal aid and federal lands highway divisions.

Resource Centers

FWHA resource centers support the state-level division offices in their primary role of program delivery to partners and customers by providing leadership on strategic initiatives; expert assistance on technical, process, and program issues; training; technology transfer; intermodal and interagency coordination; legal services; and expertise on civil rights. FHWA has four resource

centers, each serving a core constituency of federal-aid division offices and agency partners and customers in designated states. The term “core constituency” means that, for the purpose of providing administrative supervision to the division offices, the resource centers are assigned a designated group of states in their respective geographical areas. However, specific technical expertise in a given resource center may be shared with other resource centers and division offices throughout the country. The resource centers do not exercise program control over the division offices.

Federal-Aid Division Offices

These division offices provide front-line assistance in delivering federal-aid programs to partners and customers in highway transportation and safety services, including but not limited to planning and research, preliminary engineering, technology transfer, right-of-way, bridge, highway safety, traffic operations, environment, civil rights, design construction and maintenance, engineering coordination, highway beautification, and administration. Each of the fifty-two operating division offices (one in each state, the District of Columbia, and Puerto Rico) is located in the same city as the State department of transportation, usually the state capital. In addition, jointly with the FTA, the FHWA operates four metropolitan offices in Philadelphia, Pennsylvania; New York, New York; Chicago, Illinois; and Los Angeles, California, that are extensions of their respective division offices. Those offices provide assistance, guidance, and information regarding Federal transportation programs to local, state, and other federal agencies in those metropolitan areas.

Federal Lands Highway Divisions

The federal lands highway (FLH) divisions, which report to the Headquarters Federal Lands Highway Office; administer FLH programs (Forest Highways, Park Roads and Parkways, Public Lands, Refuge Roads, and Indian Reservation Roads), the Defense Access Roads Program, and the Emergency Relief Program on federally owned roads; provide engineering-related services to other Federal agencies, FHWA offices, and foreign

countries as directed; and carry out technology and training activities related to FLH projects.

Federal Railroad Administration

The Federal Railroad Administration (FRA) contributes funding and technical assistance to programs that encourage the development or rehabilitation of rail infrastructure and technologies. Although lacking specific brownfields programming, the FRA contributes planning resources to efforts to redevelop railways and related facilities.

Federal Transit Administration

The Federal Transit Administration (FTA) provides financial and technical assistance to local and regional transit initiatives. Since 1998, FTA has configured programming to incorporate brownfields redevelopment plans when appropriate. As many brownfields are located in densely populated areas—where mass transit programs are extensive—FTA has become an integral DOT contributor to redevelopment programs. FTA has also adopted policies that allow funding to be allocated to brownfields redevelopment efforts, as long as projects are related to transit development or enhancement. However, those funding measures are limited to site assessment and remediation activities. In addition, FTA encourages the development of joint projects and relationships among transit authorities and various private and public sector organizations as long as initiatives are physically and functionally oriented toward transit activities. FTA also fosters initiatives for transit development in rural areas and for programs that provide transit options in impoverished communities.

Financial Assistance

Urbanized Area Formula Grants

Urbanized Area Formula Grants establish a cost-sharing program between FTA and local transit authorities to fund transit initiatives in metropolitan areas of 50,000 or more residents. The required funding ratio is 80:20 between the FTA and local agencies.

Non-Urbanized Area Formula Grants

Non-urbanized Area Formula Grants administer FTA financial resources to state governments to develop or enhance transit programs in areas of less than 50,000 residents. The only requirement placed on the grants is that 5 percent to 15 percent of allocated funding be used to ensure that inter-city bus service needs are satisfied.

Grants for the Elderly and Persons with Disabilities

FTA provides funding measures to states to promote the development of transit modifications that assist elderly or physically challenged passengers. This funding can be allocated not only to transit authorities, but also to nonprofit and public research and development organizations.

Discretionary Capital Program

The Discretionary Capital Program allows FTA to disseminate funding to improve, enhance, or extend fixed guideway and bus services and facilities.

Metropolitan Planning Funds

Metropolitan planning funds are apportioned to state governments according to levels of urban population. State governments then transmit monies to MPOs in urban areas of 50,000 or more residents. To be eligible for metropolitan planning funds, MPOs must incorporate transit projects into approved Transportation Long-Range Plan and Transportation Improvement Program initiatives. The funds are then used to conduct studies of local and regional transit priorities including land use, economic and demographic trends, and expense projections.

Rural Transit Assistance Program

The Rural Transit Assistance Program (RTAP) encourages the development of both public and private transportation services in rural settings. RTAP funding emphasizes private sector involvement and safety measures in rural transit programs, as well as the use of rural transit mechanisms as a means of information dissemination.

State Planning and Research Program

The State Planning and Research Program fosters innovative pursuits conducted by state organizations to enhance urban, suburban, and rural transit

initiatives. Funding is appropriated on a formulaic basis and benefits research and development, technical assistance and training, and composition of statewide transit and safety initiatives.

Welfare-to-Work Legislation

Welfare-to-Work legislation allows FTA to provide supplementary funding and transit options to welfare recipients and other economically disadvantaged persons. The program provides access transit services to employment-related destinations including child care and medical facilities as well as schools and community centers.

Regional Job Access and Reverse Commute Grant Program

The Regional Job Access and Reverse Commute Grant Program encourages transportation planning that facilitates transit for welfare recipients and other economically disadvantaged persons to and from employment-related facilities. In addition, the program emphasizes the collaboration of community stakeholders—especially in impoverished neighborhoods—in metropolitan transit initiatives.

Transit-Community Initiatives

FTA uses several programs to encourage the proliferation of transit use in communities through land-use and urban design education. The Transit-Oriented Development and Livable Communities Initiatives urge local transit authorities not only to implement programming, but also to advertise the merits of transit options, including decreased automobile congestion, pedestrian accessibility, and efficient and safe transportation.

Federal-Aid Division Offices

See discussion of Federal-Aid Division Offices under Federal Highway Administration: Financial Assistance.

U.S. Maritime Administration

The U.S. Maritime Administration (MARAD) oversees the interests of U.S. domestic and international waterborne commerce. Two hallmark principles of MARAD are maintenance of a safe and environmentally sound maritime transportation system and promotion of national

security and economic growth through maritime endeavors.

MARAD is able to contribute directly to brownfields redevelopment efforts when a port facility is involved. A key function of MARAD is to provide technical assistance for port facilities concerning operating procedures, maintaining facilities, and regulating commercial traffic. MARAD also emphasizes the importance of shipyard revitalization and upkeep and has devised a number of programs to streamline operations in this industry. In addition, MARAD is making efforts to extend its authority to govern environmental compliance, planning, management, and implementation matters within U.S. ports. These programs, however, do not address brownfields remediation in the conventional sense, but rather they encourage financial stability and bureaucratic efficiency in shipbuilding industries.

Financial Assistance

Title XI Guarantees

Under a presidential mandate in 1993, MARAD was given the authority to administer Title XI guarantees to foreign clients and lenders supporting U.S. shipbuilding corporations. Those provisions ensure that investors will receive compensation for principal and interest accrued should a shipyard default on a project or loan. In this way, MARAD attempts to reinvest in a shipbuilding industry that has suffered in the latter decades of the twentieth century.

MARITECH

MARITECH is a joint effort between MARAD and the Defense Advanced Research Projects Agency, which subsidizes U.S. shipbuilding industries by matching funding made by private investors. The funding is then used to encourage competitiveness in a global shipbuilding industry through revisions of U.S. policies such as innovative technologies, marketing strategies, and communication practices.

National Maritime Resource and Education Center
MARAD sponsors the National Maritime Resource and Education Center (NMREC) whose mission is

to place U.S. shipping industries among international frontrunners through the revision and elimination of unnecessary bureaucracy. NMREC works to establish newer and more practical standards among domestic maritime shipping regulations.

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U.S. Department of the Treasury
 The Department of the Treasury (Treasury) is dedicated to promoting a prosperous and stable American and global economy and managing the government's finances. Concerning brownfields redevelopment, Treasury works to ensure the passage of the Brownfields Tax Incentive. In addition, Treasury educates and encourages the financial community about the Community Reinvestment Act.

Financial Assistance

Brownfields Tax Incentive

The Brownfields Tax Incentive is aimed at leveraging private sector investments for brownfields redevelopment projects. The incentive allows taxpayers to deduct or not to report environmental remediation expenditures in specified districts on capitalized accounts. Districts specified by Treasury include HUD EZ/EC communities; EPA Brownfields Demonstration Assessment Pilot communities; communities designated by U.S. Census Bureau tracts as having poverty rates of 20 percent or higher; or communities designated by U.S. Census Bureau tracts as having fewer than 2,000 residents, where more than 75 percent of lands are zoned for commercial or industrial use or are adjacent to communities with poverty rates of 20 percent or higher.

**Community Development Funding
 Institutions Fund**

The Community Development Funding Institutions (CDFI) fund expands the availability of credit, investment capital, and financial services in distressed urban, rural, and Native American communities by stimulating the creation and expansion of community development financial institutions, as well as by providing incentives to traditional banks and thrifts. CDFI investments work toward building private markets, creating healthy local economies, and empowering residents in blighted communities.

Bank Enterprise Award Program

The Bank Enterprise Award (BEA) program provides incentives for banks to invest in CDFIs and to increase lending and the provision of

financial services in distressed communities. The BEA program supports the community reinvestment efforts of those banks, many of which fund brownfields redevelopment.

Regulatory Assistance

Office of the Comptroller of the Currency
The Office of the Comptroller of the Currency (OCC) operates as a bank regulatory organization supervising some 60 percent of assets in the commercial banking system. OCC is one of five such regulators in the U.S. including the Federal Deposit Insurance Corporation, the Office of Thrift Supervision, the Federal Reserve, and the National Credit Union. As a regulator, OCC has no money to contribute to brownfields redevelopment programs, but it has been working to educate the financial community about lender liability.

OCC is interested in clarifying how banks can lend on properties with contamination. To this end, OCC works with other banking regulatory agencies to develop guidance about lender liability on contaminated properties. OCC advocates the use of environmental insurance to assuage concerns of regulatory lender liability in cases of environmental contamination on properties. As local governments begin to acquire contaminated properties and to redevelop brownfields, they may become interested in spending more time discussing liability and lending issues with banks. In addition, OCC provides consultative advice to bankers on strategies for community economic redevelopment, including welfare investment programs, programs permissible under the National Bank Act, and options for satisfying Community Reinvestment Act requirements.

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U.S. Department of Veterans Affairs

The Department of Veterans Affairs (VA) works to meet the health care and rehabilitation needs of veterans. VA has three divisions: the National Cemetery Administration, the Veterans Health Administration, and the Veterans Benefits Administration.

VA support of brownfields comes through the Compensated Work Therapy (CWT) Program. This program is a therapeutic employment program. In 1997, VA pledged \$250,000 for up to ten pilot programs to work with job-ready homeless and disabled veterans for cleanup and redevelopment opportunities at brownfields sites. The pledge has not yet been fulfilled because the agency must ratify memoranda of understanding (MOUs) to work with any other agencies. The VA language for MOUs is still being developed and has been delayed because of liability concerns. Once finished, it will go before the VA secretary for final approval. If approved, the MOUs will go to the other federal agencies that VA wished to form partnerships with to be ratified. The secretary of the VA will not allow any interagency actions until the MOUs are ratified.

Various levels of staff have been active in the brownfields effort, and the Veterans Benefits Administration has general working programs in place to manage liability issues. However, the training of veterans for brownfields-related programs has not occurred. Once an MOU between EPA and VA is completed, approved, and signed, the job-training efforts will focus on post-cleanup employment opportunities at brownfields sites.

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Compensated Work Therapy Program

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Federal Agencies and Commissions

Appalachian Regional Commission

The Appalachian Regional Commission (ARC) was established by Congress in 1965 to support economic and social development in the Appalachian region. ARC is a unique partnership composed of the governors of the 13 Appalachian states and a presidential appointee representing the federal government. Dedicated to bringing economic, social, and environmental sustainability to the Appalachian region, ARC strives to fulfill five basic goals: (1) providing education and workforce training; developing and maintaining physical infrastructure; enhancing civic capacity and leadership; promoting business development; and improving health care. Grassroots participation is provided through local development districts and multicounty organizations with boards composed of elected officials, businesspeople, and other local leaders.

Financial Incentives

Appalachian Highway Development System

The Appalachian Development Highway System (ADHS) is the backbone of ARC's cooperative regional approach to problem solving and of all its other development efforts. ADHS ensures that federal funding and programming initiatives accommodate the interstate and highway transportation needs in the Appalachian region. Since its implementation in 1965, ADHS has completed nearly 2,500 miles of a 3,000-mile highway initiative; the completion of the highway system remains a top priority of ADHS and ARC.

Distressed County Program

ARC has provided special funds for the region's poorest counties since 1983. Currently 114 counties qualify for distressed county status on the basis of low per capita income and high rates of poverty and unemployment. The distressed county program focuses on providing badly-needed public facilities, especially systems to furnish clean drinking water and sanitary waste disposal, and human resource projects such as literacy training. Under pre-1983 guidelines, most of these counties were too poor to qualify for federal aid for these facilities.

Local Development Districts

To ensure that funds are used effectively and efficiently, and to strengthen local participation, ARC works with the states to support a network of multicounty planning and development organizations, or local development districts (LDDs), throughout the Appalachian region. Seventy-one LDDs encompass all 406 counties in the ARC program and focus on convening citizens and identifying the priority needs of local communities. Based on these needs, LDDs work with their board members and other local citizens to develop plans to enhance local economic development initiatives, to target and meet the most pressing community needs, and to foster positive relationships among all members of the community; and to strengthen leadership practices and policies among local governments.

Entrepreneurship Initiative

The Entrepreneurship Initiative is a three-year, \$15 million program designed to provide communities with tools to assist entrepreneurs in starting and expanding local businesses. One major focus of all these activities is to leverage support from other institutions and to broaden and deepen the culture of entrepreneurship throughout the Appalachian region. Key activities include allowing entrepreneurs greater access to capital; educating and training entrepreneurs; encouraging sector-based strategies to maximize the economic strengths of local communities; and providing strategic support for business incubators. To date, ARC has leveraged approximately \$8.8 million and funded more than eighty entrepreneurship projects that are expected to create or expand over 1,200 small businesses throughout the Appalachian region. In addition, ARC has formed advisory committees for each of its major activities and has conducted more than a dozen conferences, meetings, and workshops to help homegrown businesses grow and prosper.

Empowerment Zones and Enterprise Communities

ARC uses the Empowerment Zone/Enterprise Community (EZ/EC) Program, administered by the U.S. Department of Agriculture and the Department of Housing and Urban Development, to

enhance economic development initiatives in the Appalachian region through tax incentives, performance grants, and loans. ARC helps to identify EZ/EC communities and assists local officials with application procedures and implementation of federal allocations. To date, sixteen Appalachian communities have received EZ or EC designation and have received mini-grants for technical assistance with the application process.

Business Development Revolving Loan Funds
Business Development Revolving Loan Funds are used by ARC to create and retain jobs throughout the Appalachian region. Revolving Loan Funds (RLFs) have long been used by ARC as an effective tool of economic development and the commission recently adopted new RLF guidelines to clarify operating policies, reduce paperwork, and improve cash management.

Technical Assistance

Over the years ARC has become a national resource for information on socioeconomic trends affecting the Appalachian region. Data and research on the Appalachian region are available on the ARC Web site at: <<http://www.arc.gov/research/resmain.htm>>.

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U.S. Environmental Protection Agency
 The U.S. Environmental Protection Agency (EPA) was established as an independent agency dedicated to the protection of human health and the surrounding natural environment. One of EPA's most prominent brownfields programs, the Brownfields Showcase Communities Initiative, serves as a tool to disseminate services, information, and funding to sanction state and local community stakeholders to actively participate in the development and synthesis of brownfields revitalization strategies. EPA is the lead agency within the Interagency Working Group, and, therefore, administers the Brownfields Showcase Communities Initiative and coordinates efforts among federal partners in the Brownfields National Partnership. In addition, EPA uses a breadth of resources from its regional offices and its partnerships with state environmental agencies, technical assistance, nongovernmental organizations (NGOs), and various nonprofit organizations to reach stakeholders throughout the nation.

To date, EPA has designated and launched 362 Brownfields Assessment Demonstration Pilots accompanied by grants that exceed \$69 million; the latest round of pilots included 54 communities announced in April 2000. In addition, thirty-seven EPA Brownfields Job Training and Development Demonstration Pilots are underway and ten additional communities will be announced in December 2000. In addition, EPA has awarded 104 Brownfields Cleanup Revolving Loans to numerous Brownfields Assessment Demonstration Pilot and Brownfields Showcase Communities. Finally, in addition to the initial sixteen Brownfields Showcase Communities, ten additional communities entered the initiative in October 2000.

Financial Assistance

Brownfields Assessment Demonstration Pilot
 EPA administers funding to communities with brownfields concerns through Brownfields Assessment Demonstration Pilots. Pilot funding is intended to assist financially disadvantaged communities in assessing and identifying brownfields, educating community members on

the status and significance of brownfields redevelopment, and in providing means of creating unique, local financing programs. Pilot communities receive up to \$200,000 over two years to fund the following activities:

- Environmental surveys prior to cleanup, including site assessments, site identification and characterization, site response, or remediation planning and design;
- Public outreach and education; and
- Alternative financing efforts such as tax incremental financing, revolving loan funds, or other creative applications.

Pilot funds may not be used to fund actual remediation efforts or to further development on remediated brownfields.

Brownfields Cleanup Revolving Loan Fund Pilot
 Brownfields Cleanup Revolving Loan Fund (BCRLF) Demonstration Pilots allow EPA to assist state and local governments with grants of up to \$500,000 for brownfields cleanup projects. The BCRLF program is authorized and funded under CERCLA section 104(d)(1) and is subject to appropriate CERCLA funding restrictions. In addition, EPA restricts grant eligibility to entities affiliated with pilot communities including political agencies with jurisdiction over designated brownfields sites. However, funding is not limited to those sites previously selected for or assessed under Pilot grants. Moreover, because BCRLF monies are awarded on a competitive basis, coalitions of multiple stakeholders are also permitted to apply for funding although only one entity may legally receive and distribute funds.

Brownfields Job Training and Development Demonstration Pilots

EPA Brownfields Job Training and Development Demonstration Pilots incorporate job-training measures into brownfields redevelopment projects. Training is intended not only to provide workers with the necessary skills to address immediate and future brownfields cleanup projects, but also to create additional employment opportunities in impoverished communities.

Similar to Assessment Pilots, Job Training and Development funding is administered in amounts up to \$200,000 over a two-year period.

Clean Air/Brownfields Partnership Pilot

In conjunction with the Economic Development Administration and the U.S. Conference of Mayors, EPA has developed the Clean Air/Brownfields Partnership Pilot. Funds are administered in amounts up to \$500,000 to improve air quality and stimulate economic revitalization in communities by:

- Assessing and identifying links among air quality, brownfields redevelopment, and economic development issues;
- Determining environmental and economic benefits of urban brownfields redevelopment versus outward greenfields development;
- Creating mechanisms for urban developers to mediate urban brownfields redevelopment by offsetting emissions among other polluting facilities and institutions; and
- Examining potential improved air-quality measures by implementing innovative technologies to remediate urban brownfields and to develop new facilities.

To date, this program remains in demonstration phases in Baltimore, Chicago, and Dallas.

Sustainable Development Challenge Grant

EPA encourages stakeholder collaboration toward sustainable community development with Sustainable Development Challenge Grants. Funds may be applied to proposed development projects that contain various sustainable practices including resource conservation, economy revitalization, infill development, and brownfields redevelopment. Eligible parties include local governments, tribal councils, educational institutions, and affiliated nonprofit organizations. Recipients are identified and designated for two levels of funding: (1) up to \$50,000 and (2) \$50,000 to \$250,000.

Solid Waste Management Assistance Grants

Although limited in funding resources, Solid Waste Management Assistance Grants affect brownfields by

benefiting communities that demonstrate innovative means of reducing solid waste generation, efficient recycling programming, and creative landfill practices and alternatives. The grants are awarded on a competitive basis, and state and local governments may receive up to \$50,000 to fund research and development of solid waste management technologies and related job-training programs.

Clean Water State Revolving Loan Fund

EPA uses this program derived from the Clean Water Act to provide funds for state revolving loan funds (SRFs) for various clean water projects. Brownfields become eligible for such funding because EPA dictates that SRF funding may be applied to nonpoint-source water quality issues as long as the sites are included in the state's nonpoint-source management plan. In addition, any designated Brownfield Showcase and Pilot are automatically eligible for Clean Water SRFs. Clean Water SRFs are low-interest loans; therefore, states must demonstrate an established means of repayment. Specific allocations of Clean Water SRFs are determined by state governments and include a range of activities such as site assessments; isolation, extraction, treatment, and disposal of contaminants; capping abandoned wells and aqueducts; reconstructing wetlands; and development of innovative treatment technologies.

Environmental Education

EPA accepts applications for and awards funding up to \$25,000 to local and state government entities, colleges and universities, and independent or special interest organizations that wish to create and disseminate educational media concerning environmental remediation, including brownfields.

Technical Assistance

Targeted Site Assessments

EPA provides personnel and tools to conduct site assessments to regional, state, and local governments to detect potential contaminants on brownfields sites. In such cases, no funding is provided and services are intended for communities that are not receiving other forms of Brownfields Pilot funding.

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Executive Office of the President
The White House offices and agencies make up the Executive Office of the President (EOP). These offices help develop and implement the policy and programs of the President.

Council on Environmental Quality

The Council on Environmental Quality (CEQ) was established by Congress within the EOP with passage of the National Environmental Policy Act of 1969. CEQ coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives. The Council's Chair, who is appointed by the President with the advice and consent of the Senate, serves as the principal environmental policy adviser to the President and Vice President. In addition, CEQ reports annually to the President on the state of the environment; oversees federal agency implementation of the environmental impact assessment process; and acts as a referee when agencies disagree over the adequacy of such assessments.

Office of Management and Budget

The Office of Management and Budget (OMB) leads development of governmentwide policy to assure that grants are managed properly and that federal funds are spent in accordance with applicable laws and regulations. Thus, by working cooperatively with grant making agencies and the grantee community, OMB becomes involved in many federal funding initiatives including brownfields redevelopment.

President's Council on Sustainable Development

The President's Council on Sustainable Development (PCSD) was established by President Clinton in June 1993 to advise him on sustainable development and develop initiatives devoted to improving the economic stability and human and environmental health nationwide. To accomplish those goals PCSD strives to forge consensus on policy by bringing together diverse interests to identify and develop innovative economic, environmental and social policies and strategies; demonstrate implementation of policy that fosters sustainable development by working with diverse interests to

identify and demonstrate implementation of sustainable development; evaluate and report on progress by recommending national, community, and enterprise level frameworks for tracking sustainable development; and distribute information about it the word out about sustainable development in general. Although PCSD ended operations in June 1999, information on basic issues related to sustainable development and a list of accomplishments is available on the council's Web site at: <<http://www.whitehouse.gov/PCSD>>.

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Federal Deposit Insurance Corporation
The Federal Deposit Insurance Corporation (FDIC) is primarily responsible for maintaining the stability of the nation's financial system, as well as for protecting up to \$100,000 of each depositor's funds at FDIC-insured financial institutions. However, FDIC is also involved in a number of lesser-known activities, including managing brownfields. Currently, as a member of the Brownfields National Partnership, FDIC is performing outreach to educate communities about redevelopment financing issues, facilitating discussions between borrowers and lenders, and promoting the existing programs and services.

Current objectives through the Brownfields National Partnership are to educate communities about services and to promote the FDIC's will and ability to work with communities on redevelopment. FDIC also helps communities and local governments by bringing together borrowers and lenders for roundtable discussions. In an effort to prevent perceived risks from impeding loan approvals, FDIC educates lenders on the actual risks involved in financing brownfields projects. The community affairs officers in each FDIC regional office are dedicated to linking communities to these resources.

Technical Assistance

Site Assessments and Environmental Conditions Web Site

FDIC prepares sites for sale by conducting Phase I and sometimes Phase II environmental site assessments. If a potential or known environmental hazard is identified on a property, FDIC designates such properties on a Web site. Environmental assessments are disclosed to prospective buyers when such properties are made available for sale. The sites are then remediated and sold or developed for profit.

Division of Compliance and Consumer Affairs
The Division of Compliance and Consumer Affairs works with lenders and the public to revitalize communities, to serve as an intermediary to further develop lending objectives, and to educate lenders and the public about brownfields-related finance programs such as the Community Reinvestment Act.

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Federal Housing Finance Board

The Federal Housing Finance Board (FHFB) is involved in brownfields redevelopment through its role as regulator of the national Federal Home Loan Bank (FHLBank) system. FHFB acts as a wholesale lender, lending money to twelve regional FHLBanks at an interest rate just slightly higher than Treasury rates. This process enables FHLBanks to supply funds to their local member banks for financing loans at interest rates lower than those of non-FHLBank members.

FHFB also represents the private sector banking role in the Brownfields National Partnership. While local governments and agencies spearhead many brownfields programs, the private sector also has a significant role in the brownfields redevelopment process. FHFB works with other federal agencies and federal partners to make programs and resources applicable and tangible for the private sector as well as the public sector.

In addition to offering financial assistance programs, FHFB demonstrates its commitment to brownfields by educating member banks about brownfields redevelopment. Even with all of the regulatory provisions in place that protect lenders from liability, many banks are reluctant to lend money for brownfields projects. Through its participation in the Brownfields National Partnership, FHFB continues to educate FHLBanks about brownfields and liability issues. Outreach to the many members of the FHLBank system is a challenge because of the number of people involved in the system. However, FHFB holds regional conferences and forms strategic alliances as ways to reach its members. In addition, FHFB works with regional chambers of commerce to promote and educate about brownfields redevelopment and the role that FHLBanks can play to support local redevelopment efforts.

Financial Assistance

Community Investment Program

Brownfields projects are also eligible for financing through the FHFB Community Investment Program (CIP). CIP finances commercial and economic development activities benefiting low- and moderate-income neighborhoods through community oriented mortgage lending.

Cash Investment Cash Advance Program

FHFB administers Community Investment Cash Advance (CICA) funds to encourage economic redevelopment in overlooked urban and rural communities. To be eligible for CICA funding, planning strategies must include properties that qualify for the Brownfields Tax Incentive program of the U.S. Department of the Treasury.

Federal Home Loan Bank Standby Letters of Credit

Federal Home Loan Bank Standby Letters of Credit (LOC) allow FHFB to create lending margins for FHLBanks when considering the financing of brownfields-related redevelopment projects. In this manner, LOC assurances mitigate potential financial risks to lending institutions that often accompany brownfields sites.

Affordable Housing Program

The Affordable Housing Program (AHP) allows FHFB to subsidize housing projects in disadvantaged communities through members of the FHLBank system. Through AHP loans and advances, FHFB encourages the development of creative programming and provides direct subsidies to lending institutions engaged in projects intended to create long-term, owner-occupied, affordable housing in low- and moderate-income communities.

Purchasing Taxable Bonds

FHLBanks promote local redevelopment of brownfields by purchasing taxable bonds and by allocating accrued proceeds to revitalization projects. In addition, FHLBanks may offer advances to local banks to purchase the same bonds intended for use in brownfields redevelopment projects.

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Office of Housing Finance
1777 F Street, NW
Washington, DC 20006

Mr. Doug Ryan
Federal Housing Finance Board
Office of Housing Finance
1777 F Street, NW
Washington, DC 20006

Community Investment Program

Ms. Jennifer Salamon
Federal Housing Finance Board
Compliance Assistance Division, Office of Policy
1777 F Street, NW
Washington, DC 20006

Affordable Housing Program

Mr. Richard Tucker
Federal Housing Finance Board
Deputy Director
Compliance Assistance Division, Office of Policy
1777 F Street, NW
Washington, DC 20006

U.S. General Services Administration
The U.S. General Services Administration (GSA) operates as one of three independent federal management offices and provides managed space, supplies, services, and solutions to federal departments and agencies. Within GSA, three departments accomplish information, logistic, and land-use tasks. Information Technology maintains federal telecommuting and child care services while the Federal Supply Service oversees federal vehicle fleets and personal property issues. The Public Building Service is involved in all facets of real estate concerns surrounding federally owned or leased properties. PBS, therefore, is often the largest service to contribute to the Showcase Communities Project.

PBS manages all building, developing, and leasing policies on federal landholdings, including property management and disposal as well as construction and maintenance of facilities therein. PBS policies include an emphasis on maximizing the potential use and value of federal lands, especially those that lie within or near established communities. Furthermore, PBS reviews and designates federal lands that are underused as well as keeping track of such properties through geographic information system databases. Therefore, PBS recognizes the importance of brownfields remediation and reuse not only to decrease blighted, underused properties, but also to improve the quality of life in affected communities.

Technical Assistance

GSA reviews and identifies underused federal properties that could be eligible for brownfields redevelopment programming. Through this commitment, GSA has surpassed its original goal of identifying such properties in twelve areas by expanding its search to thirty-eight project locations. In addition, GSA has incorporated geographic, demographic, economic, and environmental mental information into site profiles in a GIS database to assist local, state, regional, and federal entities to determine the best uses for available properties.

GSA formed a National Team of Specialists to share technical and real estate expertise pertaining to brownfields redevelopment of federal land

holdings with local government officials. The team is composed of seven regional offices that convene of an annual basis to discuss the latest issues and practices related to brownfields redevelopment.

Financial Assistance

GSA committed \$1 million to fund environmental site assessments on federally held brownfields properties.

Contact Information

U.S. General Services Administration

<http://www.gsa.gov>

GSA Building
18th and F Streets, NW
Washington, DC 20405

Mr. John Q. Martin
U.S. General Services Administration
Office of Property Disposal
GSA Building
18th and F Streets, NW, Room 4340
Washington, DC 20405

U.S. Small Business Administration

The U.S. Small Business Administration (SBA) is an independent federal agency charged to aid, counsel, and protect the interests of small businesses throughout the nation. SBA offers financial management and technical and government-contracting assistance to current and prospective small business owners. SBA also has specialized programs to target minority- and women-owned small businesses.

Under the influence of brownfields redevelopment initiatives, SBA has changed its loan policies to accommodate the promotion of small business development on contaminated and remediated properties. In December 1997, SBA revised its procedures to give field offices great latitude in evaluating the risk to collateral property from environmental contamination. The revision provided guidance to field offices to determine whether the risk was manageable so that financial assistance could be provided. Even though SBA has no specific funds for brownfields remediation, businesses on brownfields are now eligible for all SBA programs and assistance.

Financial Assistance

Loan Guarantee Program

SBA provides guaranteed loans to small businesses to permit them to start or expand operations. The loans in this program are primarily focused on leveraging support from local commercial banks as well as other private and public lending institutions.

Minority Enterprise Development Program

SBA provides specific programming designed to teach minority small business owners effective managerial and marketing skills. Eligible ventures include any business that is 51 percent owned by a member or members of a racial or ethnic minority group that meets SBA 7(a) eligibility standards; or that is a for-profit, non-religious institution.

Technical Assistance

Small Business Development Centers
SBA sponsors fifty-seven Small Business Development Centers (SBDCs) around the United States that have authority to provide technical assistance on behalf of SBA. SBDCs are joint ventures among local, state, and federal governments as well as private sector and educational institutions. SBA has been working through its SBDCs to distribute brownfields information.

Contact Information

U.S. Small Business Administration
<http://www.sba.gov>
409 3rd Street, NW
Washington, DC 20416
Ms. Joan Bready
U.S. Small Business Administration
409 3rd Street, SW, 8th Floor
Washington, DC 20416

APPENDIX II

REGIONAL AGENCY AND PROGRAMMING
SUMMARY AND CONTACTS

Numerous programs dedicated to brownfields redevelopment exist throughout the nation. In some instances, regional initiatives for sustainable growth, environmental stewardship, public health, or urban revitalization may incorporate brownfields redevelopment projects. In other cases, a large geographic partnership may be composed of federal, state, and local government agencies (and appropriate regional offices), as well as various public and private sector entities. Finally, specific regional offices within federal and state governmental agencies may be dedicated to or involved in brownfields redevelopment.

The following programs operate in multijurisdictional contexts and involve multiple levels of stakeholders. In addition to specific regional environmental interests (e.g., the preservation of the water quality of the Chesapeake Bay), regional development concerns involving brownfields reuse can be addressed through these partnerships or individual agencies. In many cases, information may be obtained through a headquarters contact or Web site (especially when federal agencies are involved). Also, intrastate regional development guidance can often be obtained through local, regional, or state planning authorities.

U.S. Department of Agriculture

USDA has Service Centers in nearly every county in the United States. For more information, check local and state listings and resources.

U.S. Department Of Commerce

Economic Development Administration (EDA)

Atlanta Region

States Served: AL, FL, GA, KY, MS, NC, SC, TN

William J. Day, Jr.

U.S. Department of Commerce

Economic Development Administration

Regional Director

401 West Peachtree Street, NW

Suite 1820

Atlanta, GA 30308-3510

Austin Region

States Served: AR, LA, NM, OK, TX

Pedro R. Garza

U.S. Department of Commerce

Economic Development Administration

Regional Director

903 San Jacinto Boulevard

Suite 121

Austin, TX 78701-2450

Chicago Region

States Served: IL, IN, MI, MN, OH, WI

C. Robert Sawyer

U.S. Department of Commerce

Economic Development Administration

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Chicago, IL 60606-7204

Denver Region

States Served: CO, IA, KS, MO, NE, ND, SD, UT, WY

Anthony J. Preite

U.S. Department of Commerce

Economic Development Administration

Regional Director

1244 Speer Boulevard

Room 670

Denver, CO 80204

Philadelphia Region

States Served: CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, PR, RI, VT, VA, VI, WV

Paul M. Raetsch
U.S. Department of Commerce
Economic Development Administration
Regional Director
Curtis Center, Suite 140 South
Independence Square West
Philadelphia, PA, 19106

Seattle Region

States Served: AK, AS, AZ, CA, MP, GU, HI, ID, NV, OR, WA, FM, MH, PW

A. Leonard Smith
Regional Director
U.S. Department of Commerce
Economic Development Administration
Jackson Federal Building
915 Second Avenue
Suite 1856
Seattle, WA 98174

National Oceanic and Atmospheric
Administration (NOAA)

Central Administrative Support Center (CASC)

Martha R. McBroome
Director, CASC
U.S. Department of Commerce
National Oceanic and Atmospheric
Administration
Central Administrative Support Center
Office of the Director
Richard Bolling Federal Building
601 E. 12th Street, Room 1736
Kansas City, MO 64106-2808

Eastern Administrative Support Center (EASC)

Gerald R. Lucas
Director, EASC
U.S. Department of Commerce
National Oceanic and Atmospheric
Administration
Central Administrative Support Center
Office of the Director
200 World Trade Center
Norfolk, VA 23510-1624

Mountain Administrative Support Center (MASC)

Dennis R. Connors
Director, MASC
U.S. Department of Commerce
National Oceanic and Atmospheric
Administration
Central Administrative Support Center
Office of the Director
325 Broadway
Boulder, CO 80303-3328

Western Administrative Support Center (WASC)

Kelly C. Sandy
Director, WASC
U.S. Department of Commerce
National Oceanic and Atmospheric
Administration
Central Administrative Support Center
Office of the Director
7600 Sand Point Way, NE
BIN C15700
Seattle, WA 98115-0070

**National Marine Fisheries Service
and Science Centers****Alaska Region**

State Served: AK
Alaska Region
P.O. Box 21668
Juneau, AK 99802-1668
Alaska Fisheries Science Center
7600 Sand Point Way N.E.
Bin C15700, Building 4
Seattle, WA 98115-0070

Northeast Region

States Served: CT, DE, IL, IN, ME, MD, MA, MI, MN, NC, NH, NJ, NY, OH, PA, RI, VA, VT, WI, WV.
U.S. Department of Commerce
National Oceanic and Atmospheric
Administration
National Marine Fisheries
Northeast Regional Office
One Blackburn Drive
Gloucester, MA 01930

Northwest Region**States Served: OR, WA**

U.S. Department of Commerce
 National Oceanic and Atmospheric
 Administration
 National Marine Fisheries Service
 Northeast Fisheries Science Center
 166 Water Street
 Woods Hole, MA 02543-1026

U.S. Department of Commerce
 National Oceanic and Atmospheric
 Administration
 National Marine Fisheries Service
 Northwest Regional Office
 7600 Sand Point Way N.E.
 Seattle, WA 98115-0070

U.S. Department of Commerce
 National Oceanic and Atmospheric
 Administration
 National Marine Fisheries Service
 Northwest Fisheries Science Center
 2725 Montlake Boulevard East
 Seattle, WA 98112

Southeast Region**States Served:**

U.S. Department of Commerce
 National Oceanic and Atmospheric
 Administration
 National Marine Fisheries Service
 Southeast Regional Office
 9721 Executive Center Drive North
 St. Petersburg, FL 33702

U.S. Department of Commerce
 National Oceanic and Atmospheric
 Administration
 National Marine Fisheries Service
 Southeast Fisheries Science Center
 75 Virginia Beach Drive
 Miami, Florida 33149

Southwest Region**States Served: AZ, CA, HI, NM**

U.S. Department of Commerce
 National Oceanic and Atmospheric
 Administration
 National Marine Fisheries Service
 Southwest Regional Office
 501 West Ocean Boulevard, Suite 4200
 Long Beach, CA 90802-4213

U.S. Department of Commerce
 National Oceanic and Atmospheric
 Administration
 National Marine Fisheries Service
 Southwest Fisheries Science Center
 P.O. Box 271
 La Jolla, CA 92038-0271

U.S. Department of Defense

U.S. Army Corps of Engineers

Great Lakes and Ohio River Division (CELRD)

Great Lakes Regional Office (CELRD-GL)

U.S. Department of Defense
U.S. Army Corps of Engineers
Great Lakes and Ohio River Division
Great Lakes Regional Office (CELRD-GL)
River Center, 12th Floor
111 North Canal Street
Chicago, Illinois 60606-7205

Ohio River Regional Office (CELRD-OR)

U.S. Department of Defense
U.S. Army Corps of Engineers
Great Lakes and Ohio River Division
Ohio River Regional Office (CELRD-OR)
P. O. Box 1159
550 Main Street
Cincinnati, OH 45201-1159

Mississippi Valley Division (CEMVD)

U.S. Department of Defense
U.S. Army Corps of Engineers
Mississippi Valley Division (CEMVD)
1400 Walnut St
Vicksburg, MS

North Atlantic Division (CENAD)

U.S. Department of Defense
U.S. Army Corps of Engineers
North Atlantic Division (CENAD)
Building 301
Fort Hamilton Military Community
Brooklyn, NY 11252-6700

Northwestern Division (CENWD)

Omaha District Office

U.S. Department of Defense
U.S. Army Corps of Engineers
Northwestern Division (CENWD)
Omaha District Office
12565 W. Center Road
Omaha, Nebraska 68144-3869

Portland District Office

U.S. Department of Defense
U.S. Army Corps of Engineers
Northwestern Division (CENWD)
Portland District Office
220 NW 8th Ave
Portland, Oregon 97209

Pacific Ocean Division (CEPOD)

U.S. Department of Defense
U.S. Army Corps of Engineers
Pacific Ocean Division (CEPOD)
Building 230
Fort Shafter, Hawaii 96858-5440

South Atlantic Division (CESAD)

U.S. Department of Defense
U.S. Army Corps of Engineers
South Atlantic Division (CESAD)
60 Forsyth St. SW, Room 9M15
Atlanta, Georgia 30303-8801

South Pacific Division (CESPD)

U.S. Department of Defense
U.S. Army Corps of Engineers
South Pacific Division (CESPD)
333 Market Street
San Francisco, CA 94105

Southwestern Division (CESWD)

U.S. Department of Defense
U.S. Army Corps of Engineers
Southwestern Division (CESWD)
1100 Commerce Street, Suite 8B15
Dallas, Texas 75242

U.S. Department of Education

Region I

Boston Office**States Served: CT, MA, ME, NH, RI, VT**

Thomas J. Hibino

U.S. Department of Education

Region I

Director

540 McCormack Courthouse, Room 222

Boston, MA 02109-4557

Region II

New York City Office**States Served: NJ, NY, PR, VI**

Helen N. Whitney

U.S. Department of Education

Region II

Director

75 Park Place, 12th Floor

New York, NY 10007

Region III

Philadelphia Office**States Served: DE, MD, KY, PA, WV**

Brenda Wolff

U.S. Department of Education

Region III

Director

The Wanamaker Building

100 Penn Square East, Suite 505

Room 6300

Philadelphia, PA 19107

District of Columbia Office**States Served: NC, VA, DC**

Jean Peelen

U.S. Department of Education

Region III

Director

330 C Street, SW

Washington, DC 20202

Region IV

Atlanta Office**States Served: AL, FL, GA, KY, MI, NC, SC, TN**

Yolanda Watson-Moore

U.S. Department of Education

Region IV

Public Affairs Director

Sam Nunn Atlanta Federal Center

61 Forsyth Street, SW

Suite 19T40

Atlanta, GA 30303

Region V

Chicago Office**States Served: IL, IN, MI, MN, OH, WI**

Linda A. McGovern

U.S. Department of Education

Region V

Director, Office of Civil Rights

111 North Canal Street, Room 1094

Chicago, IL 60606-7204

Cleveland Office**States Served: MI, OH**

Harry Orris

U.S. Department of Education

Region V

Director, Office for Civil Rights

600 Superior Avenue, East

Room 750

Cleveland, OH 44114

Region VI

Dallas Office**States Served: AR, LA, MS, OK, TX**

Taylor D. August

U.S. Department of Education

Region VI

Director

1999 Bryan Street

Dallas, TX 75201-6817

Region VII

Kansas City Office**States Served: IA, KS, MO, NE**

Angela Bennett
 U.S. Department of Education
 Region VII
 Director, Office of Civil Rights
 10220 N. Executive Hills Blvd, 8th Floor
 Kansas City, MO 64153-1367

Region VIII

Denver Office**States Served: CO, MO, ND, SD, UT, WY**

Lillian Gutierrez
 U.S. Department of Education
 Region VIII
 Director
 Federal Building
 1244 Speer Blvd, Suite 310
 Denver, CO 80204-3582

Region IX

San Francisco Office**States Served: AZ, CA, HI, NV, AS, GU, Trust Territory of the Pacific Islands**

Stefan Rosenzweig
 U.S. Department of Education
 Region IX
 Director
 50 United Nations Plaza, Room 239
 San Francisco, CA 94102-4987

Region X

Seattle Office**State Served: AK, ID, OR, WA**

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 U.S. Department of Education
 Region X
 Regional School-to-Work Specialist
 Jackson Federal Building
 915 Second Avenue
 Seattle, WA 98174-1099

U.S. Department of Energy

Atlanta Regional Office**States Served: AL, FL, GA, KY, MS, NC, SC, TN**

Steve Hortin
 U.S. Department of Energy
 Atlanta Regional Office
 Project Manager, Community Initiatives
 730 Peachtree, NE
 Atlanta, GA 30308

Boston Regional Office**States Served: CT, MA, ME, NH, NY, RI, VT**

U.S. Department of Energy
 Boston Regional Office
 JFK Federal Building, Suite 675
 Boston, MA 02203

Chicago Regional Office**States Served: IL, IA, IN, MI, MN, MO, OH, WI**

Juli Pollitt
 U.S. Department of Energy
 Chicago Regional Office
 Market Opportunities Team Leader
 Rebuild America, Community Programs
 One South Wacker Avenue
 Suite 2380
 Chicago, IL 60606-4616

Denver Regional Office**States Served: CO, KS, LA, MO, NE, NM, ND, OK, SD, TX, UT, WY**

U.S. Department of Energy
 Denver Regional Office
 1617 Cole Boulevard
 Golden, CO 80401

Philadelphia Regional Office**States Served: DE, MD, PA, NJ, VA, WV, DC**

U.S. Department of Energy
 Philadelphia Regional Office
 1880 John F. Kennedy Boulevard, Suite 501
 Philadelphia, PA 19103

Seattle Regional Office**States Served: AK, AS, AZ, CA, GU, HI, ID, MP,
NV, PW, OR, WA**

Paul Johnson

U.S. Department of Education

Seattle Regional Office

Rebuild America, Community Initiatives

800 Fifth Avenue, Suite 3950

Seattle, WA 98104-3122

U.S. Department of Health and
Human ServicesAgency for Toxic Substances and
Disease Registry**Region I****States Served: CT, ME, MA, NH, RI, VT**

USEPA—NE

Agency for Toxic Substances and Disease Registry

Region I

1 Congress Street

Suite 1100 (HBT)

Boston, MA 02114-2023

Region II**States Served: NJ, NY, PR, VI**

New York Office

Agency for Toxic Substances and Disease Registry

EPA Region II

290 Broadway, North

18th Floor

New York, NY 10007

Edison Office

Agency for Toxic Substances and Disease Registry

2890 Woodbridge Avenue

Building 209

Edison, NJ 08837

Region III**States Served: DE, DC, MD, PA, VA, WV**

Agency for Toxic Substances and Disease Registry

US EPA Region III

1650 Arch Street (3HS00)

Philadelphia, PA 19103-2029

Region IV**States Served: AB, FL, GA, KY, MS, NC, SC, TN**

EPA—Waste

Attn: Agency for Toxic Substances and Disease
Registry

Atlanta Federal Center

61 Forsyth Street, SW

10th Floor

Atlanta, GA 30303

Region V**States Served: IL, IN, MI, MN, OH, WI**

Agency for Toxic Substances and Disease Registry
 EPA Region V
 77 West Jackson Boulevard
 Room 413, M/S 4J
 Chicago, IL 60604

Region VI**States Served: AR, LA, NM, OK, TX**

Agency for Toxic Substances and Disease Registry
 Region VI
 EPA Region 6 (6SF-L)
 1445 Ross Avenue
 Dallas, TX 75202

Region VII**States Served: IA, KS, MO, NE**

Agency for Toxic Substances and Disease Registry
 Region VII
 5th and State Avenue, Suite 182
 Kansas City, KS 66101

Region VIII**States Served: CO, MT, ND, SD, UT, WY**

Agency for Toxic Substances and Disease Registry
 Region VIII
 8ATSDR
 999 18th St., Suite 500
 Denver, CO 80202-2466

Region IX**States Served: AS, AZ, CA, GU, HI, NV, Trust Territories of the Pacific Islands, MH, PW, Ponape**

Agency for Toxic Substances and Disease Registry
 Region IX
 75 Hawthorne Street, Room 100
 Mail Code HHS-1
 San Francisco, CA 94105

Region X**States Served: AK, ID, OR, WA**

Agency for Toxic Substances and Disease Registry
 Region X
 1200 6th Avenue, Suite 1930
 Seattle, WA 98101

U.S. Department Of Housing and
 Urban Development

New England Region

Massachusetts State Office

Mary Lou Crane
 Secretary's Representative
 HUD-Boston Office
 O'Neil Federal Building
 10 Causeway Street, Room 375
 Boston, MA 02222-1092

Connecticut State Office

Raymond Jordan
 Senior Community Builder
 HUD-Hartford Office
 One Corporate Center
 Hartford, CT 06103-3220

Maine State Office

Loren Cole
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 202 Harlow Street-Chase Building, Suite 101
 Bangor, ME 04402-1384

New Hampshire State Office

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 Norris Cotton Federal Building
 275 Chestnut Street
 Manchester, NH 03103-2487

Rhode Island State Office

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 10 Weybosset Street, Sixth Floor
 Providence, RI 02903-2808

Vermont State Office

Michael McNamara
 Senior Community Builder
 HUD-Burlington Office
 Room 237-Federal Building
 11 Elmwood Avenue
 Burlington, VT 05401-0879

New York/New Jersey Region

New York State Offices

New York City Office
 Charlie King
 Secretary's Representative
 HUD-New York Office
 26 Federal Plaza, Suite 3541
 New York, NY 10278-0068

Albany Area Office
 Robert Scofield
 Senior Community Builder
 HUD-Albany Office
 52 Corporate Circle
 Albany, NY 12203-5121

Buffalo Area Office
 Michele Bernier (Acting)
 Senior Community Builder
 HUD-Buffalo Office
 Lafayette Court, 5th Floor
 465 Main Street
 Buffalo, NY 14203-1780

Syracuse Area Office
 Jim Murphy
 HUD-Syracuse Office
 128 Jefferson Street
 Syracuse, NY 13202

New Jersey State Offices

Newark Office
 Diane Johnson
 Senior Community Builder
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Camden Area Office
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Mid-Atlantic Region

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 Secretary's Representative
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 Pittsburgh, PA 15222-2515

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Maryland State Office

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 Baltimore, MD 21201-2505

Virginia State Office

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Washington, D.C. Office

Lorraine Richardson (Acting)
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West Virginia State Office

Fred Roncaglione
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Southeast/Caribbean Region

Georgia State Office

Davey Gibson
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40 Marietta Street-Five Points Plaza
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Alabama State Office

Heager Hill
Senior Community Builder
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600 Beacon Parkway West, Room. 300
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Caribbean Office

Michael Colon
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Kentucky State Office

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Florida State Offices

Miami Area Office
Jose Cintron
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Jacksonville Area Office

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Orlando Area Office

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Tampa Area Office

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Mississippi State Office

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McCoy Federal Building
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Jackson, MS 39269-1096

North Carolina State Office

James Blackmon
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HUD-Greensboro Office
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South Carolina State Office

Dudley Gregorie
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Columbia, SC 29201-2480

Tennessee State Offices

Nashville Area Office
Brenda Cleaver
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Nashville, TN 37228-1803

Knoxville Area Office

Mark Brezina
Senior Community Builder
HUD-Knoxville Office
710 Locust Street, SW
Knoxville, TN 37902-2526

Memphis Area Office
 Benjamin Davis
 Senior Community Builder
 HUD-Memphis Office
 200 Jefferson Avenue, Suite 1200
 Memphis, TN 38103-2335

Midwest Region

Illinois State Offices

Chicago Area Office
 Rosanna Marquez
 Secretary's Representative
 Ralph Metcalfe Federal Building
 77 West Jackson Boulevard
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Springfield Area Office
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Indiana State Office

William K. Fattic
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 Indianapolis, IN 46204-2526

Michigan State Offices

Detroit Area Office
 Regina F. Solomon
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 HUD-Detroit Office
 477 Michigan Avenue
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Flint Area Office
 James Sutton
 Senior Community Builder
 HUD-Flint Office
 605 North Saginaw Street, Room 200
 Flint, MI 48502-1953

Grand Rapids Area Office
 Louis M. Berra
 Senior Community Builder
 HUD-Grand Rapids Office
 Trade Center Building
 50 Louis Street, N.W.
 Grand Rapids, MI 49503-2648

Minnesota State Office

Thomas Feeney
 Senior Community Builder
 HUD-Minneapolis Office
 220 Second Street, South
 Minneapolis, MN 55401-2195

Ohio State Offices

Columbus Area Office
 Carolyn Murphy
 Senior Community Builder
 HUD-Columbus Office
 200 North High Street
 Columbus, OH 43215-2499

Cincinnati Area Office
 Deborah Williams-Holston
 Senior Community Builder
 HUD-Cincinnati Office
 525 Vine Street, Suite 700
 Cincinnati, OH 45202-3188

Cleveland Area Office
 Douglas W. Shelby
 Senior Community Builder
 HUD-Cleveland Office
 1350 Euclid Avenue, Suite 500
 Cleveland, OH 44115-1815

Wisconsin State Office

Delbert Reynolds
 Senior Community Builder
 HUD-Milwaukee Office
 310 West Wisconsin Avenue, Room 1380
 Milwaukee, WI 53203-2289

Southwest Region

Texas State Offices

Ft. Worth Office
 Louis Ybarra (Acting)
 Secretary's Representative
 HUD-Ft. Worth Office
 801 Cherry Street, PO Box 2905
 Ft. Worth, TX 76113-2905

Dallas Area Office
 C. Don Babers
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 HUD-Dallas Office
 525 Griffin Street, Room 860
 Dallas, TX 75202-5007

Houston Area Office
 George H. Rodriguez
 Senior Community Builder
 HUD-Houston Office
 2211 Norfolk #200
 Houston, TX 77098-4096

Lubbock Area Office
 Miguel Rincon
 Senior Community Builder
 HUD-Lubbock Office
 1205 Texas Avenue, Room 511F
 Lubbock, TX 79401-4093

San Antonio Area Office
 A. Cynthia Leon
 Senior Community Builder
 HUD-San Antonio Office
 800 Dolorosa
 San Antonio, TX 78207-4563

Arkansas State Office

Richard L. Young
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 HUD-Little Rock Office
 425 West Capitol Avenue #900
 Little Rock, AR 72201-3488

Louisiana State Offices

New Orleans Area Office
 Jason Gamlin
 Senior Community Builder
 HUD-New Orleans Office
 Hale Boggs Building.
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 New Orleans, LA 70130-3099

Shreveport Area Office
 Martha Sakre
 Senior Community Builder
 HUD-Shreveport Office
 401 Edwards Street, Room 1510
 Shreveport, LA 71101-3289

New Mexico State Office

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Oklahoma State Offices

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 HUD-Oklahoma City Office
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Great Plains Region

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U.S. Department of Labor

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Region II**States Served: NY, NJ, PR, VI**

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Region III**States Served: DE, DC, MD, PA, VA, WV**

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Region IV**States Served: AB, FL, GA, KY, MS, NC, SC, TN**

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Region VII**States Served: IA, KS, MO, NE**

U.S. Department of Labor

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Region VIII**States Served: CO, MT, ND, SD, UT, WY**

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U.S. Department of Labor

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Region III**States Served: PA, VA, WV, DE, MD, DC**

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Region VIII**States Served: CO, UT, MT, WY, SD, ND**

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Region IX**States Served: CA, AZ, NV, HI, GU, AS, MP**

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Region X**States Served: WA, OR, ID, AK**

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U.S. Environmental Protection Agency Regional Programs

U.S. Environmental Protection Agency
Regional Geographic Initiative
The Regional Geographic Initiative (RGI) enables EPA regions to address unique, multifaceted, regional environmental problems that are of high priority. RGI was established in 1994 to help integrate local initiatives for control of hazards to human health and ecosystems, matters often of intense state and local concern or controversy. RGI is a grassroots approach to long-term, sustainable environmental restoration now proving itself in diverse communities across the nation. Project implementation is an efficient, bottom-up, stakeholder planning and participation process. Shared decision making through RGI means air, groundwater, surface water, pesticide, and habitat problems, for example, are addressed simultaneously.

RGI provides grants for projects that are identified as high priority by an EPA region, a state, or a locality; that pose a high human health or ecosystem risk; and that have significant potential for risk reduction. RGI supports projects that are bounded by the region or place in which the problem exists rather than based on a pollutant or sector. The problems addressed by this program are often multifaceted in nature and showcase innovative solutions. All of the geographic initiatives within RGI directly support one or more of EPA's seven guiding principles: ecosystem management, environmental justice, partnerships, sound science and data, pollution prevention, reinventing EPA management, and environmental accountability.

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U.S. Environmental Protection Agency
 Chesapeake Bay Program
 The Chesapeake Bay Program was formed to provide coordination and support to the overall Chesapeake Bay Program since the signing of the historic Chesapeake Bay Agreement of 1983. The office is located in Annapolis, Maryland. The CBP partners include the states of Maryland, Pennsylvania and Virginia; the District of Columbia; the Chesapeake Bay Commission, a tri-state legislative body; the U.S. Environmental Protection Agency (EPA), which represents the federal government; and participating citizen advisory groups.

The CBP is a unique regional partnership leading and directing restoration of the Chesapeake Bay, as well as setting and meeting goals to focus their highest priority: the restoration of the bay's living resources. Along the way, there has been a call to balance the needs of the ecosystem and the needs of the people who live, work, and play in the bay watershed. As the Chesapeake Bay Program moves into the twenty-first century, citizen understanding of and involvement in the bay's restoration will become increasingly important.

Contact Information

**U.S. Environmental Protection Agency
 Chesapeake Bay Program**

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U.S. Environmental Protection Agency Great Lakes National Program Office
 EPA's Great Lakes National Program Office (GLNPO), located in Chicago, Illinois, brings together federal, state, tribal, local, and industry partners in an integrated, ecosystem approach to protect, maintain, and restore the chemical, biological, and physical integrity of the Great Lakes. The program monitors Great Lakes ecosystem indicators; manages and provides public access to Great Lakes data, helps communities address contaminated sediments in their harbors, supports local protection and restoration of important habitats, promotes pollution prevention through activities and projects such as the Canada-U.S. Binational Toxics Strategy; and provides assistance for community-based Remedial Action Plans for Areas of Concern and for Lakewide Management Plans. Each year, GLNPO uses its funding to assist Great Lakes partners in those areas through grants, interagency agreements, and contracts.

The Boundary Waters Treaty of 1909 and the 1987 Great Lakes Water Quality Agreement (GLWQA) with Canada provide the basis for international efforts to manage this shared resource. Additional responsibilities are defined in section 118 of the Clean Water Act, section 112 of the Clean Air Act Amendments, and the Great Lakes Critical Programs Act of 1990. The Great Lakes Five-Year Strategy, developed jointly by EPA and its multistate, multiagency partners and built on the foundation of the GLWQA, provides the agenda for Great Lakes ecosystem management: reducing toxic substances, protecting and restoring important habitats, and protecting human and ecosystem species health.

Contact Information

U.S. Environmental Protection Agency Great Lakes National Program Office

<http://www.epa.gov/glnpo/>

U.S. Environmental Protection Agency
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U.S. Environmental Protection Agency Long Island Sound Study

The Long Island Sound Study (LISS) is a cooperative effort involving researchers, regulators, user groups, and other concerned organizations and individuals. These people are working together to protect and improve the health of the sound by implementing the Comprehensive Conservation and Management Plan, which was completed in 1994.

Primary partners in the LISS include the States of Connecticut and New York; EPA Region I in the New England area; and EPA Region II in the New York area. A number of committees help ensure broad input into development and implementation of the plan. Those committees represent policy, management, citizen, and technical interests from around the sound region.

The plan is the result of nearly ten years of effort to research and monitor conditions in the Long Island Sound, identify priority problems, and to develop strategies to address those problems.

Contact Information

U.S. Environmental Protection Agency Long Island Sound Study

<http://www.epa.gov/region01/eco/lis/>

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 Long Island Sound Office
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U.S. Environmental Protection Agency
 Long Island Sound Office
 Marine Science Research Center
 State University of New York
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U.S. Environmental Protection Agency National Estuary Program

The National Estuary Program (NEP) was established in 1987, by amendments to the Clean Water Act, to identify, restore, and protect nationally significant estuaries of the United States. Twenty-eight estuary programs are currently working to safeguard the health of some of the nation's most important coastal waters. Unlike traditional regulatory approaches to environmental protection, NEP targets a broad range of issues and engages local communities in the process. The program focuses not only on improving water quality in an estuary, but also on maintaining the integrity of the whole system—its chemical, physical, and biological properties, as well as its economic, recreational, and aesthetic values.

NEP is designed to encourage local communities to take responsibility for managing their own estuaries. Each estuary program is made up of representatives from federal, state, and local government agencies responsible for managing the estuary's resources, as well as members of the community—citizens, business leaders, educators, and researchers. These stakeholders work together to identify problems in the estuary, to develop specific actions to address those problems, and to create and implement a formal management plan to restore and protect the estuary.

EPA administers the National Estuary Program, but program decisions and activities are carried out by committees of local government officials, private citizens, and representatives from other federal agencies, academic institutions, industry, and estuary user-groups. Estuaries are selected for inclusion in the NEP through a nomination process. Nominations must be submitted to EPA during designated nomination periods by the Governors of the states where the estuary is located.

Contact Information

U.S. Environmental Protection Agency National Estuary Program

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U.S. Environmental Protection Agency U.S.-
Mexico Border XXI Program and
Environmental Health Workgroup

The U.S.-Mexico Border XXI Program is an innovative binational effort that brings together the diverse U.S. and Mexican federal entities responsible for the border environment to work cooperatively toward sustainable development through protection of human health and the environment as well as through proper management of natural resources in both countries.

Over the past thirty years, the border region has experienced a dramatic surge in population and industrialization. Unfortunately, this growth has exceeded the existing infrastructure capabilities of the region, leading to inadequate sewage treatment and hazardous and solid waste infrastructure, insufficient drinking water supplies, and dramatic impacts on habitats and the biodiversity they support. Increased urbanization and the lack of paved roads along the border have also affected air quality.

Objectives central to the Border XXI Program include public involvement, decentralization of border decision making, and increased cooperation among the different governmental agencies operating in the border region. The U.S.-Mexico Border XXI Environmental Health Workgroup was created to identify and address environmental factors that pose the highest risk to human health.

Together the U.S.-Mexico Border XXI Program and Environmental Health Workgroup ensure a commitment to sustainable development along the border by seeking a balance among social and economic factors and the protection of the human and environmental health in border communities and natural areas.

Contact Information

**U.S. Environmental Protection Agency U.S.-
Mexico Border XXI Program and Environmental
Health Workgroup**

<http://www.epa.gov/usmexicoborder/index.htm>

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Regional Partnerships

Coastal America

The Coastal America process joins the efforts of federal agencies with those of state, local, and private alliances to collaboratively address environmental problems along American coasts. Federal partners include those agencies with principal responsibilities for the stewardship of coastal resources, those with responsibilities for infrastructure development and maintenance, and those whose activities impact coastal environments. The challenge has been to integrate the capabilities of existing resources with state, local and nongovernmental efforts to address specific local problems by sharing information, pooling resources, and combining management skills and technical expertise. Such integration is being accomplished by bringing the partners to the table with a broad, problem solving approach. Furthermore, the Coastal America collaborative inter-agency structure enables national policy issues to be identified and resolved, regional plans and strategies to be developed, and local projects to be implemented.

Contact Information

Coastal America

<http://www.coastalamerica.gov/>

Coastal America Reporters Building
300 7th Street, SW, Suite 680
Washington, DC 20250

Great Lakes Information Network

The Great Lakes Information Network (GLIN) is a partnership that provides one *place* on-line for people to find information relating to the binational Great Lakes region. Thanks to its strong network of state, provincial, federal, and regional partner agencies and organizations, GLIN has become a necessary component of informed decision making and a trusted and reliable source of information for those who live, work, or have an interest in the Great Lakes region.

Respected across the Great Lakes region and around the world, GLIN offers a wealth of data and information about the region's environment and economy, tourism, education, and more.

Contact Information

Great Lakes Information Network

<http://www.great-lakes.net/>

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Great Plains Partnership and International Data Network

The Great Plains Partnership (GPP) was an experimental program comprised of federal, state, and local agencies, tribes, non-governmental organizations and landowners throughout the thirteen Great Plains states and the corresponding regions of Canada and Mexico dedicated to the use of cooperation to address economic and environmental interests.

GPP's mission was to catalyze and empower the people of the Great Plains to define and create their own sustainable future. In addition to removing institutional barriers, and developing the necessary science and data, to enhance local, regional, and world-wide learning because of the partnership's efforts. In addition, a series of working models allowed local partners apply new approaches to public outreach and education associated with sustainable development.

The Great Plains International Data Network (GPIDN) was formed December 1993 as an outgrowth of several Great Plains data-related activities. Members of the GPIDN were interested in exploring ways of cooperating with other agencies and jurisdictions to advance data activities and sustainable development within the Great Plains region. Over 120 U.S., Canadian, federal, nongovernmental, nonprofit, state and local participants were represented on the data network to foster the exchange ideas and information, and pooling of resources to develop mechanisms to facilitate access to regional environmental and economical data and enhance governmental management in the Great Plains region.

Although disbanded in 1998, GPP archives a breadth of informational documents and other media on their Web site at <http://www.greatplains.org/>.

Contact Information

Great Plains Partnership and International Data Network
<http://www.greatplains.org/>

Gulf of Mexico Program

The Gulf of Mexico Program was formed in 1988 to develop and implement voluntary, incentive-based management strategies to protect, restore, and maintain the health and productivity of the Gulf of Mexico ecosystem by protecting and restoring the coastal marine water of the Gulf of Mexico and its coastal living resources and natural habitats; by protecting human health and the food supply; and by monitoring the recreational use of Gulf shores, beaches and waters in ways consistent with the economic well-being of the region, through a network of citizens and institutions.

The Gulf of Mexico Program provides a tool to leverage the resources of eighteen different federal agencies; a variety of environmentally minded agencies from the states of Florida, Alabama, Mississippi, Louisiana, and Texas; and numerous public and private organizations.

A unique experiment in better government, the program's success comes from its ability to engage many people across the Gulf region in leadership and to implement projects that move in an environmentally and economically sound direction. The Gulf of Mexico Program, though underwritten by the EPA, is successful because of the partnerships that make the program work.

Contact Information

Gulf of Mexico Program

<http://pelican.gmpo.gov/>

Terry Hines Smith

Gulf of Mexico Program Office

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Stennis Space Center, MS 39529-6000

Lake Champlain Basin Program

The Lake Champlain Basin Program (LCBP) is a federal, state, and local initiative to restore and protect Lake Champlain and its surrounding watershed for future generations.

The LCBP works in partnership with government agencies from New York, Vermont, and Quebec; private organizations; local communities; and individuals to coordinate and fund efforts that benefit the Lake Champlain Basin's water quality, fisheries, wetlands, wildlife, recreation, and cultural resources.

The LCBP is administered jointly by EPA, the State of Vermont, the State of New York, and the New England Interstate Water Pollution Control Commission. Additional agencies cooperating in the LCBP include the USFWS, USDA, the U.S. Geological Survey (USGS), NOAA, and NPS.

Contact Information

Lake Champlain Basin Program

<http://www.anr.state.vt.us/champ/welcome.htm>

Lake Champlain Basin Program

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Puget Sound/Georgia Basin

Environmental Initiative

The governments of the Province of British Columbia and the State of Washington have recognized that large and growing threats exist to the economic, recreational, and cultural values of their shared inland marine waters. Over the next two decades, the population within the watershed of the shared waters is expected to increase by almost 50 percent, thereby placing increased burdens on the environment. The provincial and state governments are committed to addressing, planning for, and resolving the environmental problems associated with population growth in Puget Sound and the Georgia Basin.

The signing of the Environmental Cooperation Agreement by Premier Harcourt and then-Governor Gardner in May 1992 signaled the beginning of the British Columbia/Washington Environmental Initiative. This agreement commits the province and state to work together on transboundary environmental problems.

As a result, the agreement established an Environmental Cooperation Council, composed of the Director of the Washington Department of Ecology; the Deputy Minister of the British Columbia Ministry of Environment, Lands, and Parks; and formal observers from the regional offices of the U.S. Environmental Protection Agency, as well as the Department of Environment and the Department of Fisheries and Oceans of Canada. The council created five task forces to coordinate cross-border efforts in five priority areas; the Puget Sound/Georgia Basin International Task Force is one such task force.

The task force includes representatives of the U.S. Environmental Protection Agency; the Northwest Fisheries Science Center; the Department of Fisheries and Oceans and the Department of Environment of Canada; the Washington State Department of Ecology, Department of Natural Resources, and Department of Fish and Wildlife; the Puget Sound Water Quality Action Team; the British Columbia Ministry of Environment, Lands and Parks; and the Northwest Indian Fisheries Commission.

Puget Sound Water Quality Action Team

The Puget Sound Water Quality Action Team—an agency of the Governor’s Office of Washington State—brings together the heads of ten state agencies, a city and a county representative, a representative of federally recognized tribes, and ex-officio non-voting representatives of three federal agencies to lead and coordinate efforts to protect Puget Sound.

The twelve-member Puget Sound Council advises the Action Team and recommends ways to make protection efforts viable for local governments and to improve the accessibility of state and federal services to cities, counties, and tribes.

A governor-appointed chair guides the work of the Action Team and Puget Sound Council, helps develop the work plan and oversees how the work plan is carried out.

Under chapter 90.71, Revised Code of Washington, Action Team members are responsible for developing a biennial work plan and budget; coordinating the monitoring and research programs; periodically amending the Puget Sound Water Quality Management Plan; and coordinating Puget Sound Plan implementation among agencies.

Contact Information

Puget Sound/Georgia Basin Environmental Initiative

http://www.wa.gov/puget_sound/shared/shared.html

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APPENDIX III

BROWNFIELDS FEDERAL LEGISLATION

A broad assortment of federal legislation has been enacted to promote various aspects of environmental sustainability. The following list categorizes and summarizes federal regulations and amendments that pertain to brownfields redevelopment. In addition, a listing of brownfields related directives, guidances, and policies enacted by the U.S. Environmental Protection Agency (EPA) is included.

Hazardous Waste

Comprehensive Environmental Response, Compensation, and Liability Act
Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, on December 11, 1980.

The law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over five years, \$1.6 billion was collected and the tax went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites.

CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified.

CERCLA authorizes two kinds of response actions:

- Short-term removals where actions may be taken to address releases or threatened releases requiring prompt response; and
- Long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening.

Such response actions can be conducted only at sites listed on EPA's National Priorities List (NPL).

CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also provided the NPL.

CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

Superfund Amendments and Reauthorization Act

SARA amended the Comprehensive Environmental Response, Compensation, and Liability Act on October 17, 1986. SARA reflected EPA's experience in administering the complex Superfund program during its first six years and made several important changes and additions to the program. SARA:

- Stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites;
- Required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations;
- Provided new enforcement authorities and settlement tools;
- Increased state involvement in every phase of the Superfund program;
- Increased the focus on human health problems posed by hazardous waste sites;
- Encouraged greater citizen participation in making decisions on how sites should be cleaned up; and
- Increased the size of the trust fund to \$8.5 billion.

SARA also required EPA to revise the Hazard Ranking System to make sure that it accurately assessed the relative degree of risk to human health and the environment posed by uncontrolled hazardous waste sites that may be placed on the National Priorities List.

Emergency Planning and Community Right-to-Know Act

The Superfund Amendments and Reauthorization Act of 1986 created the Emergency Planning and Community Right-to-Know Act (EPCRA, also known as SARA Title III), a statute designed to improve community access to information about chemical hazards and to facilitate the development of chemical emergency response plans by state and local governments. EPCRA required the establishment of state emergency response commissions (SERCs), responsible for coordinating certain emergency response activities and for

appointing local emergency planning committees (LEPCs);

EPCRA and the EPCRA regulations (volume 40, CFR, parts 350 to 372) establish the following four types of reporting obligations for facilities that store or manage specified chemicals:

- EPCRA section 302 requires facilities to notify the SERC and the LEPC of the presence of any extremely hazardous substance (the list of such substances is in volume 40, CFR, part 355, Appendices A and B), if it has such substance in excess of the substance's threshold planning quantity, and directs the facility to appoint an emergency response coordinator.
- EPCRA section 304 requires the facility to notify the SERC and the LEPC in the event of a release equaling or exceeding the reportable quantity of a CERCLA hazardous substance or an EPCRA extremely hazardous substance;
- EPCRA sections 311 and 312 require a facility at which a hazardous chemical, as defined by the Occupational Safety and Health Act, is present in an amount exceeding a specified threshold to submit to the SERC, the LEPC, and the local fire department a material safety data sheet (MSDS) or lists of MSDSs and hazardous chemical inventory forms (also known as Tier I and II forms). This information helps the local government respond in the event of a spill or release of the chemical; and
- EPCRA section 313 requires manufacturing facilities included in Standard Industry Classification (SIC) codes 20 through 39, as well as SIC codes 10, 12, 4911, 4931, 4939, 4953, 5169, 5171, and 7389, that have ten or more employees, and that manufacture, process, or use specified chemicals in amounts greater than threshold quantities, to submit an annual toxic chemical release report. This report, known commonly as the Form R, covers releases and transfers of toxic chemicals to various facilities and environmental media and allows EPA to compile the national Toxic Release Inventory database.

Because local governments do not have operations that fall within the identified SIC codes, they are not subject to section 313 reporting requirements.

All information submitted pursuant to EPCRA regulations is publicly accessible, unless protected by a trade secret claim.

Local governments may store and use hazardous chemicals in various operations. Hazardous chemicals may be used as refrigerants, for cleaning, for disinfecting, or for other maintenance activities. If a local government stores or uses specified amounts of certain chemicals, it may be subject to planning and reporting requirements of EPCRA. Because of the range of types and quantities of chemicals used by local governments in such activities, the requirements will vary depending on their applicability to how particular functions are conducted.

Resource Conservation and Recovery Act
The Resource Conservation and Recovery Act (RCRA) of 1976, which amended the 1965 Solid Waste Disposal Act, addresses nonhazardous (Subtitle D) and hazardous (Subtitle C) waste management activities. The Hazardous and Solid Waste Amendments of 1984 strengthened RCRA's waste management provisions and added Subtitle I, which governs underground storage tanks (USTs). The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from USTs storing petroleum and other hazardous substances. RCRA focuses only on active (operating) and future facilities and does not address abandoned or historical sites. These sites are regulated under CERCLA.

The primary objective of RCRA is to protect human health and the environment. A secondary objective is to conserve valuable material and energy resources by providing assistance to state and local governments for prohibiting open dumping; regulating the management of hazardous wastes; encouraging recycling, reuse, and treatment of hazardous wastes; providing guidelines for solid waste management; and promoting beneficial solid waste management, resource recovery, and resource conservation systems.

Regulations promulgated pursuant to Subtitle C of RCRA (volume 40, CFR, parts 260 to 299) establish a “cradle-to-grave” system tracking hazardous waste from the point of generation through treatment, storage, or disposal. A waste may be considered hazardous if it is ignitable (i.e., burns readily), corrosive, or reactive (e.g., explosive). Waste may also be considered hazardous if it contains certain amounts of toxic chemicals. In addition to these characteristic wastes, EPA has also developed a list of over 500 specific hazardous wastes. These wastes are known as “listed wastes.” Hazardous waste takes many physical forms and may be solid, semi-solid, or liquid.

RCRA hazardous wastes include the specific materials listed in the regulations (commercial chemical products, designated with the code “P” or “U”; hazardous wastes from specific industries and sources, designated with the code “K”; or hazardous wastes from nonspecific sources, designated with the code “F”) as well as materials that exhibit a hazardous waste characteristic (ignitability, corrosivity, reactivity, or toxicity and designated with the code “D”).

RCRA requires the issuance of operating permits to hazardous waste treatment, storage, and disposal facilities. RCRA provides for a cradle-to-grave tracking of hazardous waste through a recordkeeping and labeling system that requires the manifesting of hazardous waste shipments (the Uniform Hazardous Waste Manifest) from point of generation to ultimate point of disposal. If hazardous waste is allowed to accumulate for a period greater than ninety days, a storer’s permit is required. Generators of hazardous waste must certify that they have a hazardous waste minimization program in place. Facilities may treat less-than-ninety-day tanks or containers of hazardous wastes without a permit. Subtitle C permits contain general facility standards such as contingency plans, emergency procedures, recordkeeping and reporting requirements, financial assurance mechanisms, and unit-specific standards. RCRA also has provisions (volume 40, CFR, part 264, Subpart S and section 264.101) for conducting corrective actions, which govern the cleanup of releases of hazardous waste or constitu-

ents from solid waste management units at RCRA treatment, storage, and disposal facilities.

Although RCRA is a federal statute, many states implement the RCRA program. Currently, EPA has delegated its authority to implement various provisions of RCRA to forty-seven of the fifty states and two U.S. territories. Delegation has not been given to Alaska, Hawaii, or Iowa.

Most RCRA requirements are not industry specific but apply to any entity that generates, transports, treats, stores, or disposes of hazardous waste. Some important RCRA regulatory requirements follow:

Identification of Solid and Hazardous Wastes
 Identification of Solid and Hazardous Wastes (volume 40, CFR, part 261) lays out the procedure every generator must follow to determine whether the material in question is considered a hazardous waste, solid waste, or is exempted from regulation.

Standards for Generators of Hazardous Waste
 Standards for Generators of Hazardous Waste (volume 40, CFR, part 262) establishes the responsibilities of hazardous waste generators including obtaining an EPA identification number, preparing a manifest, ensuring proper packaging and labeling, meeting standards for waste accumulation units, and meeting record keeping and reporting requirements. Providing they meet additional requirements described in (volume 40, CFR, part 262.34, generators may accumulate hazardous waste for up to 90 days (or 180 or 270 days) depending on the amount of waste generated and the distance the waste will be transported.

Land Disposal Restrictions
 Land Disposal Restrictions (LDRs) (volume 40, CFR, part 268) prohibit the disposal of hazardous waste on land without prior treatment. Under the LDRs, materials must meet LDR treatment standards before being placed in a RCRA land disposal unit (landfill, land treatment unit, waste pile, or surface impoundment). Generators of waste subject to the LDRs must provide notification to the designated treatment, storage, and disposal facility to ensure proper treatment of such waste prior to its disposal.

Used Oil Management Standards

Used Oil Management Standards (volume 40, CFR, part 279) impose management requirements affecting the storage, transportation, burning, processing, and re-refining of used oil. For parties that merely generate used oil, regulations establish storage standards. For a party considered a used oil processor, re-refiner, burner, or marketer (one who generates and sells off-specification used oil directly to a used oil burner), additional tracking and paperwork requirements must be satisfied.

Unit-Specific Standards

RCRA contains unit-specific standards for all units used to store, treat, or dispose of hazardous waste, including tanks and containers. Tanks and containers used to store hazardous waste with a high volatile organic concentration must meet emission standards under RCRA. Regulations (volume 40, CFR, parts 264 and 265, Subpart CC) require generators to test the waste to determine the concentration of the waste, to satisfy tank and container emissions standards, and to inspect and monitor regulated units. Those regulations apply to all facilities that store such waste, including large quantity generators accumulating waste prior to shipment off-site.

Underground Storage Tanks

Underground storage tanks (USTs) containing petroleum and hazardous substances are regulated under Subtitle I of RCRA. Subtitle I regulations (volume 40, CFR, part 280) contain tank design and release detection requirements, as well as financial responsibility and corrective action standards for USTs. Written records demonstrating compliance of the design and operation of USTs with applicable regulations must be maintained. Any release of a regulated substance must be reported to the EPA or state agency within 24 hours. The UST program also includes upgrade requirements for existing tanks that should have been met by December 22, 1998.

Boilers and Industrial Furnaces

Boilers and industrial furnaces that use or burn fuel containing hazardous waste must comply with design and operating standards. Boiler and industrial furnace regulations (volume 40, CFR,

part 266, subpart H) address unit design, provide performance standards, require emissions monitoring, and restrict the type of waste that may be burned.

Solid Waste Management

Solid Waste Management (Subtitle D) regulations establish standards and guidelines for solid waste collection and disposal programs and recycling programs. Nonhazardous solid waste consists of many diverse types of wastes including municipal solid waste, some sludges, some semi-solid and liquid wastes, construction waste, household hazardous waste, and oil and gas waste. Solid waste means any garbage or refuse; sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility; and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. The regulations also establish criteria for design, operation, maintenance and closure for municipal solid waste landfills. Finally, the regulations establish requirements for thermal processing (incineration) and resource recovery facilities.

Local governments may have numerous operations that result in the generation and management of different types of solid and hazardous waste. Those operations may be subject to specific parts of RCRA depending on the type of waste generated, how it is managed (e.g., stored, transported), and how it is disposed of.

Hazardous and Solid Waste Amendments

The 1984 Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act (RCRA) require the phasing out of land disposal of hazardous waste. The phasing out was broken into thirds with a timetable for each third.

Some of the other mandates of this strict law include increased enforcement authority for EPA, a program requiring corrective action, more stringent standards for hazardous waste management and a comprehensive underground storage tank program.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) granted EPA authority to create a regulatory framework to collect data on chemicals in order to evaluate, assess, mitigate, and control risks which may be posed by their manufacture, processing, and use. TSCA provides a variety of control methods to prevent chemicals from posing unreasonable risks.

TSCA standards may apply at any point during a chemical's life cycle. Under TSCA section 5, EPA has established an inventory of chemical substances. If a chemical is not already on the inventory and has not been excluded by TSCA, a premanufacture notice (PMN) must be submitted to EPA before manufacture or import. The PMN must identify the chemical and provide available information on its health and environmental effects. If available data are not sufficient to evaluate the chemicals effects, EPA can impose restrictions pending the development of information on the chemical's health and environmental effects. EPA can also restrict significant new uses of chemicals based upon factors such as the projected volume and use of the chemical.

Under TSCA section 6, EPA can ban the manufacture or distribution in commerce, limit the use, require labeling, or place other restrictions on chemicals that pose unreasonable risks. Among the chemicals EPA regulates under section 6 authority are asbestos, chlorofluorocarbons, and polychlorinated biphenyls.

Local governments may handle asbestos, lead paint, and other toxic substances as part of overall operations, as part of building renovations or inspections, or as part of general maintenance of schools and housing units. Management of and protection from toxic substances are regulated under TSCA.

Air and Water

Clean Air Act

The Clean Air Act (CAA) and its amendments, including the Clean Air Act Amendments (CAAA) of 1990, are designed "to protect and enhance the nation's air resources so as to promote the public health and welfare and the productive capacity of the population." The CAA consists of six sections, known as Titles, that direct EPA to establish national standards for ambient air quality and that direct the U.S. Environmental Protection Agency (EPA) and the states to implement, maintain, and enforce those standards through a variety of mechanisms. Under the CAAA, many facilities are required to obtain permits for the first time. State and local governments oversee, manage, and enforce many of the requirements of the CAAA. CAA regulations appear at volume 40, Code of Federal Regulations (CFR), parts 50 to 99.

Pursuant to Title I of the CAA, EPA has established national ambient air quality standards (NAAQSs) to limit levels of "criteria pollutants," including carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide. Geographic areas that meet NAAQSs for a given pollutant are classified as attainment areas; those that do not meet NAAQSs are classified as non-attainment areas. Under section 110 of the CAA, each state must develop a State Implementation Plan to identify sources of air pollution and to determine what reductions are required to meet federal air quality standards. Revised NAAQSs for particulate matter and ozone were proposed in 1996 and may go into effect as early as late 1997.

New Source Performance Standards

Title I also authorizes EPA to establish New Source Performance Standards (NSPSs), which are nationally uniform emission standards for new stationary sources falling within particular industrial categories. NSPSs are based on the pollution control technology available to that category of industrial source. New municipal waste combustors or sewage sludge incinerators may be subject to these standards.

National Emission Standards for Hazardous Air Pollutants

Under Title I, EPA establishes and enforces National Emission Standards for Hazardous Air Pollutants (NESHAPs), nationally uniform standards oriented toward controlling particular hazardous air pollutants (HAPs). Title I, section 112(c), of the CAA further directed EPA to develop a list of sources that emit any of 189 HAPs, and to develop regulations for those categories of sources. To date, EPA has listed 174 categories and developed a schedule for establishing emission standards. The emission standards will be developed for both new and existing sources based on “maximum achievable control technology” (MACT). MACT is defined as the control technology achieving the maximum degree of reduction in the emission of HAPs, taking into account cost and other factors. Unless a local government operates a treatment storage and disposal facility or stores significant quantities of organic chemicals, it is not likely to be subject to the NESHAPs requirements.

Mobile Sources

Title II of the CAA pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms EPA uses to regulate sources of mobile air emissions. Local governments may be subject to these standards if they operate vehicles or conduct fueling operations.

Sulfur Dioxide/Nitrous Oxide Emissions

Title IV of the CAA establishes a sulfur dioxide/nitrous oxide emissions program designed to reduce the formation of acid rain. Reduction of sulfur dioxide releases will be obtained by granting to certain sources limited emissions allowances, which, as of 1995, have been set below previous levels of sulfur dioxide releases. Local governments that operate municipal waste combustors, sewage sludge incinerators, or large boilers or generators may be subject to these requirements.

Major Source Permit Program

Title V of the CAA of 1990 created a permit program for all “major sources” (and certain other sources) regulated under the CAA. One purpose of the operating permit is to include in a single document all air emissions requirements that apply to a given facility. States are developing the permit programs in accordance with guidance and regulations from EPA. Once EPA approves a state program, the state will issue and monitor permits

Stratospheric Ozone Protection

Title VI of the CAA is intended to protect stratospheric ozone by phasing out the manufacture of ozone-depleting chemicals and restricting their use and distribution. Production of Class I substances, including fifteen kinds of chlorofluorocarbons and chloroform, was phased out (except for essential uses) in 1996. Local governments that conduct vehicle or building air-conditioner maintenance and repair are subject to these requirements.

Risk Management Planning

Local governments conduct activities that contribute to air pollution. Activities such as vehicle use and fueling, chemical storage, and boiler operations are common to many of the operations of local government. Vehicle use contributes to ground-level ozone and smog. Fueling operations may emit volatile organic compounds (VOCs). Chemical storage has the potential to emit HAPs. Local governments may conduct those and other activities as part of their operations. Such activities may be regulated under CAA. While such activities contribute to air pollution, whether the activities are subject to CAA regulations will depend on the amount of pollutants the activity is generating and the size of municipal operation. In general, large, urban local governments and governments near pristine areas such as national parks and wilderness areas will be subject to the most stringent CAA requirements.

Solid Waste Disposal Act

The Solid Waste Disposal Act (passed in 1965 as title II of the Clean Air Act of 1965) focused on research, demonstrations, and training. It provided for sharing with the states the costs of making surveys of waste disposal practices and problems and of developing waste management plans.

Clean Water Act

The primary objective of the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), is to restore and maintain the chemical, physical, and biological integrity of the nation's surface waters. Pollutants regulated under the CWA include "priority" pollutants, including various toxic pollutants; "conventional" pollutants, such as biochemical oxygen demand, total suspended solids, fecal coliform, oil and grease, and pH; and "non-conventional" pollutants, including any pollutant not identified as either conventional or priority.

NPDES Permits

CWA regulates both direct and indirect discharges. The National Pollutant Discharge Elimination System (NPDES) program (CWA section 402) controls direct discharges into navigable waters. Direct discharges or "point source" discharges are from sources such as pipes and sewers. These include discharges of industrial and municipal wastewater, as well as stormwater conveyed through a municipal separate stormwater system. NPDES permits, issued by either EPA or an authorized state (EPA has authorized forty-four states to administer the NPDES program), contain industry-specific, technology-based and water quality-based limits and establish pollutant monitoring requirements. Each municipality or industry that intends to discharge into the nation's waters must obtain a permit prior to initiating its discharge. A permit applicant must provide quantitative analytical data identifying the types of pollutants present in the facility's effluent. The permit will then set the conditions and effluent limitations on the facility's discharges.

An NPDES permit also includes discharge limits based on federal or state water quality criteria or standards that were designed to protect

designated uses of surface waters, such as supporting aquatic life or recreation. These standards, unlike the technological standards, generally do not take into account technological feasibility or costs. Water quality criteria and standards vary from state to state, and site to site, depending on the use classification of the receiving body of water. Most states follow EPA guidelines that propose aquatic life and human health criteria for many of the 126 priority pollutants.

Local governments that own and operate wastewater treatment plants are required to apply for and obtain an NPDES permit. Those permits contain a variety of required elements, including discharge limits; monitoring, reporting, and record-keeping requirements; and requirements for managing residuals.

Combined Sewer Systems Permit Provisions

EPA's 1994 Combined Sewer Overflow (CSO) Control Policy provides recommended NPDES permit conditions for municipalities with combined sewer systems. These provisions are typically implemented by municipal authorities and include requirements for meeting nine minimum controls to reduce the frequency and water quality impacts of CSO events, and to establish a long-term control plan to address capital improvements to the system. Those local governments that operate and maintain a combined collection system must abide by these requirements, which are included as part of the NPDES permit.

Stormwater Discharges

In 1987 the CWA was amended to require EPA to establish a program to address stormwater discharges. In response, EPA has devised the NPDES stormwater regulations in two phases. Phase I, promulgated in 1990, required local governments that operate large (serving a population greater than 250,000) or medium (serving a population from 100,000 to 250,000) municipal separate stormwater systems to apply for and obtain an NPDES stormwater permit. During Phase II of the stormwater program, local governments operating small municipal separate stormwater systems will be required to submit a Notice of Intent to EPA to be covered under a national general stormwater permit.

In addition to requiring stormwater permits for collection systems, the CWA may also require that industrial or local government operations obtain or be covered by stormwater permits. Such operations may include construction activities (e.g., roads and buildings) or storage of chemicals or hazardous materials.

Pretreatment Program

Another type of discharge that is regulated by the CWA is one that goes to a publicly owned treatment works (POTWs). The national pretreatment program (CWA section 307(b)) controls the indirect discharge of pollutants to POTWs by “industrial users.” Facilities regulated under section 307(b) must meet certain pretreatment standards. The goal of the pretreatment program is to protect municipal wastewater treatment plants from damage that may occur when hazardous, toxic, or other wastes are discharged into a sewer system and to protect the quality of sludge generated by those plants. Discharges to a POTW are regulated primarily by the POTW itself, rather than by the state or EPA.

EPA has developed technology-based standards for industrial users of POTWs. Different standards apply to existing and new sources within each category. “Categorical” pretreatment standards applicable to an industry on a nationwide basis are developed by EPA. In addition, another kind of pretreatment standard, “local limits,” is developed by the POTW to assist it in achieving the effluent limitations in its NPDES permit. Whether or not a state is authorized to implement either the NPDES or the pretreatment program, if it develops its own program, it may enforce requirements more stringent than federal standards.

Those local governments that own and operate POTWs must meet the requirements for a pretreatment program under the CWA. In such situations, the local government becomes the regulator and establishes limits that must be met by those industries discharging to the POTW.

Sludge Management

Section 405 of the Clean Water Act and the associated regulations govern land application and land disposal of sludge generated from municipal wastewater treatment. The associated EPA regulations, found in volume 40, CFR, part 503, establish requirements for sludge quality, application rates for sludge, and environmental conditions under which land application is permitted. The regulations also specify management methods, monitoring, and record keeping for both disposal and land application facilities. Local governments that produce sludge from their wastewater treatment operations are subject to these regulations.

Spill Prevention, Control, and Countermeasure Plans

The 1990 Oil Pollution Act requires that facilities that could reasonably be expected to discharge oil in harmful quantities prepare and implement more rigorous Spill Prevention Control, and Countermeasure (SPCC) Plans required under the CWA (volume 40, CFR, section 112.7). The SPCC regulations also require specific management procedures for loading, unloading, and storing petroleum products. The regulations specify criminal and civil penalties for deliberate or negligent spills of oil. Regulations covering response to oil discharges and contingency plans (volume 40, CFR, part 300), Facility Response Plans to oil discharges (volume 40, CFR, section 112.20), and for PCB transformers and PCB-containing items were revised and finalized in 1995. Local governments that maintain fueling operations must comply with the SPCC regulations.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) mandates that EPA establish regulations to protect human health from contaminants in drinking water. The law authorizes EPA to develop national drinking water standards and to create a joint federal-state system to ensure compliance with these standards. The SDWA also directs EPA to protect underground sources of drinking water through the control of underground injection of liquid wastes.

Drinking Water Standards

EPA has developed primary and secondary drinking water standards under its SDWA authority. EPA and authorized states enforce the primary drinking water standards, which are contaminant-specific concentration limits that apply to certain public drinking water supplies. Primary drinking water standards consist of maximum contaminant level goals (MCLGs), which are nonenforceable health-based goals, and maximum contaminant levels, which are enforceable limits set as close to MCLGs as possible, considering cost and feasibility of attainment.

To ensure these standards are maintained, SDWA regulations require sampling and monitoring for contaminants such as fecal coliform and metals. In addition, the SDWA regulations require specified disinfection and filtration activities, notification when certain contaminants exceed specified levels, and reporting when contaminant limits are exceeded.

Underground Injection Control

The SDWA Underground Injection Control (UIC) program (volume 40, CFR, parts 144 to 148) is a permit program that protects underground sources of drinking water by regulating five classes of injection wells. UIC permits include design, operating, inspection, and monitoring requirements. Wells used to inject hazardous wastes must also comply with RCRA corrective action standards to be granted a RCRA permit and must meet applicable RCRA LDR standards. The UIC permit program is primarily enforced by the state because EPA has authorized all but a few states to administer the program.

Sole-Source Aquifer Protection

The SDWA also provides for a federally implemented Sole-Source Aquifer program, which prohibits federal funds from being spent on projects that may contaminate the sole or principal source of drinking water for a given area, and for a state-implemented Wellhead Protection program, designed to protect drinking water wells and drinking water recharge areas.

Local governments may be responsible for operating and maintaining drinking water systems and for providing drinking water to communities and the public. Whether providing drinking water to a community or simply to visitors, the local government is responsible for providing safe, drinkable water that meets EPA standards. Those standards stem from the SDWA, which specifies standards for both community water systems and transient water systems. The primary local government operation subject to SDWA regulations is operation of water supply systems. In addition, any municipal operation that provides water to the public (other than water that it receives from a public water supply system such as wells or other reservoirs) may also be required to comply with SDWA requirements.

Land Management

Coastal Zone Management Act

In an effort to encourage states to better manage coastal areas, Congress enacted the Coastal Zone Management Act (CZMA) in 1972. CZMA provides grants to states that develop and implement federally approved coastal zone management plans. It also allows states with approved plans the right to review federal actions to ensure they are consistent with those plans, and it authorizes the National Estuarine Research Reserve System.

CZMA requires that approved state management programs include the following:

- The boundaries of the coastal zone affected by the program;
- An inventory and designation of areas of particular concern in the coastal zone;
- A definition of permitted land and water uses that directly impact coastal waters;
- An identification of how those uses will be controlled;
- An outline of broad guidelines to determine priority of uses in coastal areas;
- A description of the administrative structure that will operate the approved management program;
- A definition of “beach” and a planning process for dealing with access to public coastal areas;
- A planning process for energy facilities likely to be located in or to significantly affect the coastal zone; and
- A planning process for studying both the effects of coastal erosion and alternative ways to control it.

Each coastal state with an approved plan receives between \$500,000 and \$2.15 million each year in federal administrative grant money that must be matched by the state. The amount of money each state receives is dependent upon its coastal population and shoreline mileage. This is the primary funding available for the state programs.

Coastal states making satisfactory progress in implementing their plans are also eligible for Resource Management Improvement Grants. Those grants are designed to help states preserve

or restore coastal areas, redevelop urban waterfronts and ports, and provide access to public beaches and coastal waters. The grants also must be matched by the state.

Finally, participating states may compete for Coastal Zone Enhancement Grants. These additional federal funds can be used to strengthen the state programs in one or more of the following areas:

- Wetland protection and restoration;
- Increased public access to coastal areas;
- Control of development impacts;
- Protection from coastal hazards;
- Special area management planning;
- Management of ocean resources; and
- Reduction of marine debris along the coast.

These grants are awarded by the National Oceanic and Atmospheric Administration (NOAA) on the basis of a review of the state programs. No state match is required for these grants. State grants are funded at \$52.7 million in fiscal year 1999.

As mentioned previously, states with approved plans have the right to review federal activities (including private activities that require federal permits) to determine whether they are consistent with the policies of the state’s coastal zone management program. If the federal action is not consistent to “the maximum extent practicable” with the state program, changes must be made before the federal activity is permitted. For federal agency actions, the final determination of whether a federal action is consistent lies with the Secretary of Commerce.

Furthermore, the Coastal Zone Management Act authorizes the National Estuarine Research Reserve System. Under the CZMA, the Secretary of Commerce can make grants, not to exceed 50 percent of the cost of the project, that enable coastal states to acquire, develop, and operate estuarine research reserves. Designation of an estuarine reserve requires a state to agree to long-term management of the site for research purposes and to provide information for use by coastal zone managers.

Endangered Species Act

The Endangered Species Act (ESA) establishes a program for the conservation of endangered and threatened species and the habitats in which they are found. The ESA affords broad protection for species of fish, wildlife, and plants that are listed as endangered and threatened in the U.S. and elsewhere. Provisions are made for listing species, for recovery plans, and for the designation of critical habitat for listed species. Anyone can petition the U.S. Fish and Wildlife Service (USFWS) to list a species. The ESA strives to conserve ecosystems both through federal action and by encouraging the establishment of state programs. The law outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species or their habitats.

The ESA is the enabling legislation for the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

The ESA requires the Secretary of the Interior, acting through USFWS, to list species as endangered or threatened when certain factors, including habitat destruction, overuse, disease or predation, inadequacy of regulatory mechanisms, or other natural or man-made factors, warrant such a listing. (In the case of marine plants, fish, or wildlife, the Secretary of Commerce, acting through the Marine Fisheries Service (MFS), determines whether to list a species or to change the status of a species.) When determining that a species is endangered or threatened, the Secretary of the Interior must, to the maximum extent prudent and determinable, designate critical habitat. In addition, the secretary must develop and implement recovery plans for the conservation and survival of endangered and threatened species.

Under the ESA, the secretary must cooperate to the maximum extent practicable with states and may enter into management agreements with states for the administration of particular conservation areas. The secretary is also authorized to enter into cooperative agreements with states that establish and maintain adequate and active programs for conservation of listed species. State laws or regulations may be more, but not less, restrictive than the ESA or its regulations.

When taking federal action, federal agencies must consult with the USFWS or MFS to ensure that such action is not likely to jeopardize the continued existence of a listed species or the result in destruction or adverse modification of a critical habitat of a species. If jeopardy or adverse modification is likely, the USFWS or MFS must suggest reasonable and prudent alternatives to the agency and the applicant.

The ESA prohibits the taking, possession, import, export, sale, and transport of any listed fish or wildlife species. The term “take” includes harassing, harming, hunting, killing, capturing, and collecting. It is also unlawful to maliciously damage, destroy, or remove from any area under federal jurisdiction; damage or remove from any other area in knowing violation of state law; or to import, export, or trade, any listed plant species. These prohibitions do not apply to species legally held in captivity or in a controlled environment. In addition, the USFWS or MFS may permit a prohibited act for scientific purposes, for the establishment and maintenance of experimental populations, or otherwise to enhance the propagation and survival of an affected species. The USFWS or MFS, by permit, may also allow a taking incidental to an otherwise lawful activity if the applicant submits, and the USFWS or MFS approves, a conservation plan addressing the effect of the taking, mitigation measures, funding, and alternative actions considered. Requirements of the ESA may be triggered if local governments conduct activities along these lines.

Economic and Workforce Development

Taxpayer Relief Act (HR 2014/PL 105-34):
Brownfields Tax Incentive

On August 5, 1997, President Clinton signed the Taxpayer Relief Act (HR 2014/PL 105-34), which included a new tax incentive to spur the cleanup and redevelopment of brownfields in distressed urban and rural areas. The Brownfields Tax Incentive builds on the momentum of the Brownfields National Partnership Action Agenda, announced in May 1997. The Brownfields National Partnership outlines a comprehensive approach to the assessment, cleanup, and sustainable reuse of brownfields, including specific commitments from fifteen federal agencies. The Brownfields Tax Incentive will help bring thousands of abandoned and underused industrial sites back into productive use, providing the foundation for neighborhood revitalization, job creation, and the restoration of hope in our nation's cities and distressed rural areas.

Under the Brownfields Tax Incentive, environmental cleanup costs for properties in targeted areas are fully deductible in the year in which they are incurred, rather than having to be capitalized. The \$1.5 billion incentive is expected to leverage \$6.0 billion in private investment and return an estimated 14,000 brownfields to productive use. The Brownfields Tax Incentive is a tool that communities can now utilize in addressing brownfields.

The tax incentive is applicable to properties that meet specified land use, geographic, and contamination requirements. To satisfy the land use requirement, the property must be held by the taxpayer incurring the eligible expenses for use in a trade or business or for the production of income, or the property must be properly included in the taxpayer's inventory. To satisfy the contamination requirement, hazardous substances must be present or potentially present on the property. To meet the geographic requirement, the property must be located in the one of the following areas:

- EPA Brownfields Pilot areas designated prior to February 1997;

- Census tracts where 20 percent or more of the population is below the poverty level;
- Census tracts that have a population under 2,000, have 75 percent or more of their land zoned for industrial or commercial use, and are adjacent to one or more census tracts with a poverty rate of 20 percent or more; and
- Any Empowerment Zone or Enterprise Community (and any supplemental zone designated on December 21, 1994).

Both rural and urban sites may qualify for this tax incentive. The taxpayer must get a certification from the state environmental agency that his or her property is in a targeted area. The Brownfields Tax Incentive sunsets after 3 years, thereby covering eligible costs incurred or paid from the date of enactment until January 1, 2001. Sites on EPA's National Priorities List are excluded.

Community Reinvestment Act

In 1977, Congress enacted the Community Reinvestment Act (CRA) to require banks, thrifts, and other lenders to make capital available in low- and moderate-income urban neighborhoods, thereby boosting the nation's efforts to stabilize those declining areas. Concern over potential environmental and financial liability for cleaning up those sites has made lenders, developers, and property owners reluctant to finance redevelopment of the properties. Rather than reuse former urban industrial sites, businesses have instead moved to suburban or rural greenfields, which carry fewer perceived risks to development.

In January 1995, EPA announced its original Brownfields Action Agenda in response to the widespread economic development obstacles posed by urban brownfields. The 1995 to 1996 Brownfields Action Agenda encouraged a cooperative approach by EPA, lenders, and prospective purchasers to ease fears of financial liability and regulatory burdens. EPA has coordinated with the Office of the Comptroller of the Currency to create incentives within the CRA regulations for economic revitalization and development.

Economic Dislocation and Worker Adjustment Assistance Act

The Economic Dislocation and Worker Adjustment Assistance Act (EDWAA) amended Title III of the Job Training Partnership Act, and provides funds to States and local substate grantees so they can help dislocated workers find and qualify for new jobs. It is part of a comprehensive approach to aiding workers who have lost their jobs that also includes provisions of the Worker Adjustment and Retraining Notification (WARN) Act and the Trade Adjustment Assistance (TAA) program.

Workers who have lost their jobs and are unlikely to return to their previous industries or occupations are eligible for the TAA program, including workers who lose their jobs because of plant closures or mass layoffs; long-term unemployed persons with limited job opportunities in their fields; and farmers, ranchers, and other self-employed persons who become unemployed because of general economic conditions. Under certain circumstances, states may also authorize service for displaced homemakers.

Each state is divided into substate areas. The programs are designed and operated at the local level, where the decisions about who can be served and which services will be offered are made on the basis of local labor market needs and opportunities, as well as available resources. The governor of each state designates a Dislocated Worker Unit (DWU) that has the primary responsibility for overall administration and management of the program, including the establishment of a system to respond rapidly to major worker dislocations. Funds are made available to the states each year using a distribution formula based on unemployment in each state.

EDWAA authorizes an array of comprehensive and timely retraining and readjustment services. States and local substate grantees can tailor the services to meet participants' individual needs on the basis of the funds available. These services include the following benefits:

Rapid Response

Each State has a DWU which receives notices of plant closures and mass layoffs covered under the WARN Act. When a DWU obtains information about a major layoff, it can respond with on-site

services to assist workers facing job losses. The DWU may also help set up a labor-management committee at the work site and assist in efforts to avert worker dislocations

Retraining Services

Workers can receive classroom, occupational skills, and on-the-job training to qualify for jobs in demand. Basic and remedial education, entrepreneurial training, and instruction in literacy or English as a Second Language may be provided.

Readjustment Services

Services include outreach and intake; testing and counseling; development of individual service plans; labor market information; job development; job search and placement; supportive services (including child care and transportation allowances); relocation assistance; and pre-layoff assistance programs.

Needs Related Payments

Dislocated workers in training who have exhausted their unemployment insurance benefits may receive needs-related payments while they complete training.

Certificates of Continuing Eligibility

These certificates allow eligible dislocated workers to defer the start of retraining or to obtain their own retraining.

National Reserve Account

States and substate areas may apply for National Reserve Account grants from the Department of Labor's Employment and Training Administration if they need additional funds to administer and operate projects for eligible workers dislocated due to mass layoffs, plant closures, disasters, and federal government actions.

Transportation

Transportation Equity Act for the 21st Century
The Transportation Equity Act for the 21st Century enacted in June 1998, authorizes highway, highway safety, transit, and other surface transportation programs for the next six years. Subsequent technical corrections were incorporated in the TEA-21 Restoration Act; thus, the material presented here reflects the combined effects of both acts and the two are jointly referred to as TEA-21.

TEA-21 builds on the initiatives established in the Intermodal Surface Transportation Efficiency Act of 1991, which was the last major authorizing legislation for surface transportation. TEA-21 combines continuation and improvement of current programs with new initiatives to meet the challenges of (1) improving safety as traffic continues to increase at record levels; (2) protecting and enhancing communities and the natural environment as transportation is provided; and (3) advancing America's economic growth and competitiveness domestically and internationally through efficient and flexible transportation.

Significant features of TEA-21 include the following:

Guaranteed Level of Federal Funds

Assurance of a guaranteed level of federal funds for surface transportation through FY 2003. The annual floor for highway funding is keyed to receipts of the Highway Account of the Highway Trust Fund. Transit funding is guaranteed at a selected fixed amount. All highway user taxes are extended at the same rates when the legislation was enacted.

Extension of the Disadvantaged Business Enterprises Program

Extension of the Disadvantaged Business Enterprises program, providing a flexible national goal of 10 percent for the participation of disadvantaged business enterprises, including small firms owned and controlled by women and minorities, in highway and transit contracting undertaken with federal funding.

Strengthening of Safety Programs

Strengthening of safety programs across the U.S. Department of Transportation. New incentive programs, with great potential for savings to life and property, are aimed at increasing the use of safety belts and promoting the enactment and enforcement of 0.08 percent blood alcohol concentration standards for drunk driving. These new incentive funds also offer added flexibility to states because the grants can be used for any activity under Title 23 of the U.S. Code.

Proven and Effective Program Structure

Continuation of the proven and effective program structure established for highways and transit under the landmark ISTEA legislation. Flexibility in the use of funds, emphasis on measures to improve the environment, focus on a strong planning process as the foundation of good transportation decisions—all ISTEA hallmarks—are continued and enhanced by TEA-21. New programs such as Border Infrastructure, Transportation Infrastructure Finance and Innovation, and Access to Jobs target special areas of national interest and concern.

Investing in Research

Investing in research and its application to maximize the performance of the transportation system. Special emphasis is placed on deployment of Intelligent Transportation Systems to help improve operations and management of transportation systems and vehicle safety.

General Environmental and Health Protection

The following laws can be applicable to brownfields redevelopment because of its multifaceted nature; however, these laws primarily act on secondary or tertiary factors related to brownfields redevelopment, such as occupational safety and structural regulations versus hazardous waste or redevelopment issues.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) was one of the first laws establishing the broad national framework for protecting the environment. NEPA's basic policy is to ensure that all branches of government give proper consideration to the environment before undertaking any major federal action that significantly affects the environment.

NEPA requirements are invoked when airports, buildings, military complexes, highways, parkland purchases, and other federal activities are proposed. Environmental Assessments and Environmental Impact Statements, which are assessments of the likelihood of impacts from alternative courses of action, are required from all federal agencies and are the most visible NEPA requirements.

Occupational Safety and Health Act

Congress passed the Occupational Safety and Health Act to ensure worker and workplace safety. The goal was to make sure employers provide their workers a place of employment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. In order to establish standards for workplace health and safety, the act also created the National Institute for Occupational Safety and Health as the research institution for the Occupational Safety and Health Administration (OSHA). A division of the U.S. Department of Labor, OSHA oversees the administration of the act and enforces standards in all fifty states.

Oil Pollution Act

The Oil Pollution Act (OPA) of 1990 streamlined and strengthened EPA's ability to prevent and respond to catastrophic oil spills. A trust fund financed by a tax on oil is available to pay for the cleanup of spills when the responsible party is incapable or unwilling to do so. The OPA requires oil storage facilities and vessels to submit to the federal government plans detailing how they will respond to large discharges. EPA has published regulations for aboveground storage facilities; the Coast Guard has done so for oil tankers. The OPA also requires the development of Area Contingency Plans to prepare and plan for oil spill response on a regional scale.

Pollution Prevention Act

The Pollution Prevention Act focuses industry, government, and public attention on reducing the amount of pollution through cost-effective changes in production, operation, and use of raw materials. Opportunities for reduction in sources of pollution are often not realized because existing regulations, and the industrial resources required for compliance, focus on treatment and disposal. Source reduction is fundamentally different from and more desirable than waste management or pollution control.

Pollution prevention also includes other practices that increase efficiency in the use of energy, water, or other natural resources, and that protect the resource base through conservation. Such practices include recycling, source reduction, and sustainable agriculture.

Resource Recovery Act

The Resource Recovery Act of 1970 changed the whole tone of the legislation from efficiency of disposal to concern with the reclamation of energy and materials from solid waste. It authorized grants for demonstrating new resource recovery technology and required annual reports from the EPA on means of promoting recycling and reducing the generation of waste.

Rivers and Harbors Acts

The Rivers and Harbors Acts (R&HAs) address projects and activities in navigable waters as well as harbor and river improvements. Several of these acts provide a number of regulatory authorities, the implementation of which has evolved over time. Section 10 of the R&HAs prohibit the unauthorized obstruction or alteration of any navigable water of the United States. This section provides that the construction of any structure in or over any navigable water of the United States, or the accomplishment of any other work affecting the course, location, condition, or physical capacity of such waters, is unlawful unless the work has been recommended by the chief of engineers and authorized by the secretary of the army. The secretary's approval authority has since been delegated to the chief of engineers.

U.S. Environmental Protection Agency Directives, Guidances, and Policies

For a comprehensive listing of OSWER/Superfund Directives see the Information Network for Superfund Settlements at <http://www.eninfo.com/inguid.html>.

Brownfields Cleanup Revolving Loan Fund Program Guidance

The overall purpose of the Brownfields Cleanup Revolving Loan Fund (BCRLF) pilot program is rooted in the mission of the U.S. Environmental Protection Agency's Brownfields Economic Redevelopment Initiative: to empower states, local governments, communities, and other stakeholders to work together in a timely manner to prevent, assess, and safely clean up brownfields in order to facilitate their sustainable reuse. As part of this broader initiative, the specific purpose of the BCRLF pilot program is to foster development and implementation of financial and administrative approaches that can support self-sustaining efforts by states, local governments, and Indian tribes to facilitate brownfields cleanup efforts.

The pilot program addresses this objective in two ways. First, it facilitates the implementation of loan programs to carry out cleanups in pilot locations. Second, the experience gained from these pilots provides important information and lessons for all brownfields stakeholders—about how to structure, establish, and operate revolving loan funds to effectively support brownfields cleanup.

Similar revolving loan funds, such as those supporting investments in wastewater treatment, drinking water, and general economic development, typically are capitalized with a combination of federal, state, or local funds. Through the provision of loans, often at below-market interest rates, such revolving loan funds are able to become self-sufficient sources of capital funds for targeted purposes (i.e., in the case of the BCRLF pilot program, brownfields cleanups). The fund "revolves," by using loan repayments (principal and interest) and other program income to provide new loans and for other for authorized purposes.

EPA awards funding to selected BCRLF pilots through cooperative agreements negotiated between the EPA and the entities selected to receive pilot funding. For the demonstration pilot, EPA is responsible for ensuring that all cooperative agreement financial and environmental management requirements are met including ensuring that all environmental response actions are conducted in accordance with the cooperative agreement and the Comprehensive Environmental Response, Compensation, and Liability Act, and consistent with the National Oil and Hazardous Substances Pollution Contingency Plan. To this end, EPA is substantially involved in the general administration of the BCRLF program, including such activities as collaborating with cooperative agreement recipients on operational matters and providing necessary monitoring and oversight of the cooperative agreement. However, day-to-day operations and all activities related to prioritizing loan applications are the responsibility of the cooperative agreement recipient.

Cooperative agreement recipients work with EPA to ensure that BCRLF pilot funds are used appropriately and that the individual BCRLF programs established by the cooperative agreement recipients meet the intent and legal requirements of the pilot program. The specific responsibilities of cooperative agreement recipients include both environmental cleanup and financial management components of operating the loan fund. The cooperative agreement recipient serves as the “lead agency” for clean up, but may enter into a written agreement with a qualified government organization or private entity to support its lead agency functions. As the lead agency, the cooperative agreement recipient designates a qualified government environmental specialist as “brownfields site manager” (responsible for on-scene coordinator responsibilities described in 40 C.F.R. Part 300) for each and every site toward which BCRLF funding is directed. One brownfields site manager must be responsible for each site, but a single brownfields site manager may be responsible for more than one site. In addition to cleanup-related responsibilities, the cooperative agreement recipient also will serve as, or enlist the services of, a “fund manager” to provide all

financial management functions required to operate the BCRLF.

Among its other responsibilities, each cooperative agreement recipient must ensure that its borrowers comply with all relevant requirements of the BCRLF program, as well as other applicable Federal and state requirements. Such requirements will be outlined in the loan agreement between the cooperative agreement recipient and individual borrowers.

Guidance on Deferral of NPL Listing Determinations While States Oversee Response Actions: OSWER Directive 9375.6-11 (May 3, 1995).

This directive provides guidance on the U.S. Environmental Protection Agency’s Superfund State and Tribal deferral program, under which EPA may defer consideration of certain sites for listing on the National Priorities List, while interested states, territories, commonwealths, or federally-recognized Indian tribes compel and oversee response actions conducted and funded by potentially responsible parties (PRPs). Once the necessary response actions at a site are completed successfully, the site will be removed from the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS), and EPA will have no further interest in considering the site for listing on the NPL, unless it receives new information of a release or potential release that poses a significant threat to human health or the environment.

The deferral guidance provides a framework for regions, states, and federally-recognized tribes to determine the most appropriate, effective, and efficient means to address more sites more quickly than EPA otherwise would address them. EPA also recognizes that several States already have fully developed cleanup programs in place, while others are continuing to strengthen their capabilities. Therefore, the guidance is designed to be implemented in a flexible manner to account for differing capabilities of participating states and tribes. As a result of site-specific circumstances or differing but equally effective state or tribal program practices, regions may choose to act at

variance from certain provisions of the guidance. Under the deferral program:

- Deferral may be implemented on either an area wide or site-specific basis;
- Response actions will be conducted under state or tribal authority;
- Viable and cooperative PRPs will agree to pay for and conduct response actions— Superfund Trust funds generally will not be made available for conducting response actions;
- Response actions must be protective of human health and the environment and meet state or tribal and federal applicable requirements;
- A site may not be deferred if the affected community has significant, valid objections;
- The level of EPA oversight of states and tribes will be negotiated with the region; and
- Once a deferral response is complete, EPA will remove the site from CERCLIS and will not consider the site for the NPL unless EPA receives new information of a release or potential release that poses a significant threat to human health or the environment.

Guidance on Land Use in the CERCLA Remedy Selection Process: OSWER Directive No. 9355.7-04

This directive presents additional information for considering land use in making remedy selection decisions under the Comprehensive Environmental Response, Compensation, and Liability Act at National Priorities List sites. EPA believes that early community involvement, with a particular focus on the community's desired future uses of property associated with the CERCLA site, should result in: a more democratic decision making process; greater community support for remedies selected as a result of this process; and more expedited, cost-effective cleanups.

The directive contains two primary objectives: (1) to promote early discussions with local land use planning authorities, local officials, and the public regarding reasonably anticipated future uses of the property on which an NPL site is located; and (2) to promote the use of that infor-

mation to formulate realistic assumptions regarding future land use and to clarify how such assumptions fit in and influence the baseline risk assessment, the development of alternatives, and the CERCLA remedy selection process.

The major points of this directive are:

- Discussions with local land use planning authorities, appropriate officials, and the public, as appropriate, should be conducted as early as possible in the scoping phase of the Remedial Investigation/Feasibility Study (RI/FS). This will assist EPA in understanding the reasonably anticipated future uses of the land on which the Superfund site is located;
- If the site is located in a community that is likely to have environmental justice concerns, extra efforts should be made to reach out to and consult with segments of the community that are not necessarily reached by conventional communication vehicles or through local officials and planning commissions;
- Remedial action objectives developed during the RI/FS should reflect the reasonably anticipated future land use or uses;
- Future land use assumptions allow the baseline risk assessment and the feasibility study to be focused on developing practicable and cost effective remedial alternatives. These alternatives should lead to site activities that are consistent with the reasonably anticipated future land use. However, there may be reasons to analyze implications associated with additional land uses; and Land uses that will be available following completion of remedial action are determined as part of the remedy selection process. During this process, the goal of realizing reasonably anticipated future land uses is considered along with other factors. Any combination of unrestricted uses, restricted uses, or use for long-term waste management may result.

Discussions with local land use authorities and other locally affected parties to make assumptions about future land use are also appropriate in the

RCRA context. EPA recognizes that RCRA facilities typically are industrial properties that are actively managed, rather than the abandoned sites that are often addressed under CERCLA. Therefore, consideration of non-residential uses is especially likely to be appropriate for RCRA facility clean-ups. Decisions regarding future land use that are made as part of RCRA corrective actions raise particular issues for RCRA (e.g., timing, property transfers, and the viability of long-term permit or other controls) in ensuring protection of human health and the environment.

The guidance is also relevant for federal facility sites. Land use assumptions at sites that are undergoing base closure may be different than at sites where a federal agency will be maintaining control of the facility. Most land management agency sites will remain in federal ownership after remedial actions. In these cases, Forest Land Management Plans and other resource management guidelines may help develop reasonable assumptions about future uses of the land.

Guidance on Settlements with Prospective Purchasers of Contaminated Property
This document supersedes EPA's policy on agreements with prospective purchasers of contaminated property as set forth in the June 6, 1989, policy document entitled *Guidance on Landowner Liability under Section 107(a) of CERCLA, De Minimis Settlements under Section 122(g)(1)(B) of CERCLA, and Settlements with Prospective Purchasers of Contaminated Property*: OSWER Directive No. 9835.9 and 54 F.R. 34235 (Aug. 18, 1989).

While the new guidance restates much of the 1989 guidance, it revises two of the original criteria used to determine whether a prospective purchaser agreement is appropriate. The revised criteria allow EPA greater flexibility to consider agreements with covenants not to sue to encourage reuse or development of contaminated property that would have substantial benefits to the community (e.g., through job creation or productive use of abandoned property), but also would be safe, consistent with site remediation, and have direct benefits to EPA.

Since settlements with typical prospective purchasers (i.e., those who do not currently own the property, are not otherwise involved with the site, and are, therefore, not yet liable under Section 107) will not be reached under Section 122, the procedures and restrictions in that section, such as those relating to covenants not to sue, are not applicable; however, the guidance is applicable to persons seeking prospectively to operate or lease contaminated property. Agreements with prospective lessees and operators will be evaluated using the criteria set forth in this guidance, and require the current owner's signature.

The following criteria are used by EPA when considering the negotiation of agreements with prospective purchasers:

- An EPA action at the facility has been taken, is ongoing, or is anticipated to be undertaken;
- EPA receives a substantial benefit either in the form of a direct benefit for cleanup, or as an indirect public benefit in combination with a reduced direct benefit to EPA;
- The continued operation of the facility or new site development, with the exercise of due care, will not aggravate or contribute to the existing contamination or interfere with EPA's response action;
- The continued operation or new development of the property will not pose health risks to the community and those persons likely to be present at the site; and
- The prospective purchaser is financially viable.

Policy on CERCLA Enforcement Against Lenders and Government Entities That Acquire Property Involuntarily

This memorandum reaffirms the U.S. Environmental Protection Agency's and the U.S. Department of Justice's (DOJ's) intentions to follow the provisions of the Lender Liability Rule as enforcement policy. EPA and DOJ endorse the interpretations and rationales announced in the rule and its preamble. The purpose of this memorandum is to provide guidance within EPA and DOJ on the exercise of

enforcement discretion in determining whether particular lenders and government entities that acquire property involuntarily may be subject to CERCLA enforcement actions. In making such determinations, EPA and DOJ personnel should consult both the regulatory text of the rule and the accompanying preamble language in exercising their enforcement discretion under CERCLA as to lenders and government entities that acquire property involuntarily.

This guidance establishes EPA's and DOJ's position regarding possible enforcement actions against lenders and government entities who are associated with property that may be subject to a CERCLA response action. EPA and DOJ recognize CERCLA's unintended effects on lenders and government entities and the relative concern from these parties regarding the consequences of potential enforcement. In light of these concerns, lenders may refuse to lend money to an owner or developer of a contaminated or potentially contaminated property or they may hesitate in exercising their rights as secured parties if such loans are made. Additionally, government entities that involuntarily acquire property may be reluctant to perform certain actions related to contaminated or potentially contaminated property.

The language of Section 101(20)(A) leaves lenders and other interested parties uncertain as to which types of actions—such as monitoring vessel or facility operations, requiring compliance with applicable laws, and refinancing or undertaking loan workouts—they may take to protect their security interests without risking EPA enforcement under CERCLA. Courts have not always agreed on when a lender's actions are “primarily to protect a security interest,” and what degree of “participation in the management” of the property will forfeit the lender's eligibility for the exemption. This uncertainty was heightened by dicta in the Fleet Factors opinion, where the circuit court suggested that a lender participating in the management of a vessel or facility “to a degree indicating a capacity to influence the corporation's treatment of hazardous waste” could be considered liable under CERCLA.

Policy on the Issuance of Comfort/Status Letters

This policy is designed to assist parties who seek to cleanup and reuse brownfields. EPA headquarters and regional offices often receive requests from parties for some level of comfort that if they purchase, develop, or operate on brownfield property, EPA will not pursue them for the costs to clean up any contamination resulting from the previous use. While the comfort/status letters do not account for every possible situation, such documents do address the most common requests for comfort. Facts and circumstances, however, will vary and information may be disseminated through different means including other written communication, public or individual meetings, or reference to public information repositories and EPA databases.

Comfort/status letters are provided solely for informational purposes and relate only to EPA's intent to exercise its response and enforcement authorities under Superfund at a property based upon the information presently known to EPA. EPA encourages the release of as much information as possible to enable the party to better understand the potential applicability of CERCLA to individual parcels of property and make informed decisions. For example, EPA may need to take Superfund action at the property if conditions at the property change, or if new information becomes available indicating that present conditions warrant a Superfund response. With the exception of sharing information already contained in EPA's files, the letters generally are not intended to express EPA's opinion as to possible contamination or extent of contamination at the property or provide any information on obligations associated with ownership or operation of the site. Additionally, the letters are not intended to limit or affect EPA's authority under CERCLA or any other law or provide a release from CERCLA liability.

Upon receiving a request from an interested party for information about their circumstances, regional offices may issue comfort/status letters, at their discretion, when there is a realistic perception or probability of incurring Superfund liability

and such comfort will facilitate the cleanup and redevelopment of a brownfield property, and there is no other mechanism available to adequately address the party's concerns. EPA believes that these comfort/status letters are not necessary or appropriate for typical real estate transactions. With the information provided by EPA, the party inquiring about the property can decide whether the risk of EPA action is enough to forego involvement, whether to proceed as planned, whether additional investigation into site conditions is necessary, or whether further information from EPA or other agencies is needed. This policy is not intended to supersede EPA's *Policy Against No Action Assurances*, (November 16, 1984). Because these letters do not provide assurance of no action, approval of the Assistant Administrator of the Office of Enforcement and Compliance Assurance is not required.

There are four different types of EPA comfort/status issued for different circumstances:

No Previous Superfund Interest Letter

This letter introduces and explains the purpose of CERCLIS and may be sent when the property described by the interested party is not located in active or archived CERCLIS records. The purpose of the letter is to inform the recipient that, to the best of EPA's knowledge, the property described in the request has never been addressed under EPA's Superfund program, nor are there current plans to do so. Regions, generally, should not interpret a request for a No Previous Superfund Interest Letter as notification that the site should be entered into CERCLIS.

No Current Superfund Interest Letter

The No Current Superfund Interest Letter is intended for properties that have been archived and removed from the CERCLIS inventory of Superfund sites; where either all or part of the NPL site has been deleted following EPA's deletion policies ("Deletion from the NPL" 40 CFR 300.425(e) or "Partial Deletion of Sites Listed on the National Priorities List" published in the Federal Register on November 1, 1995, 60 FR 55466); or situated in the vicinity of but currently not considered part of the CERCLIS site (e.g., is adjacent to the site). The purpose of the letter is to

let the recipient know that EPA's Superfund program does not anticipate taking any/additional response action (which could include enforcement action if the Potentially Responsible Party ("PRP") search and/or cost recovery has been completed), and the basis for its decision. The letter also refers the party to additional sources of information such as EPA's administrative record and the appropriate state agency.

Federal Superfund Interest Letter

When a site is in the Superfund evaluation or response phase, the most important assistance EPA can provide an interested party may be information about current Superfund activities. When the site is found in CERCLIS site inventory, a regional office may issue a Federal Interest Letter to explain what actions have been taken by EPA toward the remediation of a particular site (e.g., site sampling, removal action). The letter also may indicate whether EPA anticipates further action at a site and the type of action anticipated. In addition to the opening paragraph, there are four parts to the Federal Interest Letter. Section I of the letter provides the recipient with the status of the property—whether the property is or may be part of CERCLIS/NPL site. Section II describes EPA's planned or ongoing activities (e.g., preliminary assessment, removal, or remedial design). Federal Interest Letters may be considered for sites in the CERCLIS site inventory, including those on the NPL or eligible for the NPL, sites undergoing a federal EPA removal action, undergoing federal EPA remedial action, or where EPA has incurred or will incur response costs.

State Action Letter

The State Action Letter is intended to provide comfort at sites where EPA may have either no current Superfund involvement or a secondary role under the state's (or territory, commonwealth or tribe) lead of site activities. A state may participate in such activities as lead agency through a cooperative agreement (CA) between the state and region. A state and region also may develop a Memorandum of Agreement (MOA) in which the region and the state articulate the roles each will have regarding the cleanup of contaminated properties.

Policy Toward Owners of Property Containing Contaminated Aquifers

The U.S. Environmental Protection Agency will not take enforcement action against property owners for ground water contamination of an aquifer underlying the property if the owner did not cause or contribute to the contamination. Further, EPA may consider *de minimis* settlements under Section 122(g)(1)(B) of CERCLA where necessary to protect such landowners from contribution suits.

The policy is subject to the following conditions:

- The landowner did not cause, contribute to, or exacerbate the release or threat of release of any hazardous substances, through an act or omission. The failure to take affirmative steps to mitigate or address groundwater contamination, such as conducting groundwater investigations or installing groundwater remediation systems, will not, in the absence of exceptional circumstances, constitute an “omission” by the landowner within the meaning of this condition. This policy may not apply where the property contains a groundwater well, the existence or operation of which may affect the migration of contamination in the affected aquifer. These cases will require fact-specific analysis.
- The person that caused the release is not an agent or employee of the landowner, and was not in a direct or indirect contractual relationship with the landowner. In cases where the landowner acquired the property, directly or indirectly, from a person that caused the original release, application of this policy will require an analysis of whether, at the time the property was acquired, the landowner knew or had reason to know of the disposal of hazardous substances that gave rise to the contamination in the aquifer.
- There is no alternative basis for the landowner’s liability for the contaminated aquifer, such as liability as a generator or transporter under Section 107(a)(3) or (4) of

CERCLA, or liability as an owner by reason of the existence of a source of contamination on the landowner’s property other than the contamination that migrated in an aquifer from a source outside the property.

As previously mentioned, in appropriate circumstances EPA may exercise its discretion under Section 122(g)(1)(B) to consider *de minimis* settlements with a landowner that satisfies the foregoing conditions. Such settlements may be particularly appropriate where such a landowner has been sued or threatened with contribution suits.

In exchange for a covenant not to sue from EPA and statutory contribution protection under Sections 113(f)(2) and 122(g)(5) of CERCLA, EPA may seek consideration from the landowner, such as the landowner’s full cooperation (including but not limited to providing access) in evaluating the need for and implementing institutional controls or any other response actions at the site.

Underground Storage Tank Lender Liability Rule: 40 CFR Parts 280 and 281 (September 7, 1995).

The Environmental Protection Agency issued this rule under the Resource Conservation and Recovery Act, Subtitle I—Regulation of Underground Storage Tanks. This rule limits the regulatory obligations of lending institutions and other persons who hold a security interest in a petroleum underground storage tank (UST) or in real estate containing a petroleum underground storage tank, or that acquire title or deed to a petroleum UST or facility or property on which an UST is located. This final rule specifies conditions under which these “security interest holders” may be exempted from the RCRA Subtitle I corrective action, technical, and financial responsibility regulatory requirements that apply to an UST owner and operator. This rule should result in additional capital availability for UST owners, many of whom are small businesses, and will assist them in meeting environmental requirements by improving their facilities.

EPA is establishing regulatory criteria specifying which RCRA Subtitle I requirements

are applicable to a secured creditor. Section 9003(h)(9) of RCRA exempts from the definition of “owner,” for purposes of section 9003(h)—EPA Response Program for Petroleum, those persons who, without participating in the management of the UST or UST system, and who are not otherwise engaged in petroleum production, refining, and marketing, maintain indicia of ownership in an UST or UST system primarily to protect a security interest. Those most affected by this “security interest exemption” include private lending institutions or other persons that provide loans secured by real estate containing an UST or UST system, or that acquire title to, or other indicia of ownership in, a contaminated UST or UST system. However, the security interest exemption is not limited solely to lending institutions; it potentially applies to any person whose indicia of ownership in an UST or UST system is maintained primarily to protect a security interest.

The RCRA Subtitle I security interest exemption affects not only secured creditors but also

UST and UST system owners who seek capital through the private lending market. The current rule provides a regulatory exemption from the federal UST regulatory requirements for those persons who provide secured financing to UST and UST system owners. The rule is designed, in conjunction with the statutory exemption in Sec. 9003(h)(9), to encourage the extension of credit to credit-worthy UST owners. The free flow of credit to UST owners (many of whom are small entities that may rely on secured financing mechanisms for capital) is expected to assist UST owners in meeting their obligations to upgrade, maintain, or otherwise comply with RCRA Subtitle I and other environmental requirements. Conversely, the lack of such capital may adversely affect the ability of an UST owner to meet its obligations under Subtitle I, with concomitant adverse environmental impacts from USTs and UST systems that are out of compliance due to the lack of financing to make the necessary improvements.

STATE VOLUNTARY CLEANUP PROGRAMS

Voluntary cleanup programs (VCPs) have become an increasingly important component of brownfields redevelopment in the past decade. Under both federal and state environmental laws, virtually any contaminated site subjects property owners to liability. While many of these sites are contaminated with hazardous substances, the environmental risks associated with these sites are typically not serious enough to warrant inclusion on the National Priorities List (NPL) or comparable state lists of hazardous sites.

However, redevelopment of such sites is often difficult, regardless of the severity of the contamination. Developers are often reluctant to purchase these sites, and lenders are also unwilling to provide funding out of concern that they will be held liable for the cleanup costs associated with these sites under the federal Comprehensive, Environmental Response, Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA).

To address those concerns and encourage redevelopment of these sites, nearly all fifty states except North Dakota and South Dakota, have enacted some type of voluntary cleanup program. Such programs have allowed parties including site owners, developers, and municipalities to voluntarily approach state governments and initiate cleanups on their own. VCPs are cooperative in nature and provide incentives to voluntary

parties rather than using enforcement orders to accomplish cleanups. Incentives to participate differ from state to state; however, state VCPs have a number of features in common. Incentives typically include some conditional exemptions from future state liability at a property, streamlined investigation and cleanup procedures, more expedient and economical cleanup alternatives, and more realistic cleanup goals.

Liability Assurances

Voluntary cleanup programs typically limit the potential liability of prospective purchasers and developers by allowing parties to enter into agreements with state environmental authorities to perform remedial activities. In exchange for such voluntary actions, many states offer indemnity from liabilities associated with the contaminants targeted in remedial efforts by issuing No Further Action (NFA) letters, No Further Remediation (NFR) letters, Certificates of Completion (COCs), Letters of Completion (LOCs), and Covenants Not to Sue among other legal agreements. Although the specific names of such agreements may vary from state to state, all such documents are intended to provide liability assurance and encouragement to parties that voluntarily undertake brownfields remediation. These liability assurances are often transferable to the lender and successors of the program participants.

Financial Assistance

While VCPs generally require volunteers to pay for the costs associated with cleanup activities, as well as oversight costs, many states offer grant or loan subsidies to help offset site investigation and cleanup costs. Some state environmental agencies provide no funding but instead create tax incentives such as tax abatements. Other programs provide funding only for those sites likely to contribute to the local economy through economic development initiatives.

Risk-Based Cleanup Standards

Many states also establish relaxed cleanup requirements using risk-based rather than generic

cleanup standards. Under a risk-based approach, a participant can design a remediation procedure that is based on the risk posed by the site and the intended future use of the property.

Oversight Procedures

All VCPs provide guidance and supervision through oversight procedures typically ordained to the state agency associated with natural resources or environmental protection. Although required levels of oversight vary from state to state, each VCP establishes a format in which a state agency is able to review applications, remedial action plans (RAPs), and proposed redevelopment plans, as well as site access to monitor the progress and execution of site remediation, to ensure that documents and activities comply with state and federal legislation and environmental regulations. Furthermore, oversight procedures often contain clauses that allow state agencies to reopen or rescind liability assurances if state or federal requirements are changed, if remedial efforts are insufficient or incomplete, or if VCP participants provide fraudulent information in formal agreements.

Public Notice

Many VCPs require public notification during the planning or implementation phases of site remediation. Not only does notifying the public of proposed remedial action fulfill a general obligation to portions of the community residing in the vicinity of a contaminated site, but also allows for local citizenry to review and propose modifications to remediation plans. As a result, site cleanups and future land uses are less likely to incur public disfavor and have a greater potential to benefit the interests of all segments of a community.

Memoranda of Agreement with U.S. EPA

While most programs offer liability assurances that are based on the current status of the property, only those states that have entered into a Memorandum of Agreement (MOA) with the U.S.

Environmental Protection Agency are able to offer assurances relating to liability under federal laws. In most cases, an MOA precludes federal involvement in VCP cleanups, except in extraordinary situations of imminent threat to human and environmental health.

Overall, VCPs have proven to be successful because they are streamlined programs with incentives that encourage property owners to initiate the cleanup process rather than allowing contaminated properties to lie unused for fear of liability under state or federal laws. With increased financial incentives and federal liability assurances, the programs are likely to become even more popular, benefiting both property owners and state governments.

The following list describes each established state VCP, VCPs being developed, or related programs where VCP legislation does not exist. After general information such as chronological data and legislative notation are examined, characteristics relating to eligibility criteria (by site and party); financial and legal incentives; oversight procedures; public notification requirements; negotiated MOAs with the U.S. Environmental Protection Agency; and fees are provided.

Alabama

Program
Voluntary Cleanup Program.

Administering Agency
Alabama Department of Environmental Management (ADEM).

Authority
Ala. Code sections 22-22-1, 22-30-1, 22-30A-1.

Date Established
1995, although still informal.

Eligibility

Sites

Eligible sites include inactive or abandoned hazardous waste sites except sites that are included or proposed to be included on the NPL under CERCLA or RCRA jurisdiction; permitted or interim status sites under the state Hazardous Waste Law; and sites where a state enforcement action has been initiated.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

ADEM will issue a No Further Action letter after reviewing a completion report and if site remediation satisfies applicable standards.

Financial Assistance

No financial assistance is available at this time.

Oversight Procedures

Participants negotiate an agreement with ADEM to determine the roles of each party and to establish a settlement agreement for oversight. After the submission of a site assessment, risk assessment, feasibility study, and work plan, ADEM reviews such material and helps participants create a site-specific remediation plan, based on site-specific, risk-based standards. Following the execution of the VCP, participants are required to submit a final

report to ADEM for review. If the VCP has been executed within compliance of the original agreement, ADEM issues an NFA letter. The letter may be reopened if new information surfaces that suggests that the site poses a significant threat to human or environmental health.

Public Notice
Not required.

Memorandum of Agreement with U.S. EPA
No.

Fees
Program participants must reimburse ADEM for oversight costs as stated in a negotiated settlement agreement.

Contact Information
For technical information:
Gerald Hardy
Chief of Hazardous Waste Branch
Alabama Department of Environmental
Management
1751 Congressman W.L. Dickinson Drive
Birmingham, AL 36109
For legal information:

Olivia H. Jenkins, Esq.
General Counsel
Alabama Department of Environmental
Management
1751 Congressman W.L. Dickinson Drive
Birmingham, AL, 36109

Alabama Department of Environmental
Management Homepage:
<http://adem.state.al.us>

Alaska

Program
Voluntary Cleanup Program.

Administering Agency
Alaska Department of Environmental Conserva-
tion (DEC).

Authority
Alaska Admin. Code Tit. 18 sections 75.325 to
390.

Date Established
A pilot VCP was established in 1996; a final
program is in the process of being implemented.

Eligibility

Sites

To be eligible for participation, a site must:

- Be ranked as low- or medium-priority by DEC using the Alaska Hazards Ranking Model;
- Not contain hydrocarbons or inorganics released from a regulated UST;
- Not be a petrochemical reserve pit;
- Not be a permitted solid waste storage or disposal facility; and
- Not contain soil or groundwater contamination other petroleum hydrocarbons, inorganics, or both (Soils may contain other constituents may be present at low levels as co-contaminants).

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

After site remediation is approved by DEC, as designated by DEC soil remediation standards, participants receive limited liability assurance through a Site Closure letter. The letter states that DEC will not pursue further remediation action as long as no new contamination is discovered on the site.

Financial Assistance

No financial assistance is available at this time.

Oversight Procedures

Applicants must file a Notice of Intent form to DEC that describes operational history at a site as well as its geographic setting and relative proximity to population and water resources. After a site has been accepted into the VCP, the applicant must complete a two-phase site assessment to determine (1) the presence of contamination and (2) the nature of, extent of, and specific contaminants present. Participants must then identify all applicable DEC cleanup standards and select an appropriate remedy. If approved, the participant must formulate a Cleanup Action Plan providing detailed project information such as a schedule, a site control plan, and any other elements required by DEC. After completing the cleanup, a participant must submit a final report to DEC. DEC will review the final report and either approve it, request further information, or require additional cleanup. After approval, the participant will be issued a Site Closure letter. DEC may reopen the letter if new contamination is discovered on the site.

Public Notice

Public notification of proposed site-specific cleanup standards are required in a local newspaper prior to the initiation of site remediation. A similar notification is required when a Site Closure letter is issued.

Memorandum of Agreement with U.S. EPA No.

Fees

No fees are required to participate.

Contact Information

Alaska Department of Environmental
Conservation
Contaminated Sites Remediation Program
Voluntary Cleanup Program
410 Willoughby Avenue
Juneau, AK 99811

Alaska Department of Environmental
Conservation Homepage:
<http://state.ak.us/dec/home.htm>

Arizona

Program
Voluntary Cleanup Program.

Administering Agency
Arizona Department of Environmental Quality
(ADEQ).

Authority
Ariz. Rev. Stat. Ann. section 49-282.05; section 49-285.01; 1997 Ariz. Sess. Laws Ch. 296 (S.B. 1304).

Date Established
1995, amended 1996 and 1997.

The Arizona VCP consists of three programs designed to promote brownfields redevelopment: the Greenfields Pilot Program, the Voluntary Remediation Program (VRP), and Prospective Purchaser Agreements. Each program provides liability assurances as well as ADEQ guidance and oversight to parties seeking to remediate and redevelop contaminated properties. The specific details of each program are discussed below.

The Greenfields Pilot Program

The Greenfields Pilot Program promotes the redevelopment of sites where contamination is limited to soil resources at relatively low concentrations. As a pilot program, availability is limited in number.

Eligibility**Sites**

Only 100 sites are eligible to participate. On-site contamination must be restricted to soils and a certified remediation specialist must verify that no ground water resources have been contaminated. Specific exclusions for sites include UST sites seeking funding from the Arizona Underground Storage Tank Assurance Account; sites under state or federal enforcement action; and sites containing a permitted hazardous waste facility.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

After successfully executing remedial activities, ADEQ issues participants a No Further Action letter that states that the cleanup was performed to agreed environmental standards and in compliance with applicable state and federal regulations. Participants are released from enforcement actions brought by ADEQ for contamination described in the original remediation agreement. The NFA letter is recorded with the deed to the property and indemnification automatically transfers to future owners of or parties with ownership interest in the site with a transfer of title.

In certain cases, where lower, site-specific standards are selected, ADEQ issues a Letter of Completion after remediation is completed. The letter states that the cleanup has met the specific standards for the site in question and includes a specialized voluntary environmental mitigation use restriction (VEMUR) clause—similar to a land use control.

Financial Assistance

The Water Quality Assurance Revolving Fund (WQARF) directs ADEQ to provide an array of incentives to promote the use of early and voluntary remedial actions, as well as the implementation of innovative pollution prevention and remediation technologies.

Under a grant administered by EPA, the Arizona legislature has created the Brownfields Revolving Fund—administered by EPA and ADEQ—to be used explicitly for site investigation activities. Brownfields Revolving Fund monies may only be allocated to projects in Phoenix and Tucson, Arizona.

Other Incentives

Participants are able to select from three levels of remediation standards depending on the future uses of the property: background levels (remediation must restore the site to conditions prior to contamination), risk-based levels predetermined by future land uses (remediation must adhere to statewide public health and environmental standards), and site-specific levels based on risk assessments (remediation levels are dependent on

specific geologic, hydrologic, and topographic site characteristics, as well as the nature and extent of contamination).

Projects where future land uses are determined to be nonresidential are eligible to implement relatively lower cleanup standards with the inclusion of a VEMUR agreement.

Oversight Procedures

A site application must be reviewed and approved by a certified remediation specialist before it is submitted to ADEQ; the application provides information including the scope of the site remediation and cleanup standards, a legal description of the site, and proof of financial capability to implement the cleanup program. Participants select the level of soil remediation standards appropriate for the future uses of the property and provide the specific details of the remediation plan, including contaminants targeted, current and future land uses, and proposed remediation technologies, in a Notice of Remediation to ADEQ. If appropriate, participants negotiate a VEMUR agreement to be filed as part of the property deed. After cleanup has been performed and approved by ADEQ, participants are issued an NFA letter or a Letter of Completion. ADEQ may revoke liability assurances, amend remediation requirements, or pursue further remediation enforcement if agreements are based on fraudulent information or if previously unknown contamination is discovered on the property.

Public Notice

Participants are required to post notifications of site remediation in a newspaper of general circulation in the county where the property is located and visible signs placed along a right-of-way in the vicinity of the property. Contact information must be included in notifications; however, no period for public review or commentary is required.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants are required to reimburse ADEQ for all incurred oversight costs.

The Voluntary Remediation Program

The impetus to modify existing voluntary remediation programs, as well as to create a comparable program for parties not eligible for the Greenfields Pilot Program, led to the current VRP operating in Arizona. Essentially, ADEQ waived certain procedures associated with involuntary cleanups to encourage voluntary site remediation. Liability assurances provided in the VRP are similar to those in the Greenfields Pilot Program; however, the application and implementation procedures are typically more complex.

Eligibility

Sites

All sites are generally eligible to participate; in addition, ADEQ may suspend an ongoing involuntary remedial action on a site if a VRP application for the site is approved.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

ADEQ does not offer a formal mechanism for liability assurances for sites remediated in the VRP; however, sites remediated in compliance with remedial agreements and state standards for water resources are issued informal letters of completion or site closure documents. These documents offer assurance that the site is removed from ADEQ priority listing, but are not protected from further remediation enforcement. Further liability immunity may be negotiated with ADEQ on a site-specific basis through individual Covenant Not to Sue settlements.

Financial Assistance

See discussion of Greenfields Pilot Program.

Participants are also able to pursue the recovery of costs for remediation among any responsible parties, as long as site remediation activities are performed in compliance with remedial action criteria. Remedial action criteria are considered on a proportional basis depending

on the nature and extent of contamination present, the amount of individual contaminants present, and the degree of responsibility a party demonstrates for the presence of such contamination.

Oversight Procedures

An application must be submitted to ADEQ that contains operational and legal records for the site, a site assessment, applicable state procedures and requirements, and proposed remediation plans. If approved, ADEQ may exempt VRP projects from various local and state permits or requirements—that are not subject to federal law—that would otherwise impede the project. Participants are required to remediate sites to levels dictated by established state water, soil, and public health standards. If cleanup occurs in compliance with these standards and the remediation plan, ADEQ issues appropriate completion or closure documentation; at this point, participants may enter negotiations with ADEQ to obtain a Covenant Not to Sue. All covenants, however, contain reopener clauses for the discovery of pre-existing contamination not included in the original VRP agreement.

Public Notice

Public notice of the proposed VRP remediation plan and an opportunity for public comment are required. In the case of a large, controversial site or a site listed on an ADEQ registry for hazardous sites may require more extensive community involvement such as public hearings and a formal community advisory board.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants are required to reimburse ADEQ for all incurred oversight costs.

Prospective Purchaser Agreements

The Prospective Purchaser Agreement (PPA) in Arizona is similar to many other states and is considerably more limited than the other voluntary remediation programs.

Eligibility

Sites

To be eligible for a PPA, site must satisfy the following criteria:

- The site must be listed on the Arizona WQARF registry or be acknowledged by ADEQ as a contaminated site;
- Proposed redevelopment plans must not exacerbate existing contamination or interfere with remedial actions or land use controls in a manner that would endanger public or environmental health;
- Proposed remediation and redevelopment must demonstrate a degree of benefit to the public; and
- ADEQ and local authorities must consult and agree on proposed redevelopment plans and provisions of the PPA.

Parties

All parties are generally eligible to participate, except responsible and contributing parties.

Incentives for Participation

Liability Assurances

After successfully completing remedial activities stated in the PPA, ADEQ provides a written release from liability and a Covenant Not to Sue related to all pre-existing contamination on the property. These documents provide immunity from third-party and contributor claims; however, participants are responsible for proving that site contamination existed before they purchased the property.

Financial Incentives

See discussion of Greenfields Pilot Program.

Oversight Procedures

Negotiation of a PPA requires no special environmental standards or remedial procedures as the prospective purchaser may not actually be actively conducting or linked to site remediation. ADEQ may invoke special provisions in the PPA, however, to assure that prospective purchasers are not

in any way responsible for contamination. In addition, ADEQ may insert a lien into the PPA to guarantee reimbursement for oversight costs related to the preparation of the agreement. ADEQ reserves the right to void a PPA if it is determined that a prospective purchaser can be held responsible for site contamination whether through direct negligence, contribution through a contractual agreement, or familial linkages.

Public Notice

Public notice is required through a public newspaper in the vicinity of the property that includes a site description and a summary of the provisions of the PPA; however, this responsibility is handled by ADEQ and not the prospective purchaser.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants are required to reimburse ADEQ for all incurred oversight costs.

Contact Information

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Brownfields Coordinator
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

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Manager, Voluntary Remediation Unit
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

Arizona Department of Environmental Quality
Homepage:

<http://www.adeq.state.az.us>.

Brownfields and other environmental legislation:
<http://www.azleg.state.az.us>.

Arkansas

Program
Voluntary Cleanup Program.

Administering Agency
Arkansas Department of Environmental Quality (ADEQ).

Authority
Ark. Code Ann. section 8-7-1101 *et seq.*

Date Established
1995, amended 1997.

Eligibility

Sites

Eligibility is restricted to abandoned industrial, commercial, or agricultural sites where a potentially responsible party (PRP) cannot be determined; ADEQ may exercise discretion to determine whether site remediation is feasible or in the best interest of the public.

Parties

Prospective purchasers who are not PRPs can take part in the program if they are financially viable and plan to redevelop the property for industrial, commercial, or agricultural activities that will create employment. ADEQ may restrict the future land uses (if different from prior operations) on the basis of project feasibility and potential threats to human or environmental health.

Incentives for Participation

Liability Assurances

Participants may be released from liability for contamination that occurred before they obtained title to the land, but only for contamination that was identified in a site assessment. When a remedial activity has been completed, ADEQ issues a Covenant Not to Sue, which may be transferred to successors of the purchaser. Comfort letters, which establish the limits of purchaser liability, are sent to both purchasers and lenders.

Financial Assistance

The Construction Assistance Revolving Loan Fund is administered by ADEQ to provide loans for the construction or rehabilitation of public wastewater systems, solid and hazardous waste facilities, recycling facilities, and other environmental infrastructure projects.

Within this program, the Remedial Action Account (RAA) reserves funding explicitly for prospective purchasers to finance the purchase and remediation of abandoned industrial, commercial, and agricultural sites (that are eligible for VCP participation). The RAA may not exceed a total of \$500,000 in any calendar year and \$4 million in aggregate.

Other Incentives

ADEQ is able to waive certain water quality standards on a site-specific basis where such regulations are preventative to remediation.

Oversight Procedures

The prospective purchaser must submit a comprehensive site assessment to ADEQ to establish a baseline of existing contamination and determine whether the site meets eligibility criteria. If accepted, the participant and ADEQ negotiate an administrative consent order to establish the liabilities, obligations, proposed uses, and necessary institutional controls associated with the site. The consent order is then filed with the clerk of the chancery court in the county where the site is located; any further modifications to the agreement must be filed through the court. In addition, a deed may be placed on the property to acknowledge the existence of the negotiated administrative consent order, should the original participant withdraw from the VCP; the provisions of the consent order are transferable to any subsequent prospective purchaser. The participant is then required to submit a remedial action plan that is subject to various criteria including the potential for exacerbation of site contamination, the potential threats to human and environmental health, and the feasibility to implement and maintain an institutional control. ADEQ assigns cleanup standards on a site-specific basis and reserves the right to approve, reject, or modify a remedial action plan. Following the successful implementa-

tion of a remedial action plan, participants are issued a Covenant Not to Sue relating to contaminants specified in the administrative consent order.

Public Notice

Prospective purchasers are required to publish a notification of the administrative consent order and intention to remediate a site in a local newspaper after negotiating the agreement.

ADEQ is required to provide public notice and opportunity to comment prior to approving a remedial action plan or waiving water quality standards for site-specific remediation projects.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

Purchasers are required reimburse ADEQ for all incurred oversight costs.

Contact Information

Mike Bates
Arkansas Department of Environmental Quality
Chief, Hazardous Waste Division
8001 National Drive
Little Rock, AR 72219-8913

Joe Hoover

Arkansas Department of Environmental Quality
Hazardous Waste Division
Manager, Active Sites Branch
8001 National Drive
Little Rock, AR 72219-8913

Jean Koeninger

Arkansas Department of Environmental Quality
Hazardous Waste Division
Manager, Inactive Sites Branch
8001 National Drive
Little Rock, AR 72219-8913

Arkansas Department of Environmental Quality
Homepage:
<http://www.adeq.state.ar.us>.

California

Program
Voluntary Cleanup Program.

Administering Agency
California Environmental Protection Agency,
Department of Toxic Substance Control (DTSC).

Authority
Cal. Health and Safety Code section 25300 *et seq.*

Date Established
1988.

Eligibility

Sites

Sites that are not on DTSC Annual Work Plan for the current fiscal year or are considered low priority by DTSC are eligible to participate except those sites listed on the NPL, sites containing federal facilities, or sites outside of DTSC jurisdiction. Sites that are currently under another agency's oversight are eligible for specified activities only if the primary oversight agency gives its consent.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

DTSC issues a No Further Action letter if no remediation is required for a site while a Certificate of Completion is issued after the required cleanup levels have been achieved; however, neither document contains a Covenant Not to Sue nor contribution protection. Parties seeking such liability assurances would need to negotiate a separate prospective purchaser agreement with DTSC.

Financial Assistance

The Urban Cleanup Loan Program is designed encourage brownfields redevelopment among private and public sector entities. The loan program consists of two parts relating to site investigation and site cleanup. The Investigating

Site Contamination Program provides low-interest loans of up to \$100,000 to conduct preliminary site assessments. The loans are to be repaid over a two-year period, only if the land is purchased by the loan recipient; if site investigation determines that site remediation and redevelopment will be unfeasible, DTSC may waive up to 75 percent of the initial loan. The Cleanup Loans and Environmental Assistance (CLEAN) Program provides loans of up to \$2.5 million for site remediation activities. To qualify for CLEAN funding, site redevelopment initiatives must be determined to be beneficial for the economic and environmental stability of an affected community.

The Mello-Roos Community Facilities Act provides alternative taxing mechanisms for redevelopment by authorizing community to create special districts, to modify taxing schemes, and to issue tax-exempt bonds to operate a fund to finance public infrastructure improvements and site remediation projects.

Amendments to the California Pollution Control Financing Act allow bond financing for soil and ground water remediation at sites that have reasonable economical redevelopment potential. Projects must adhere to local, state, and federal pollution control standards, maximize the potential for small business development, and create and retain jobs during and following site remediation.

Other Incentives

Participants may withdraw from the VCP with written notice; if advance oversight payments have not been usurped, participants will be refunded the balance of the deposit.

Oversight Procedures

Applicants must submit historical and legal records, as well as a site assessment to DTSC. After approving an application for the VCP, DTSC works closely with program participants to determine the scope, schedule, and estimated cost of state oversight including site investigations and characterizations; sample work plans; public and environmental health and risk assessments; public participation documents; establishment of remediation goals; and removal and remedial action plans. After a site is characterized and a proposed remediation plan,

as well as alternatives, have been developed, participants must submit a remedial action plan for DTSC approval when project costs are expected to exceed \$1 million; when project costs expected to cost less than \$1 million a remedial action work plan (RAW) is prepared.

A RAW may be approved without notification of the public and is typically less stringent than an RAP.

RAP agreements require extensive details pertaining to CERCLA provisions and risk-based standards for human and environmental health concerns.

DTSC is able to waive certain requirements for projects with costs that exceed \$1 million but that are less than \$2 million; projects with costs that exceed \$2 million are beholden to state and federal environmental and public health standards to maximum extent possible. In addition, both RAP and RAW documents must include institutional controls that reflect the proposed future uses of the property. After the remediation project has been successfully executed, DTSC issues a Letter of Completion.

Public Notice

The amount of required public participation is typically decided by the information provided in the initial VCP application—sites estimated to cost less than \$1 million to remediate require no public notice; however, projects involving sites listed under the Hazardous Substance Account Act are required to undergo a DTSC survey of potentially affected citizens and allow such persons to participate in the decision making process. In addition, citizens may petition for the formation of a citizens advisory committee. Any expenses associated with public notice and participation will be included in DTSC's oversight costs.

Memorandum of Agreement with U.S. EPA No.

Fees

DTSC requires an advance payment of half the estimated cost of oversight expenses. The cost is determined on the basis of the degree and scope of the remediation project. In addition, participants must reimburse DTSC for any additional incurred

oversight costs; if costs do not exceed the initial deposit, participants will be refunded the balance.

Contact Information

Sandy Karinen
Statewide Cleanup Operations Division
Department of Toxic Substances Control
Site Mitigation Program
P.O. Box 806
400 P Street
Sacramento, CA 95812-0806

California Environmental Protection Agency

Homepage:
<http://www.calepa.ca.gov>.

Department of Toxic Substances Control Homepage:

<http://www.dtsc.ca.gov>.

Colorado

Program
Voluntary Cleanup Program.

Administering Agency
Colorado Department of Public Health and Environment (CDPHE).

Authority
Col. Rev. Stat. section 25-16-301 *et seq.*

Date Established
1994.

Eligibility

Sites

All sites are generally eligible to participate, except sites listed on the NPL; sites under RCRA corrective action, sites subject to CDPHE State Water Quality Control Division enforcement action; sites permitted for the treatment or storage of hazardous waste; and sites under state UST jurisdiction.

Parties

The program is geared toward owners of contaminated sites; however, prospective purchasers may participate by obtaining a letter from site owners for cleanup authorization.

Incentives for Participation

Liability Assurances

If the site investigation and the remedial work plan are deemed adequate, CDPHE issues a No Further Action letter for the site. When remediation is not required, a No Action determination may be issued following the submission of a site investigation report. Neither document provides formal protection from further enforcement actions.

Financial Assistance

No financial assistance is available to private redevelopers; however, some funding may be extended to publicly- and privately-owned sites

through local governments and community development corporations.

EPA Region VIII provides funding for site assessments for projects that are dedicated to public use.

Colorado established a Brownfields Revolving Loan Fund under an EPA Brownfields Cleanup Revolving Loan Fund Pilot. Eligible sites within the metropolitan area of Denver, Colorado, as well as the Sand Creek Brownfields Pilot Project Study Area, may receive loans of up to \$425,000 for site assessment and remediation activities. To be eligible, parties cannot have defaulted on prior state or federal loans and cannot be contributors to site contamination.

Oversight Procedures

Applicants submit information including legal and operation records and a preliminary site assessment to CDPHE. If no remediation is required, applicants may petition for a No Action determination. A No Action determination may be issued if contamination levels do not exceed applicable CDPHE standards or can be demonstrated to have migrated from an off-site source; however, CDPHE may refuse to issue a No Action determination if assessments cannot prove that an on-site source of contamination is also responsible for contamination. Under such circumstances, CDPHE may issue a provision stating that the participant is not required to address the off-site contamination in a remediation project. Where remediation is required, participants must submit a Voluntary Cleanup Plan to CDPHE including a detailed site assessment, proposed land uses, and applicable state and federal regulations. The site assessment must be performed by a qualified environmental professional and provide detailed information relating to the site including the nature and extent of contamination, a soil and ground water survey, and an assessment of potential contaminant migration and exposure to the public. If approved, CDPHE will determine the required level of remediation standards and institutional controls on the basis of potential threats to human and environmental health. Following site remediation, participants are encouraged to perform follow-up sampling and prepare a completion report with the assistance of

a qualified environmental professional. If the remediation is executed in compliance with the Voluntary Cleanup Plan, CDPHE issues an NFA letter. CDPHE may rescind the letter if plans are not fully completed or are based on fraudulent information. CDPHE is not able to enforce cleanup measures under the VCP, but may leverage federal enforcement actions where applicable.

Public Notice

Not required; however, all documents filed with CDPHE relating to the VCP are available under public domain.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

Parties must include a \$2,000 deposit with an application. Applicants are refunded any remaining balance from the fee. If review costs exceed the \$2,000 deposit, CDPHE will bear the extra costs.

Contact Information

Dan Scheppers
Superfund and Voluntary Cleanup Unit Leader
Colorado Department of Public Health and
Environment
Hazardous Materials and Waste Management
Division
4300 Cherry Creek Drive South
Denver, CO 80222-1530

Colorado Department of Public Health and
Environment Homepage:
<http://www.cdphe.state.co.us>.

Colorado Department of Public Health and
Environment Remedial Programs:
http://www.cdphe.state.co.us/hm/ro_gen.html.

Connecticut

Program

Voluntary Cleanup Program: 95-183 and 95-190 Programs.

Administering Agency

Connecticut Department of Environmental Protection (DEP).

Authority

Conn. Gen. Stat. section 22a-133a *et seq.*

Date Established

1995, revised 1998.

Connecticut's VCP is divided into two distinct programs based on the nature of site ground water classifications. The 95-183 Program pertains to sites with GA (safe for direct human consumption without treatment) or GAA (may be used for or contribute to public water supplies) ground water classifications. The 95-190 Program deals with sites classified as GB (presumed unsuitable for human consumption without treatment) or GC (presumed permanently unsuitable for human consumption because of the presence designated pollutants or influent discharges) ground water resources.

95-183 Program

Eligibility

Sites

Sites that are listed on Connecticut's Inventory of Hazardous Waste Disposal Sites, properties in the area of GA or GAA groundwater resources, and sites listed as "establishments" under Connecticut's Property Transfer Act are eligible to participate in the 95-183 Program.

Parties

Owners, operators, and prospective purchasers of the aforementioned sites are eligible to participate.

Incentives for Participation

Liability Assurances

A Covenant Not to Sue is issued to eligible parties following the completion of a site assessment, the notification of the potentially affected segments of the public, and the approval of a remediation plan. The nature of specific Covenants Not to Sue is left to the discretion of DEP.

Financial Assistance

Loans are available for approved VCP applicants through the Special Contaminated Property Remediation and Insurance Fund (SCPRIIF). These funds may be used to pay for Phase II and III site assessments or demolition costs required to prepare a site for further investigation or actual remediation. In addition, the Urban Sites Remediation Program (discussed below) provides bonds for remediation projects that involve underutilized or abandoned industrial properties.

Oversight Procedures

The applicant must provide DEP with an environmental condition assessment form and a fee of \$2,000. DEP then decides whether remediation is necessary. If so, DEP determines whether remediation can be verified by a licensed professional, or must be verified by DEP firsthand. Once remediation is approved, the party may be issued a Covenant Not to Sue. A covenant may be re-opened or voided if site remediation is not carried out as planned, unforeseen contaminants are discovered, or the original agreement is based on fraudulent information.

Public Notice

Participants must notify the director of health and a local newspaper in the municipality where the site is located. In addition, participants must provide public notice of the project and contact information via: a six foot by four foot sign on the site for thirty days or notice by mail to all adjacent property owners.

Memorandum of Agreement with U.S. EPA No.

Fees

Applicants must pay a \$2,000 fee for application review at the outset of the project.

95-190 Program

Eligibility

Sites

Eligible sites include those designated by DEP with GB or GC rankings that are not subject to any outstanding DEP enforcement measures.

Parties

There are no restrictions placed on participants to the 95-190 VCP program.

Incentives for Participation

Liability Assurances

See discussion of the 95-183 VCP.

Financial Assistance

See discussion of the 95-183 VCP.

Public Notice

See discussion of 95-193 Program.

Memorandum of Agreement with U.S. EPA No.

Oversight Procedures

Participants must hire a licensed environmental professional (LEP) to perform site assessments and to prepare a remedial action plan (RAP). The RAP must be evaluated and approved by DEP prior to implementation. Once approved, the RAP must be performed in strict adherence to specified terms. Participants must also apply for all necessary permits to execute the RAP. Following the completion of the project, the LEP must submit a final report to DEP summarizing the remediation activities performed. DEP determines whether or not the site has been satisfactorily remediated, or if an audit is to be performed that could require additional cleanup efforts.

Fees

Fees in the 95-190 VCP are restricted to costs required to hire an LEP and to apply for and

obtain the permits required to remediate the property.

Urban Sites Remediation Program

Connecticut has additional legislation enacted to encourage brownfields redevelopment in the Urban Sites Remediation Program.

The Urban Sites Remediation Program offers bond funds to brownfields properties in “distressed” municipalities, “targeted investment” communities, state-owned facilities, and properties where PRPs cannot be determined. Drawing on state bond allocations of \$30.5 million, funding may be used to investigate and remediate urban brownfields. Participants may be eligible for loans for (1) professional site assessment costs, (2) demolition costs, and (3) administration costs. Loan applications are considered on the basis of potential commercial property value increases, potential tax revenues, potential risks to public and environmental health, and potential economic development benefits to a municipality. Participants must repay the loan after the sale or lease of the property or after DEP approves a final remedial-action report.

Contact Information

Douglas C. Zimmerman
Urban Sites Remedial Action Program
Connecticut Department of Environmental
Protection
79 Elm Street
Hartford, CT, 06106-5127

Peter Simmons
Community Development Specialist
Connecticut Department of Economic and
Community Development
505 Hudson Street
Hartford, CT, 06106-7106

Connecticut Department of Environmental
Protection Homepage:
<http://www.dep.state.ct.us>

Connecticut Department of Economic and
Community Development Homepage:
<http://www.state.ct.us/ecd>

Delaware

Program
Voluntary Cleanup Program.

Administering Agency
Delaware Department of Natural Resources and Environmental Control (DNREC).

Authority
Del. Code Ann. Tit. 7 section 9101 *et seq.*, section 9107 (a) and (b), section 9108 *et seq.*

Date Established
1995.

Eligibility

Sites

All sites are generally eligible to participate unless contamination levels (1) in soils or groundwater exceed DNREC indexes for human cancer or hazard risks; (2) are detected in soils or groundwater near a public well; (3) affect a surface water resource used for public or domestic drinking water; (4) are subject to RCRA corrective action; or (5) are determined by DNREC, for any other reason, to be prohibitive the applicant's involvement in the VCP (DNREC must provide written documentation to the applicant for such a preclusion.)

Parties

All parties are eligible to participate except parties responsible for site contamination.

Incentives for Participation

Liability Assurances

DNREC has developed screening levels for certain soil and groundwater contaminants. No Further Action letters will be issued to parties when site contaminant levels are below screening levels. An NFA letter does not provide the same protection to owners, operators, or proprietors of activities on the remediated site as a Certificate of Completion of Remedy, which is issued to a participant after remediation has been completed and approved by DNREC.

Financial Assistance

The Delaware Economic Development Office (DEDO) is authorized to offer grants of up to \$25,000, to be matched by the applicant, for site assessment and remediation. Grants are awarded after site assessments have been completed, but prior to site cleanup efforts. To qualify, a party must demonstrate that site remediation will serve a public purpose by creating employment, diversifying business, or increasing the state's tax base. Sites that are the subject of an enforcement action by DNREC are ineligible for the grant.

Tax credits may be administered by the Delaware Division of Revenue (DDR) to compensate up to the full amount of taxes incurred for site assessment and remediation. DDR awards tax credits based on a project's potential to generate job opportunities in disadvantaged areas as designated by "targeted census tracts."

Under the Delaware Hazardous Substance Control Act, DNREC and DEDO are able to offer small loans to PRPs with small business or nonprofit organization status that have been accepted into the state VCP. Loans may not exceed 90 percent of total remedial costs or \$250,000, nor may the terms of a loan exceed ten years.

DNREC is able to extend funds under a revolving loan program of the federal Water Pollution Control Act to hazardous waste sites that could potentially contaminate surface or groundwater supplies, or threaten sediment integrity. Loans range from \$10,000 to \$250,000, but cannot exceed 90 percent of project costs. DNREC reserves the right to require satisfactory collateral for loans.

Delaware law also allows VCP participants to bring legal action against responsible parties to recover site assessment and remediation, as well as DNREC oversight, costs.

Other Incentives

Participants may terminate VCP involvement at any time with written notice to DNREC; however, responsible parties may be required to remediate any contamination that is exacerbated by their actions.

Oversight Procedures

After a contaminated site is identified and a party is accepted into the program, participants enter into an agreement with DNREC and submit the name of their environmental consultant and laboratory for DNREC's approval. The participant must provide DNREC with all studies, reports, and any other data about the site. Properties with contaminant levels below state screening levels may receive a No Further Action letter at that point. If remediation is necessary, the state will use risk-based standards to determine the appropriate level of cleanup. Certificates of Completion of Remedy are issued to those completing the cleanup process outlined in the agreement with DNREC.

Public Notice

DNREC is required to make public notice of a proposed remedial action plan in a local newspaper. The notice must describe the site, summarize the proposed actions and the review process, and invite public comment.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

Participants make an initial \$5,000 deposit to reimburse DNREC for any incurred oversight costs.

Contact Information

Delaware Department of Natural Resources and
Environmental Control
Division of Air and Waste Management
Site Investigation and Restoration Branch
391 Lukens Drive
New Castle, DE 19720
Attn: Mr. N.V. Raman, Manager, SIRB

Delaware Department of Natural Resources and
Environmental Control Homepage:
<http://www.dnrec.state.de.us>

Site Investigation and Restoration Branch
Homepage:
<http://sirb.awm.dnrec.state.de.us>

District of Columbia

The District of Columbia does not have a voluntary cleanup program. Any voluntary cleanup plan initiated by a private party for a contaminated property within the District of Columbia would fall under the jurisdiction of EPA Region III for review as part of the agency's regional brownfields initiatives.

Contact Information

Tom Stolle
U.S. Environmental Protection Agency
Region III
Regional Brownfields Coordinator
841 Chestnut Building
Philadelphia, PA 19107

Josie Matsinger
U.S. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, PA 19107

Florida

Program

Voluntary Cleanup Program (Brownfield Redevelopment Act of 1997).

Administering Agency

Florida Department of Environmental Protection (DEP).

Authority

Fla. Stat. section 376.77 *et seq.*

Date Established

1997.

Eligibility

Sites

All sites are generally eligible to participate unless they are undergoing federal enforcement investigation, such as NPL sites and sites subject to CERCLA and RCRA action, or hold a permit allowing the presence, storage, or transport of hazardous wastes; however, sites that face state corrective action may become eligible for VCP programming if site remediation will create at least ten new jobs and interim cleanup activities have been performed in good faith with existing corrective requirements.

Parties

All parties that have not contributed to the contamination of a brownfields site after July 1, 1997 or excluded by statute are generally eligible to participate in the Florida VCP

Incentives for Participation

Liability Assurances

A No Further Remediation letter or a Site Rehabilitation Completion letter is issued to participants that complete site remediation as specified in a Brownfield Site Rehabilitation Agreement filed with DEP. Liability protection is extended to third-party participants in the remediation process including lending institutions and successive property owners.

Financial Assistance

Under the Brownfield Redevelopment Act, the Florida Office of Tourism, Trade, and Economic Development (OTTED) is assigned the duty of determining and listing industries that would benefit from redevelopment funding due to economic downsizing and contamination issues. With such a designation, targeted industries become eligible for tax credits by generating new employment opportunities in typically disadvantaged areas. Excluded from this program are retail industries, electrical utilities facilities, phosphate or solid minerals operations, petrochemical exploration and refining industries, and industries regulated by the Florida Division of Hotels and Restaurants.

In addition, the Florida legislature has appropriated \$3 million to OTTED to distribute Brownfields Redevelopment Grants to eligible local governments to set up and implement programs that promote brownfields redevelopment. Funding is limited to local governments and political subdivisions that applied or were designated to participate in EPA's Brownfields Pilot Project Grant Program. The program encourages state and local governments to offer a variety of economic incentives to promote private sector participation in the program. Incentives may include financial, regulatory, and technical assistance.

OTTED also offers Brownfields Redevelopment Bonus Refunds of \$2500 to any business in a qualified target industry for each new Florida job created through brownfields redevelopment.

In 1998, the Florida legislature enacted three statewide programs to provide financial incentives to VCP applicants. Effective May 24, 1998, the Florida legislature also created a tax credit incentive for intangible personal property or corporate income taxpayers in the amount of 35 percent of the costs of any voluntary cleanup activity integral to site rehabilitation, up to \$250,000 per site. The credits may be transferred once to a new property owner. If tax credits exceed the tax liability, the taxpayer may carry forward the unused credits for up to five years. However, this tax credit closed application eligibility as of December 31, 1998.

Amendments to the Brownfield Redevelopment Act created the Brownfield Area Loan

Guarantee Program. After taking effect July 1, 1998, the program provides up to five years of loan guarantees or loan loss reserves for primary lender loans for brownfields redevelopment.

Finally, the Brownfield Property Trust Fund Bill created the Brownfield Property Ownership Assistance Revolving Loan Fund. These loans are also available on a five-year basis and are administered by OTTED to local governments, community development corporations, and nonprofit organizations involved in brownfields redevelopment.

Oversight Procedures

After the state designates brownfields sites, the party responsible for a particular site must contact DEP or the local pollution control program to negotiate a Brownfield Site Rehabilitation Agreement (BSRA). The BSRA includes provisions relating to the site-specific cleanup schedule, time frames for regulatory review of documents, conditions for site access, environmental professional requirements, and terms for redevelopment of the site as agreed to by the person responsible for the site rehabilitation and the appropriate local government agency. All BSRA agreements include public notice requirements and the establishment of an advisory committee to improve public participation and to provide regulatory oversight for the cleanup process. DEP is specifically authorized and encouraged to establish delegation agreements with local pollution control programs to have local governments administer their own brownfields program. The BSRA also includes risk-based standards for each brownfields site. After successfully executing a BSRA, DEP issues an NFR letter or a Site Rehabilitation Completion letter. DEP reserves the right to reopen or nullify a BSRA, an NFR letter, or a Site Rehabilitation Completion letter, if cleanup criteria are not met, undetected contamination is discovered, releases occur after the initial agreement, land use plans change significantly that would require a higher level of remediation, or the initial agreement is determined to be fraudulent.

Public Notice

Local governments must conduct public hearings when considering the designation of a brownfields area for rehabilitation. In addition, residents in the immediate vicinity of a proposed remediation site must be given notice and the opportunity for comment.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

No fees are required to participate.

Contact Information

Lisa Duchene
Management Review Specialist
Florida Department of Environmental Protection
2600 Blair Stone Road
MS 4505
Tallahassee, FL 32399-2400

Florida Department of Environmental Protection
Homepage:
<http://www.dep.state.fl.us>

Information on Brownfields Legislation and
Programming:
[http://www.dep.state.fl.us/dwm/programs/
brownfields](http://www.dep.state.fl.us/dwm/programs/brownfields)

Georgia

Program
Voluntary Cleanup Program.

Administering Agency
Georgia Department of Natural Resources, Environmental Protection Division (EPD).

Authority
Ga. Code Ann. section 12-8-96.3, section 200 *et seq.*

Date Established
1996, amended 1998.

Georgia's VCP consists of two complementary statutes, the Hazardous Site Reuse and Redevelopment Act (Reuse Act) and the Hazardous Site Response Act (HSRA). Both laws provide liability assurances to parties interested in purchasing and remediating contaminated sites.

Hazardous Site Reuse and Redevelopment Act

Eligibility

Sites

Contaminated sites that are listed on the Georgia Hazardous Site Index (HSI) are eligible for Reuse Act participation; however, sites that are listed on the NPL, sites currently under federal cleanup jurisdiction, or sites classified as a hazardous waste facility are excluded from Reuse Act participation.

Parties

All parties are generally eligible for Reuse Act VCP participation and are referred to as "prospective purchasers." However, parties may be excluded from the program if they contributed to site contamination directly; are the blood relative, current or former employee, employer, partner, or subsidiary of persons responsible for site contamination; or are under investigation or prosecution for any order under the jurisdiction of EPD. In certain cases, EPD may grant variances to eligibility requirements that allow relatives or associates of parties responsible for site contamination to conduct investigative and remedial activities

where no other prospective purchasers are identified.

Incentives for Participation

Liability Assurances

Prospective purchasers are released from liability for site contamination after successful completion of remediation as filed in a remedial action plan with EPD. Indemnification may be transferred to heirs and other successive property owners, but cannot absolve any party that is determined to be responsible for or in any way affiliated with site contamination. In addition, the 1998 amendments to the Reuse Act provide liability assurances to third-party members involved in site remediation.

Financial Assistance

No financial assistance is available at this time.

Oversight Procedures

Prospective purchasers must first submit a redevelopment plan to EPD and, if remediation is necessary, a remedial action plan. In addition, a prospective purchaser must demonstrate the ability to finance the implementation of a RAP. EPD requires that RAPs designate and adhere to cleanup standards determined by the current and future land use status of a site. At any time, EPD can require modifications to the plan on the basis of potential threats to human and environmental health. When participants have completed cleanup activities, they must deliver a compliance status report certifying that a site has been remediated to comply with EPD standards. Depending on the pre-existing nature and extent of site contamination, EPD may require additional contractual agreements that ensure long-term monitoring and land use restrictions on a remediated site.

Public Notice

Public notice of and a period for public commentary on a proposed corrective action plan are required.

Memorandum of Agreement with U.S. EPA No.

Fees

No fees are required to participate.

Hazardous Site Response Act

Eligibility

Sites

All contaminated sites that are listed on the Georgia Hazardous Site Index (HSI) are generally eligible for HSRA participation.

Parties

All parties are generally eligible for HSRA participation and are referred to as “bona fide purchasers.” However, similar to the Reuse Act, parties may be excluded from the program if they contributed to site contamination directly; are the blood relative, current or former employee, employer, partner, or subsidiary of persons responsible for site contamination; or are under investigation or prosecution for any order under the jurisdiction of EPD. In addition, parties that own or operate an UST; a solid waste handling, treatment, or disposal facility; or a hazardous waste facility are excluded from HSRA consideration.

Incentives for Participation

Liability Assurances

Prospective purchasers are released from liability for site contamination after successful completion of remediation as filed in a remedial action plan with EPD.

Financial Assistance

No financial assistance is available at this time.

Oversight Procedures

Bona fide purchasers must submit a redevelopment plan to EPD and, if remediation is necessary, a remedial action plan. EPD requires that RAPs designate and adhere to cleanup standards determined by the current and future land use status of a site. HSRA sites are also required to schedule for the successful completion of a corrective action in a period of one year, although EPD may grant extensions in situations where a bona fide purchaser has made every attempt to complete the

project in a one-year period. After receiving consent from EPD, a bona fide purchaser may complete land acquisition processes and initiate corrective actions. At any time, EPD may require modifications to the plan on the basis of potential threat to human and environmental health. When participants have completed remedial activities, they must deliver a compliance status report certifying that the site has been cleaned to EPD standards. Depending on the pre-existing nature and extent of site contamination, EPD may require additional contractual agreements that ensure long-term monitoring and land use restrictions on a remediated site.

Public Notice

See discussion of Hazardous Site Reuse and Redevelopment Act.

Memorandum of Agreement with U.S. EPA No.

Fees

No fees are required to participate.

Contact Information

Timothy J. Ritzka, Esq.
Assistant Attorney General
State Law Department
40 Capitol Square, S.W.
Atlanta, GA 30334

Georgia Department of Natural Resources,
Environmental Protection Division Homepage:
<http://www.ganet.org/dnr/environ/>

Hawaii

Program
Voluntary Response Program (VRP).

Administering Agency
Hawaii Department of Health, Hazard Evaluation and Response Office (DOH).

Authority
Haw. Rev. Stat. section 128D-1 *et seq*, section 128D-31 to 41.

Date Established
1997.

Eligibility

Sites

All sites are generally eligible to participate; the primary consideration for eligibility is whether a site will pose a serious threat to the public or environmental health and the eventual requirement for state involvement outside the VRP. Sites that are proposed for listing or listed on the NPL; undergoing any CERCLA or RCRA investigation or enforcement; identified by the U.S. Coast Guard in a federal Letter of Interest; or designated by DOH to present substantial environmental or public health risks are excluded from participation.

Parties

Property owners or parties with the property owner's consent are generally eligible to participate.

Incentives for Participation

Liability Assurances

DOH will issue a Letter of Completion for the specific property and contaminants remediated. The letter represents a future liability exemption for current owners and prospective purchasers, and is transferable to prospective purchasers.

Financial Assistance

No financial assistance is available at this time.

Oversight Procedures

If eligible, a requesting party submits an application to DOH providing information necessary to evaluate the corrective action proposal. If the proposal is approved, the participant enters into an agreement with DOH that specifies the scope of work and the roles and responsibilities of each party to the agreement. Once an agreement is reached, DOH oversees site remediation until completion. After site remediation is successfully completed, DOH issues a Letter of Completion.

Public Notice

Public notice of a voluntary response action must be published in a local newspaper prior to the initiation of remedial activity. A period for public review and commentary on a proposed voluntary response action are also required.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants must pay a nonrefundable \$1,000 application processing fee. If the proposal is approved, the participant must pay an additional \$5,000, which will be used to pay for any oversight costs. If the account falls below \$1,000, the participant will be asked to pay an additional \$5,000. Any monies remaining in the account will be refunded when oversight procedures are completed.

Contact Information

Hawaii Department of Health
Hazard Evaluation and Emergency
Response Office
Room 206
919 Ala Moana Boulevard
Honolulu, HI 96814

Hawaii Department of Health Homepage:
<http://mano.icsd.hawaii.gov/doh/eh/heer/index.html>

Idaho

Program
Voluntary Remediation Program.

Administering Agency
Idaho Department of Environmental Quality (DEQ)
and the Idaho Tax Commission.

Authority
Idaho Code sections 39-7201 to 39-7210 63-602BB.

Date Established
1996.

Idaho's VRP is jointly administered by DEQ and the Idaho Tax Commission. Remedial standards and liability assurances for VRP participants are administered by DEQ while the Idaho Tax Commission provides a conditional tax break to properties remediated under VRP guidelines.

Eligibility

Sites

All sites are generally eligible to participate except sites that pose an imminent threat to human or environmental health, or if site is already required to be remediated under an existing state or federal statute. However, state or federal enforcement does not preclude participation in the VRP; this decision is made at the discretion of DEQ. Moreover, sites contaminated by petroleum and hazardous wastes are eligible for VRP consideration.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

Upon satisfactory completion of site cleanup, DEQ will issue a Certificate of Completion to VRP participants. After receiving the COC, applicants may request a Covenant Not to Sue from DEQ. DEQ is obligated to negotiate such an agreement that will exonerate the applicant and subsequent property owners from further state-level enforcement action; however, protection from citizen or

federal legal actions is not part of current VRP legislation.

Financial Assistance

Under the Idaho Land Remediation Act, site owners or operators that have been issued a COC and negotiated a Covenant Not to Sue, qualify for a seven-year partial property tax exemption. The exemption, administered by the Idaho Tax Commission, entitles the participant to a 50 percent reduction in local property taxes on the remediated land value (the land value determined by subtracting the land value prior to the issued COC from the theoretical increased land value after site remediation.) Factors that affect the future value of remediated properties are restricted to the initial one-year corrective action term. Thus, subsequent redevelopment projects that fall outside of the one-year term, regardless of the increase to local property values, will not affect the value of the tax credit. In addition, the tax credit is voided if the property is sold after remediation occurs, and a new owner will have to bear the full costs of any increases in property tax values.

Other Incentives

If DEQ rejects a voluntary remedial action (VRA) work plan, participants may withdraw from the program, so long as a formal contractual agreement has not been negotiated, and are released from any further obligations related to the site.

Oversight Procedures

Applicants to the VRP must submit an application to DEQ providing background site information and an environmental assessment performed according to guidelines established by the American Society for Testing and Materials. If accepted, participants are required file a work plan and negotiate a VRA work plan with DEQ prior to the review process. Both documents outline specific procedures in the remediation process and are reviewed by either DEQ or an independent contractor; ultimately any proposed work plan must be approved or rejected by DEQ. In addition, DEQ may modify the work plan and return the plan to the applicant for consideration. Yet the applicant maintains control of the review process and reserves the right to

propose new modifications, accept the modifications of DEQ, or to halt the review and negotiation process without the exchange of any further information regarding the site in question. However, if a VRA has been accepted, only a breach of the contract by either party can terminate the VRP process. DEQ also reserves the right to void a VRA or Covenant Not to Sue if the participant fails to comply with the processes stated in the initial agreements or circumstances arise that pose new threats to human health or the environment.

Public Notice
Not required.

Memorandum of Agreement with U.S. EPA
No.

Fees
Applicants are required to submit a nonrefundable \$250 fee to pay for the application review process. In addition, participants are required to make a \$2,500 deposit to DEQ to fund any incurred oversight cost; additional \$2,500 deposits may be required at large, complex sites.

Contact Information
Dean Nygard
Bureau Chief, Remediation
Division of Environmental Quality
1410 N. Hilton
Boise, ID 83706

Alan S. Dornfest, Esq.
Administrator
Legal/Tax Policy
Idaho State Tax Commission
800 Park Boulevard, Plaza IV
P.O. Box 36
Boise, ID 83722-0150

Idaho Department of Environmental Quality
Homepage:
<http://www2.state.id.us/deq/>

Illinois

Program
Voluntary Cleanup Program—"Site Remediation Program."

Administering Agency
Illinois Environmental Protection Agency (Illinois EPA).

Authority
Ill. Admin. Code Tit. 35, Parts 740 and 742.

Date Established
Illinois has operated a voluntary cleanup program since 1986. The program was formally codified in 1989 and amended in 1995.

Eligibility

Sites
All sites are generally eligible to participate except known or proposed NPL sites; solid or hazardous waste treatment, storage, or disposal sites requiring permits relating to or under enforcement by state or federal jurisdiction; sites beholden to state or federal UST regulations; and sites under remedial investigations or enforcement actions by EPA or federal court mandates.

Parties
All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances
Parties whose remediation efforts are considered to be sufficient by Illinois EPA receive a No Further Remediation letter, which states that the site does not represent a threat to human or environmental health. The letter becomes a permanent part of the property deed and notifies both sellers and buyers of remediation activities performed at the site. NFR letters may require specific land use controls, such as industrial or commercial activities, or engineering controls to contain contamination left on-site. A change in land use on a remediated site could nullify the liability protection of the NFR letter.

Financial Assistance

The Brownfields Redevelopment Grant Program was added to the Illinois Environmental Protection Act to assist in the preliminary stages of brownfields redevelopment. Although funding measures are unspecified, applicants may seek state assistance for site assessment and planning activities; however, remedial plan implementation costs are not eligible for grant funding.

Environmental Remediation Tax Credit grants provide a transferable property tax credit for up to 25 percent of eligible remediation costs (at least \$100,000, with exceptions for sites located in enterprise zones, but not exceeding \$700,000) incurred pursuant to the Illinois Site Remediation Program. To participate, the applicant cannot be considered responsible for site contamination and must have received a NFR letter from Illinois EPA. Annual credits may not exceed \$40,000 during the first three years of the grant and shall not exceed an aggregate sum of \$150,000. Finally, the credit cannot reduce taxpayer liability to zero.

Cook County provides tax incentives for properties within county borders involved in the Illinois VCP. Projects are eligible for the Cook County Class 6c Incentive if site remediation costs are equal to or exceed \$100,000 (or are at least 25 percent of the property's market value at the time of acquisition.) The incentive reduces property taxes during remediation (for up to three years) to 16 percent of the assessed market value of the site. In addition, the Cook County Class 6b incentive may extend the tax reduction for up to ten years and a special extension for three additional years may be granted to projects with exceptionally high remediation costs.

Oversight Procedures

An application must be filed with Illinois EPA; if approved, VCP participants are required to negotiate an oversight agreement with Illinois EPA. Participants may select Illinois EPA to perform oversight duties or a licensed professional engineer (pending Illinois EPA approval.) Illinois EPA can also assist with the establishment of remediation objectives, the collection and analysis of samples, the maintenance of community relations, and the coordination and communica-

tion with other state employees or program participants. Participants must prepare a report that includes a comprehensive site assessment. If contaminants are revealed on-site, the participant is required to file a second report describing remediation objectives. The degree of remediation activities and state oversight is largely determined by the participant (and future land uses), but must be evaluated on a site-specific basis and must be compliant with Illinois EPA standards. If specific contaminant levels exceed Illinois EPA standards, a remedial action plan must be prepared, which includes details governing remediation technologies; contaminant treatment, transport, storage, and disposal mechanisms; land use controls; and project schedules and cost estimates. Finally, participants must prepare a final report following remediation that describes how the remedial action plan was fulfilled. Illinois EPA reviews and evaluates all work plans, environmental site assessment reports, remedial action plans, and completion reports to determine whether site remediation has been performed in an acceptable manner and issues an NFR letter. Illinois EPA reserves the right to void an NFR letter for failure to comply with remediation provisions in the Illinois Environmental Protection Act or any portions of plans and objectives submitted by VCP participants.

Public Notice

Recommended, but not required.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

Participants are required to compensate Illinois EPA for any incurred oversight costs. If participants select Illinois EPA for oversight duties, a partial payment may be included when the initial application is filed. Participants may also ask Illinois EPA to provide a preliminary estimate of oversight costs and to negotiate a partial payment for one-half of the total costs, up to \$5,000, whichever amount is less.

Contact Information

Steve Colantino
 Brownfields Coordinator
 Illinois Environmental Protection Agency
 Bureau of Land
 1001 North Grand Avenue East
 Springfield, IL 62702

Illinois Environmental Protection Agency
 Homepage:
<http://www.epa.state.il.us>

Indiana

Program
 Voluntary Remediation Program.

Administering Agency
 Indiana Department of Environmental Management (IDEM).

Authority
 Ind. Code Ann. section 13-25-5-1 *et seq.*

Date Established
 1993.

Eligibility**Sites**

All sites are generally eligible to participate except sites that are subject to a state or federal enforcement action; sites that pose an immediate threat to human health and the environment.; sites where a federal grant requires IDEM to take enforcement action; sites that contain asbestos or lead paint; or sites that are governed by discharge permits regulating hazardous emissions to air or water.

Parties

All parties are generally eligible to participate.

Incentives for Participation**Liability Assurances**

If site remediation complies with negotiated agreements, IDEM issues VRP participants a Certificate of Completion. Participants may then apply to the governor of Indiana for a Covenant Not to Sue, which protects the holder from any public or private claims regarding site contamination addressed in the initial VRP agreement. The Covenant Not to Sue applies to any party receiving a legal transfer of the COC or purchasing the property containing the site.

Financial Assistance

The Indiana Development Finance Authority has established the Environmental Remediation Revolving Loan Program to create a priority ranking system for awarding monies to local

governments and other public entities to identify, assess, and remediate contaminated properties.

Participants in the Indiana VRP that have fulfilled the requirements to obtain a COC are eligible for real and property tax abatements if sites under remediation are located in Brownfield Redevelopment Zones (BRZs). BRZs and site-specific levels of tax abatement are established by local governments for periods of three, six, or ten years. However, BRZs must be established prior to and specified in a VRP application to be eligible for any tax relief incentives. In addition, unlike general VRP eligibility criteria, a party deemed responsible for site contamination cannot receive a BRZ tax abatement.

Properties containing USTs are eligible for financial assistance for removal and remediation of up to \$1 million per tank on sites not utilized for the marketing or petroleum. USTs in question must comply with state UST regulations and, depending on the integrity of specific USTs, deductible amounts may range from \$25,000 to \$35,000.

Oversight Procedures

An application must be filed with IDEM; if approved, VRP participants are required propose a voluntary remediation work plan including a comprehensive site assessment, a list of remediation goals, technologies, and alternatives, as well as a tentative schedule for implementation. The degree of remediation activities and state oversight is largely determined by the participant (and future land uses), but must be evaluated on a site-specific basis and must be compliant with IDEM standards. If the work plan is approved, participants must then enter a voluntary remediation agreement with IDEM. The agreement requires more detailed project information including a list of estimated oversight costs, a mechanism for dispute resolution, and an indemnification agreement. At this point, IDEM may approve, reject, or modify the voluntary remediation agreement; rejections may be appealed in be appealed in an appropriate circuit or superior court. After the voluntary remediation agreement has been fulfilled, IDEM issues VRP participants a COC, which qualifies participants for a Covenant Not to Sue. However, IDEM reserves the right to

reopen a covenant if contamination surfaces that was overlooked at the time of inception for the original COC.

Public Notice

IDEM is required to post notification of approved work plans to the local government in which a site is located and in a local library, as well as invite public commentary.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

The Indiana VRP requires participants to pay an initial \$1,000 application fee and to reimburse IDEM for all incurred oversight costs.

Contact Information

Dana Reed Wise
Brownfields Coordinator
Indiana Department of Environmental
Management
2525 N. Shadeland
P.O. Box 6015
Indianapolis, IN 46202-6015
Indiana Department of Environmental
Management, Office of Land Quality Homepage:
<http://www.state.in.us/idem/olq/index.html>

Iowa

Program
Land Recycling Program (LRP).

Administering Agency
Iowa Department of Natural Resources (DNR).

Authority
Iowa Code Ann. section 455H.101 *et seq.*

Date Established
1997.

Eligibility

Sites

All sites are generally eligible to participate except sites containing petroleum USTs; sites placed on or proposed for inclusion on the NPL; sites containing animal feeding operations; sites under the enforcement jurisdiction of DNR or EPA; and sites associated with any extraordinary contaminant releases as designated by DNR (unless DNR grants a specific variance.)

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

After determining that an LRP participant has met all cleanup requirements, DNR will issue a No Further Action letter releasing any named parties from claims relating to the remediation of the contaminated site. In addition, an NFA letter enables a property to be removed from the state hazardous waste site index if LRP remedial efforts encompass criteria associated with a hazardous waste site listing. By order of the Iowa Land Recycling and Environmental Remediation Standards Act, an NFA letter serves as a Covenant Not to Sue for any parties named therein. Furthermore, liability protection is transferable to third-party institutions, successive property owners and operators, as well as benefactors that acquire or receive title to the property through voluntary or involuntary means.

Financial Assistance

Although not extensive, the Iowa LRP provides for a Land Recycling Fund to provide grants to local governments for site remediation response costs. These grants are reimbursed in increments over a six-year period. In addition, local jurisdictions may utilize tax increment financing schemes to set aside property taxes on LRP sites during remediation and use such funds to pay for incurred project costs.

Loans, loan guarantees, and cost-sharing opportunities are a few of the funding options available to LRP participants through the Iowa Physical Structure Assistance Program. This program combines the efforts of DNR and the Iowa Department of Economic Development to identify contaminated sites that could synthesize infrastructure improvements and create jobs through remediation projects.

Oversight Procedures

Participants wishing to enroll in the Iowa LRP must enter into a voluntary participation agreement to reimburse DNR for all oversight costs; to allow DNR access to the contaminated site; and demonstrate the resources necessary to complete the remediation project. Once enrolled in the LRP, the participant is protected from public or private claims as well as state-level enforcement actions as long as the project is executed in a timely manner. Participants must then design a remediation plan that satisfies a series of flexible, risk-based cleanup standards and methodologies established by the Iowa Environmental Protection Commission (EPC); a series of assessments, agreements, and reports must be completed depending on a specific or combination of background, statewide, or site-specific standards and methodologies pertain to a contaminated site. However, DNR allows site-specific variances where EPC standards may be inconsistent with or technically infeasible for project objectives. In addition, participants may adopt land use or technological controls to lower or modify DNR and EPC remediation requirements (and NFA letters will record such measures.) If a remediation project fails to satisfy any EPC standards or methodologies, DNR variances, or land use or

technological controls, DNR may void the liability assurances and financial incentives afforded under the LRP agreement. Accordingly, an enrolled party may withdraw from the LRP at any time with written notice to DNR; however, participants must compensate DNR for any incurred oversight costs and forfeit the original enrollment fee as well as any LRP incentives.

Public Notice

Required in circumstances where remediation activities require DNR permits or institutional controls. DNR must consider any forthcoming public commentary prior to approving or denying necessary permits.

Memorandum of Agreement with U.S. EPA No.

Fees

An enrollment fee not to exceed \$7,500 is required by DNR to compensate for costs of reviewing applications.

Contact Information

Daniel Wornson
Cal Lundberg
Bob Drustrup
Iowa Department of Natural Resources
Environmental Protection Division
900 E. Grand Avenue
Des Moines, IA 50319

Iowa Department of Natural Resources Homepage:
<http://www.state.ia.us/government/dnr/index.html>

Kansas

Program
Voluntary Cleanup Program.

Administering Agency
Kansas Department of Health and Environment (KDHE), Bureau of Environmental Remediation.

Authority
1997 Supp. Kan. Stat. Ann. section 65-161 *et seq.*

Date Established
1995, amended 1997 and 1998.

Eligibility

Sites

All sites are generally eligible to participate except sites that are listed or proposed for listing on the NPL; that are the subject of state or federal environmental enforcement actions; that are affiliated with petroleum or gas operations; or that are considered an immediate and significant risk of harm to human health, the environment, or public or private drinking water wells.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

KDHE provides participants who successfully complete the VCP a No Further Action determination.

Financial Assistance

No financial assistance is available at this time.

Oversight Procedures

KDHE must approve VCP applications and investigative reports, as well as proposed work plans and schedules prior to program implementation. After being accepted into the VCP, participants must negotiate a voluntary agreement with KDHE. KDHE then assesses and classifies contaminated sites according to four levels of environmental and public health standards; the classification will determine the nature, scope, and overall

objectives of the remediation project. Land use controls may be proposed to address issues on acutely contaminated sites, but shall not supersede actual evaluation criteria established for human health risks. Following project termination, participants are required to submit a closure report to KDHE. If project objectives have been met completely in a timely fashion, KDHE issues a No Further Action determination. However, KDHE may revoke an NFA determination if participants fail to comply with or complete the VCP agreement in full; if participant negligence is demonstrated to be responsible for any additional contaminant releases during remediation; or if information provided in the original application or voluntary agreement is determined to be fraudulent.

Public Notice

Public notice of and a period for public commentary on a proposed corrective action plan are required. KHDE may also conduct public hearings to collect additional public commentary.

Memorandum of Agreement with U.S. EPA No.

Fees

A nonrefundable \$200 fee is required at the time of application. If eligible, an initial deposit, not to exceed \$5,000, is required to cover oversight costs (with additional deposits in \$5,000 increments as costs accumulate.) KDHE will refund the balance of any unused deposit.

Contact Information

Frank Arnwine
Kansas Department of Health and Environment
Bureau of Environmental Remediation
Forbes Field, Building 740
Topeka, KS 66620

Kansas Department of Health and Environment,
Bureau of Environmental Remediation Homepage:
<http://www.kdhe.state.ks.us/ber/>

Kentucky

Program

The state of Kentucky does not have formal VCP legislation, although statutes pertaining to brownfields sites were enacted in 1996 to encourage voluntary remediation efforts. In 1998, NREPC issued a guidance document intended to expedite VCP progress by explaining the liability assurance and redevelopment opportunities available to public and private entities through the remediation of contaminated properties.

Administering Agency

Kentucky Natural Resources and Environmental Protection Cabinet (NREPC).

Authority

Ky. Rev. Stat. sections 224.01-450 to 224.01-465.

Date Established

1996, guidance document issued 1998.

Eligibility

Sites

All sites are generally eligible to participate.

Parties

Public entities including local governments and community development corporations are generally eligible for participation. Private entities are eligible for participation only through temporarily conveying a property to or entering a joint-agreement with a public entity.

Incentives for Participation

Liability Assurances

A No Further Remediation letter is issued to participants following site remediation. A letter runs with the property in favor of the owner or operator, other entities named in the remediation agreement, and all subsequent purchasers as long as the property is managed in accordance with the approved cleanup plan. The holder of the NFR letter is excluded from any further cleanup activities and legal claims associated with contamination in the approved remediation agreement.

Financial Assistance

No financial assistance is available at this time.

Oversight Procedures

An application must be submitted to NREPC that includes legal information about the site, environmental assessments, and a set of objectives and plans for remediation. NREPC may accept or reject the plan, or work with applicants to develop a modified plan. Once an acceptable agreement is reached, participants are required only to fulfill the guidelines established in the remediation agreement, as Kentucky lacks formal criteria for environmental and risk-based cleanup standards. However, if all on-site contamination is not removed during remediation efforts, participants must demonstrate that the presence of such materials does not pose imminent risks to human health or the environment.

Public Notice

Public notice of and a period for public commentary on a proposed corrective action plan are required in the form of general legal notices. Notices must be published in a local newspaper and provide site information and a summary of the project, as well as NREPC contact information and procedures for reviewing the remediation plan.

Memorandum of Agreement with U.S. EPA No.

Fees

There are no formally required fees associated with the program. However, NREPC typically seeks to recover all incurred oversight costs.

Contact Information

Jeff Pratt, P.E.
Assistant Director
Kentucky Natural Resources and Environmental
Protection Cabinet
Division of Waste Management
14 Reilly Road
Frankfort, KY 40601-1190

Kentucky Natural Resources and Environmental
Protection Cabinet Homepage:
<http://nr.state.ky.us>

Louisiana

Program
Voluntary Cleanup Program.

Administering Agency
Louisiana Department of Environmental Quality
(LDEQ).

Authority
La. Rev. Stat. Ann. section 30:2285 *et seq.*

Date Established
1996, although not implemented at this time—
LDEQ is required to adopt minimum remediation
standards for soil, groundwater, and surface water
prior to VCP implementation.

Eligibility

Sites

All sites are generally eligible to participate.

Parties

All parties are generally eligible to participate; however, parties determined to be responsible for site contamination, by negligence or by knowingly permitting activities resulting in site contamination to occur, must remove all discovered on-site contaminants through remedial efforts. Non-responsible parties may enter into the VCP under agreements to clean up specific portions of the property or to target specific contaminants during remediation according to future land use objectives.

Incentives for Participation

Liability Assurances

LDEQ issues a Certification of Completion following the successful execution of remedial action plans. The COC releases the holder from all liabilities associated with contamination specified in the remediation agreement, except liability for damages incurred by a third party involved in site remediation. (An exception to third party claims is made if personal or property damages are incurred while a third party is allowed access to the property for recreational purposes; however, this

exception is nullified if the property owner knowingly conceals the presence of harmful contamination or waste.)

Financial Assistance

No financial assistance is available at this time; however, participants are allowed to seek reimbursement for remediation costs from parties responsible for site contamination.

Oversight Procedures

The Louisiana VCP does not contain a specific application and review process; rather, participants submit a voluntary remedial action plan as a request for certification and oversight protection by LDEQ. The burden of responsibility on participants determines the nature of RAP agreements, especially the extent to which remediation must be completed before a COC is issued. Nonetheless, a completed RAP is not considered valid unless certified in writing by LDEQ. In addition, LDEQ may rescind a COC and all liability exemptions if the original agreement is determined to contain fraudulent information or is not approved in writing by LDEQ.

Public Notice

LDEQ is required to make public notice of and hold a public hearing in the municipality where a site is located prior to approving a voluntary remedial action plan.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants must reimburse LDEQ for all incurred oversight costs.

Contact Information

John Halk, Program Manager
Louisiana Department of Environmental Quality
Inactive and Abandoned Sites Division
P.O. Box 82282
Baton Rouge, LA 70884-2282

Louisiana Department of Environmental Quality
Homepage:
<http://www.deq.state.la.us/remediation/index.htm>

Maine

Program

Voluntary Response Action Program (VRAP).

Administering Agency

Maine Department of Environmental Protection (DEP).

Authority

Me. Rev. Stat. Ann. Tit. 38, section 343-E.

Date Established

1993.

Eligibility

Sites

All sites are generally eligible to participate; however, sites operating pursuant to a license issued by a specific program or office within DEP, or sites that may fall under the jurisdiction of another regulatory program, may be excluded. DEP may grant exceptions to any site, however, on a site-by-site basis.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

DEP issues a No Action Assurance (NAA) letter stating that, if a plan is properly approved and implemented, parties are released from further enforcement action during the cleanup project; although eligible for participation in the VRAP, responsible parties cannot be granted indemnity. If site remediation is successfully completed, DEP grants a Certificate of Completion releasing a participant from liability for all contaminants identified in the site assessment, including applicable liability release provisions for partial cleanups. The NAA letter and COC generally apply to: the party responsible for implementing the remediation project; successors and assigns of the party implementing the plan; and lenders, fiduciaries, and parties providing funding to persons completing the work.

Financial Assistance

No financial assistance is available at this time.

Oversight Procedures

DEP requires interested parties to perform environmental site investigations to determine the level of contamination present. Applicants are then required to submit a remedial action plan to DEP for review. If approved, remediation activities are implemented under the assurance of an NAA letter; however, DEP does reserve the right to impose specific cleanup standards on a site-specific basis. When the cleanup is completed pursuant to the terms of the plan, the participant submits a final report demonstrating that the plan was carried out and remediation accomplished. If the accomplishments detailed in the final report are commensurate with the initial RAP, DEP issues a COC to participants. DEP may revoke an NAA letter or COC if it is determined that information provided by the participant is fraudulent.

Public Notice

Not required.

Memorandum of Agreement with U.S. EPA No.

Fees

The DEP requires participants to pay a \$500 initial nonrefundable application fee. In addition, the DEP charges for overtime review and oversight costs beyond the initial \$500 fee.

Contact Information

Nicholas Hodgkins, VRAP Program
Department of Environmental Protection
Bureau of Remediation and Waste Management
17 State House Station
Augusta, ME 04333-0017

Maine Department of Environmental Protection

Homepage:
<http://www.state.me.us/dep/>

Maryland

Program
Voluntary Cleanup Program.

Administering Agency
Maryland Department of the Environment (MDE).

Authority
Md. Code Ann., Envir. Subtitle 5.

Date Established
1997.

Eligibility

Sites

All sites are generally eligible to participate except sites listed on the NPL; sites under active enforcement by state or federal entities; sites subject to a state-issued controlled hazardous substances permit; or sites contaminated after October 1, 1997.

Parties

All parties are generally eligible to participate; however prospective purchasers are restricted to parties that (1) do not currently own and have not previously owned the property and (2) did not cause or contribute to contamination at the site.

Incentives for Participation

Liability Assurances

Upon satisfactory execution remedial activities, a Certificate of Completion is issued by MDE, releasing a participant from further liability for contamination identified in an initial remediation agreement. In addition, the certificate exonerates a holder from private claims issued for contribution actions; thus the COC may be transferred to any party who did not cause or contribute to site contamination. Finally, the COC records any land use controls specified during the original negotiation of the remedial action plan.

Financial Assistance

The Brownfields Revitalization Incentive Program, managed by the Department of Business and Economic Development, provides economic incentives such as low interest loans and grants, and a five-year property tax credit to clean up and develop certain properties. The tax abatement may relieve up to 50 percent a site's property tax burden, based on property value increases after the cleanup project is performed. Moreover, local jurisdictions are able to attach an additional 20 percent abatement to encourage voluntary site remediation.

Other Incentives

MDE conducts free site assessments for publicly owned brownfield sites.

Participants may voluntarily withdraw from the VCP with proper and timely notification to MDE; however, MDE requires that participants secure a contaminated site prior to withdrawal and any application and oversight fees will be forfeited.

Oversight Procedures

An application must be submitted to MDE that describes whether the applicant is a responsible or inculpable party, as well as when and how site contamination occurred. If cleanup is required, a response action plan is submitted to MDE for approval. At this time, participants may select from different cleanup standards—depending on the future land uses proposed for a site—and implement the proper institutional controls to ensure that such uses are maintained. MDE may also require that the plan be modified. After approving a response action plan, MDE issues a letter stating that no further action will be required other than those actions included in the plan. If the plan is implemented and executed to the satisfaction of MDE, the participant will receive a Certificate of Completion. MDE may void a COC because of misrepresented or fraudulent information contained in the original remediation agreement, as well as the discovery of new or the exacerbation of existing site contamination that poses a significant threat to human or environmental health.

Public Notice

Not required.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

Along with the application, a \$6000 fee is required for each party participating in the program. Participants also must pay oversight costs that exceed \$6000, but will be refunded for any unused funds. Multiple applications for the same property may be submitted for approval to participate in the VCP, but separate applications for the same site each require a \$6000 application fee.

Contact Information

Jim Metz
Maryland Department of the Environment
Waste Management Administration
2500 Broening Highway
Baltimore, MD 21224

Steve Lynch
Maryland Department of Business and
Economic Development
Regional Financing Director
217 E. Redwood Street
Baltimore, MD 21202

Maryland Department of the Environment
Homepage:
<http://www.mde.state.md.us>

Information on the Maryland VCP:
<http://www.mde.state.md.us/environment/was/brownfields>

Massachusetts

Program
Voluntary Cleanup Program.

Administering Agency
Massachusetts Department of Environmental Protection (DEP).

Authority
Mass. Gen. L. Ch. 21E; 1998 Mass. Acts Ch. 206.

Date Established
November 1994, amended August 1998 (Massachusetts Brownfields Act).

Eligibility

Sites

All sites are generally eligible to participate; however, remediation requirements exist relating to the nature of natural resource contamination. Remediation projects on sites with contaminated soil are only required to address on-site releases while sites with contaminated groundwater are required to remediate the entire property, including any sites contaminated due to groundwater flow. In the case of a property contaminated because of groundwater or surface water discharges originating off-site, the owner or operator is exonerated from responsibility, except from liabilities relating to any separate, on-site contaminant releases.

Parties

Participant eligibility is restricted to owners or operators determined not to be responsible for site contamination.

Incentives for Participation

Liability Assurances

Eligible parties negotiate a Covenant Not to Sue with DEP prior to project implementation. If site remediation is successfully completed, the covenant exonerates the holder from liabilities relating to any contamination concerns stated in the original project settlement. A covenant may be

transferred to any successive owner or operator of the site.

Financial Assistance

The Redevelopment Access to Capital (RAC) program acts to encourage private sector entities to contribute funding to VCP efforts through state-issued environmental insurance policies and loan guarantees. In addition, the state matches private sector donations to a general RAC fund designated for environmental response actions. The RAC program was implemented with a \$15 billion allocation and is expected to leverage up to \$300 million in private sector funding.

The Brownfields Redevelopment Fund (BRF) is aimed at addressing brownfields redevelopment in economically distressed areas; a major emphasis of BRF funds is to pay for site assessments to initiate project momentum, as well as encourage private sector interest and funding. The BRF allows for loans or grants of up to \$50,000 for site assessments, and up to \$500,000 for site remediation. In addition, municipalities that have already contributed funding or adjusted local property tax schemes are eligible for grants of up to \$2 million. BRF allocations are only available to parties not responsible for site remediation (and not under investigation or enforcement action) and must demonstrate that the site is in an impoverished community and the remediation has the potential to stimulate the local economy.

State tax credits are available to remediation projects in distressed communities for up to 25 percent of expenses for projects using restrictive land use controls; projects without such restrictions may receive up to a 50 percent tax credit. State tax credits are not eligible to parties receiving RAC or BRF funding and contain a number of time critical and assessed value restrictions concerning project scheduling and expenses.

Municipalities may negotiate local property tax, interest, and penalty abatements to eligible participants for remediation projects designed to clean up and reuse commercial or industrial sites (for the same future land uses.)

Oversight Procedures

An application must be submitted to DEP. If approved, participants enter into a settlement agreement with DEP and are issued a Covenant Not to Sue. The settlement establishes specific levels of cleanup activities and oversight procedures. The Covenant Not to Sue protects participants from liabilities as long as remediation activities are executed in compliance with the original settlement.

Public Notice

Not required.

Memorandum of Agreement with U.S. EPA No.

Fees

Program participants will be assessed annual compliance and permit issuance fees.

Contact Information

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Acting Brownfields Coordinator
Massachusetts Department of Economic
Development
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Boston, MA 02108
Massachusetts Department of Environmental
Protection Homepage:
<http://www.state.ma.us/dep/bwsc>

Michigan

Program

Michigan does not have formal VCP legislation; however, a number of site remediation programs exist to encourage brownfields redevelopment through exemptions from liability (in lieu of contractual defenses) and other mechanisms designed to expedite cleanup review and implementation processes. The Michigan Environmental Response Act of 1982 established a means for the state to fund cleanups contaminated sites. However, in 1990 and 1995, amending legislation was passed that changed liability standards, encouraging more property owners to participate in cleanup programs. Most recently, amendments made in March 1999 extend program eligibility to parties that perform a specialized form of preliminary site assessment.

Administering Agency

Michigan Department of Environmental Quality (MDEQ).

Authority

Mich. Comp. Laws section 324.20101 *et seq.*, section 125.2651 *et seq.*

Date Established

1982; amended 1990, 1995, and 1999.

Eligibility

Sites

There are no specific criteria governing site eligibility.

Parties

There are no specific criteria governing participant eligibility; rather, amendments to brownfields legislative statutes expand criteria for exempting property owners, operators, and prospective purchasers from liability.

Incentives for Participation

Liability Assurances

Participants may be exempted from liability by submitting a baseline environmental assessment

(BEA) to MDEQ. A BEA must identify contamination and clearly distinguish between releases caused by the new land uses and existing contaminants. At the request of the purchaser, MDEQ may provide a written determination of the quality of the BEA, the effectiveness of remedial actions, and whether the proposed land use will exacerbate the existing contamination. After a BEA is approved, parties not responsible for site contamination are released from liability and remediation requirements, unless contaminants pose a significant and imminent threat to human health and the environment.

Beyond specific liability exemptions, Covenants Not to Sue are issued to participants that are not responsible for site contamination and demonstrate the financial ability to redevelop the property. In addition, a covenant agreement must (1) be deemed as favorable to public interest, (2) expedite site remediation and redevelopment, and (3) not threaten to exacerbate existing site contamination during the redevelopment project. The same conditions are upheld for issuance of a Covenant Not to Sue to a party responsible for site contamination; if a secondary party desired to purchase the property and proceed with site remediation. In addition, a Letter of Determination is available to parties who purchase a property and submit an acceptable petition for liability protection to MDEQ.

Financial Assistance

The Michigan Site Reclamation Program operates on a \$35 million appropriation to provide funding measures to local governments seeking to assess, remediate, and redevelop contaminated properties. Cities, townships, and villages may receive funding for one project per fiscal year, while counties are under no application restrictions; nonetheless, a single project may not receive more than \$2 million. Projects using funding must maintain initial land uses, unless approved by MDEQ, and cannot include drinking water facilities, asbestos removal, and interim or future operation and maintenance expenses.

The Brownfields Redevelopment Financing Act enables local governments to create redevelopment authorities to encourage brownfields redevelopment through financial programs and district

realignment within appropriate jurisdictional boundaries.

Local governments and redevelopment authorities may apply for financial assistance from the Revitalization Revolving Loan Fund. Loans are available to parties with an MDEQ-approved work plan and may be used to fund preliminary site assessments as well as interim activities to prepare the site for redevelopment. Loan conditions specify (1) that interest rates may not exceed 50 percent of the current prime rate and (2) that reimbursement must initiate no later than five years after and be paid in full no later than fifteen years after the initial loan agreement.

Under the Clean Michigan Initiative of 1998, \$335 million of \$675 million in tax exempt bonds is allocated to the reclamation of contaminated sites through out the state. MDEQ ranks sites for funding priority, monetary necessity, and potential to restore human health and environmental integrity.

Oversight Procedures

MDEQ reviews applications, BEAs, and petitions for liability protection to decide whether parties qualify for specific or combinations of liability exemptions. After completing a BEA, MDEQ may issue a Covenant Not to Sue to participants to acknowledge the completion of satisfactory site assessment and exemption from liabilities specific to the covenant agreement. MDEQ reserves the right to rescind a covenant agreement if site contamination is exacerbated by cleanup activities or by newly discovered contaminants.

Public Notice

Not required.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

Participants must pay \$750 for MDEQ to issue a BEA determination. There are no other fees unless the participant enters into an administrative order of consent and agrees to pay for oversight.

Contact Information

James Linton

Site Reclamation Program
 Environmental Response Division
 Michigan Department of Environmental Quality
 P.O. Box 30426
 Lansing, MI 48909

Michigan Department of Environmental Quality
 Homepage:
<http://www.deq.state.mi.us>

Minnesota

Program
 Voluntary Investigation and Cleanup Program (VIC).

Administering Agency
 Minnesota Pollution Control Agency (MPCA).

Authority
 Minn. Stat. section 115.B175.

Date Established
 1988, amended 1992 (Land Recycling Act).

Eligibility

Sites

All sites are generally eligible to participate except sites on the NPL or sites that require emergency response due to their proximity to drinking water resources. Furthermore, MPCA may exclude a site from assistance under the VIC program if a property is contaminated by hazardous substances that pose a significant threat to public health or the environment.

Parties

All parties are generally eligible to participate; however, parties responsible for site contamination are not eligible for the same liability protection extended to non-responsible parties.

Incentives for Participation

Liability Assurances

The VIC program is an incremental approach whereby parties that voluntarily conduct an approved investigation or cleanup can obtain various written assurances from the MPCA. The level of liability protection rests on the level of review selected by participants. These assurances include a Technical Assistance Approval (TAA) letter, a No Further Action (NFA) letter, and a Certificate of Completion (COC) signed by the MPCA Commissioner and the voluntary party:

- A TAA letter allows a VIC participant to solicit the technical expertise of MPCA staff members to review, modify, and oversee project planning and revision. In certain cases, as with responsible parties, a TAA letter may be the highest form of liability assurance available to VIC participants.
- NFA letters relieve VIC participants from further state-level enforcement actions as long as remediation efforts are completed in a timely fashion and in compliance with established work plans filed with MPCA. Variables that influence the extent of protection with an NFA letter are determined by pre-existing site conditions such as amount and type of contaminants present.
- A COC acts in the same manner as an NFA letter; however, a COC may only be granted to non-responsible parties. Agreements may also be entered that address only certain on-site contamination, whereby a partial COC is issued with liability protection only for specific contaminants.

Eligible parties, typically adjacent or subsequent property owners and operators, may also receive liability protection in the form of an Off-site Source Determination (OSD) and No Association (NA) letters based on the historical environmental conditions and past or future uses of the property:

- The OSD letter is issued by MPCA to property owners or operators in the vicinity of and determined to be contaminated through releases on VIC sites. Recipients of OSD letters are exonerated from liabilities associated with contamination originating on a VIC site but are typically required to cooperate with portions of the cleanup project, such as allowing necessary access to property and facilities to remediate incurred contamination.
- NA letters are issued to business operators on contaminated properties that are determined not to be responsible for site contamination. Although recipients are released from remedial obligations, MPCA requires that business owners conduct environmental assessments to determine the nature and extent of contamination before determining

whether parties are responsible for existing site contamination. Although rarely issued, because of inherent difficulties with assessment and determining responsibility, retroactive NA letters are available to past site owners or operators.

Financial Assistance

The Low-Interest Hazardous Waste Cleanup Loan program assists small businesses—employing less than fifty full-time employees with a net worth less than \$1 million—that generate hazardous wastes or have suffered an on-site contaminant release. After filing the appropriate work plans with MPCA, small businesses are eligible for loans that range from \$1,000 to \$50,000 at 1 percent less than prime interest rates. Loans must be repaid in full within five years.

The Contamination Cleanup Development Grant program allows the Minnesota Department of Trade and Economic Development to administer grants for assessment, planning, remediation activities at contaminated sites intended to be redeveloped. The grants are only available to municipalities, port authorities, economic development authorities, and housing and redevelopment agencies. In addition, the program requires recipients to file an appropriate response action plan with MPCA and contribute a 25 percent match on funds.

The Tax-Base Revitalization Account program provides grants to projects designed to redevelop commercial and industrial properties within the metropolitan area of St. Paul-Minneapolis and properties that are entered in the Affordable Housing Program. Grants may not be used for site assessments; rather they are intended to supplement Contamination Cleanup Development Grants by assisting in the implementation of response action plans for the remediation of hazardous waste, petrochemicals, or asbestos. Grants are awarded on a competitive basis determined by the local need for and potential for community revitalization within a project.

The Redevelopment Grant Assistance Program awards funding solely to nonprofit organizations to perform site assessments in areas that have been overlooked by private developers.

Minnesota also has established several statutes to provide financial assistance to sites afflicted with petroleum (including USTs), dry cleaning, and agricultural contaminants.

Oversight Procedures

Interested parties must submit a Request for Assistance form to MPCA. As part of the application, the applicant must agree to reimburse the state for oversight costs. If the application is approved, the participant must conduct a site assessment that will be used to devise a work plan for cleanup of the site. If remediation is necessary, participants must submit a response action plan including both feasibility studies and risk assessment. If the plan is approved, remediation may commence. A final report is required upon completion of the cleanup. Approved cleanups will then receive written assurances from MPCA.

Public Notice
Not required.

Memorandum of Agreement with U.S. EPA
Yes.

Fees
VIC participants must reimburse MPCA for all incurred oversight costs.

Contact Information
Barbara Jackson, Supervisor
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155-4194

Louis Jambois or Meredith Udoibok
Department of Trade and Economic Development
500 Metro Square
121 7th Place East
St. Paul, MN 55101

Minnesota Pollution Control Agency Homepage:
<http://www.pca.state.mn.us/cleanup/index.html>

Mississippi

Program
Mississippi Brownfields Voluntary Cleanup and Redevelopment Act (MBVCRA).

Administering Agency
Mississippi Department of Environmental Quality (MDEQ).

Authority
1998 Miss. Laws Ch. 528.

Date Established
1998.

Eligibility

Sites

All sites are generally eligible to participate except sites listed on the NPL or sites under other federal hazardous waste enforcement jurisdiction.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

Upon completion of the terms of a remedial action agreement filed with the Mississippi Commission on Environmental Quality (CEQ), the participant may petition for the issuance of No Further Action letter. NFA letter liability protection releases participants from claims relating to contamination and incurred project expenses beyond those stated in the original remedial action agreement. Also, liability protection can be extended to other parties, such as future site owners, lending institutions, and developers. MBVCRA cleanup standards are flexible and determined at the time of the remedial action agreement on the basis of public health and environmental risks on a site-specific basis. In addition, specific concerns associated with site contamination may be addressed with land use and engineering controls as approved by CEQ and MDEQ.

Financial Assistance

No financial assistance is available at this time.

Oversight Procedures

Following a review of the application by CEQ, MDEQ will prepare a risk-based agreement with participants that contains a description of all remediation to be completed at the site and a schedule for project implementation. After completing site remedial activities, participants may be issued an NFA letter. An NFA letter may be rescinded if remediation fails to remove stated contaminants in a timely manner; if remediation is carried out negligently and results in additional releases; if pre-existing contamination not acknowledged in the agreement is discovered; if risk-based terms of the agreement are surpassed during or after the cleanup; or if the agreement contains fraudulent information.

Public Notice

MDEQ must issue a public notice after negotiating brownfield agreement in the county or counties where a site is located. The notice must describe the agreement, invite public commentary, and provide a date and location when and where CEQ will consider the proposed agreement. In addition, MDEQ is required to file a copy of the brownfield agreement in the county courthouse in the affected county or counties.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants must pay an advance in the amount of \$2,000 when filing an application, as well as paying for all direct and indirect costs associated with the processing of the application and the administration of the agreement.

Contact Information

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Brownfields Coordinator
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Jackson, MS 39289-0385

Mississippi Department of Environmental Quality
Homepage:
<http://www.deq.state.ms.us/domino/deqweb.nsf>

Missouri

Program

Voluntary Cleanup Program (VCP) and Brownfields Redevelopment Plan (BRP).

Administering Agency

Missouri Department of Natural Resources (MDNR).

Authority

Mo. Rev. Stat. section 260.565 *et seq.*, section 447.700 *et seq.*

Date Established

1993, amended 1999; BRP established 1995.

Missouri uses a formal voluntary cleanup program and the Brownfields Redevelopment Program to encourage the remediation of contaminated sites. While the Missouri VCP is similar to many other state programs—by accepting a variety of contaminated sites and parties—the BRP caters to urban brownfields sites and is aimed at private sector redevelopment entities. Nonetheless, both programs are designed to encourage voluntary site-remediation through liability assurances and financial incentives.

Missouri Voluntary Cleanup Program

Eligibility**Sites**

All sites are generally eligible to participate, except sites listed on the NPL or under enforcement action by another state or federal agency and sites where emergency situations threaten human and environmental health. Sites that are contaminated by petroleum are generally excluded from participation; however, MDNR determines such the eligibility of such sites on a site-specific basis.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

Following the successful completion of an approved RAP, a No Further Action letter provides protection from future liability related to contamination designated in an environmental remediation oversight agreement with MDNR.

Financial Assistance

No financial incentives are available at this time.

Other incentives

Program participation may be terminated at any time with written notification to MDNR and participants will be reimbursed the balance of oversight deposits.

Oversight Procedures

An application must be submitted to MDNR that describes the legal and operational background, as well as suspected contaminants, and a Consent for Access to Property form. If approved, participants must negotiate an environmental remediation oversight agreement with MDNR that details the operational and financial obligations of both properties. MDNR then conducts site assessments and determines whether site remediation is necessary and to what extent such activities must be completed. Participants are required to formulate an appropriate RAP that sets forth remediation objectives and a schedule for project implementation and completion. Following project termination, participants must file a final report to MDNR to be evaluated for compliance with the RAP. If approved and if all fees have been paid, MDNR issues participants an NFA letter. MDNR reserves the right to terminate VCP participation or rescind an NFA letter if any agreements contain fraudulent information, contaminants that require federal enforcement are discovered, or RAP and payment schedules are not fulfilled in a timely fashion.

Public Notice

Not required.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

Participants are required to pay a \$200 application fee and initial \$5,000 oversight deposit. In addition, participants must reimburse MDED for any additional oversight costs.

Missouri Brownfields Redevelopment Program

Eligibility

Sites

Eligible sites are restricted to abandoned or underutilized contaminated sites that have the potential to create jobs or generate economic opportunities in communities through remediation and redevelopment. In addition, abandoned sites must be unoccupied for over three years, owned by a municipality, or approved for redevelopment by a local governmental authority to participate in the BRP.

Parties

All parties are generally eligible to participate, although the statute is aimed at private sector entities.

Incentives for Participation

Liability Assurances

BRP participants may qualify for NFA letter liability assurances for different levels of remediation depending on the future uses of the property. In some cases, site assessments may reveal that the amount of contamination present is acceptable for continued industrial uses; thus, an NFA letter is issued and is upheld unless land uses are changed in the future. The same guidelines are upheld for sites that require remediation; the acceptable level of cleanup is set by MDNR and may not require comprehensive remediation. Participants are also granted contribution protection from third party claims. In addition, liability assurances include municipal owners and prospective purchasers, and may be transferred to subsequent property owners or parties with ownership interest in the property.

Financial Incentives

All sites that qualify for the BRP are eligible for financial assistance from the Missouri Department of Economic Development (MDED).

Brownfield Tax Credits provide income tax incentives to sites that are located in MDED enterprise zones or sites that have suffered significant economic setbacks due downsizing and production decreases. Similarly, Remediation Tax Credits provide relief to operators who are able to create and maintain jobs during and after site cleanup projects. Although not applicable until an NFA letter is issued, Remediation Tax Credits may be used to cover all capital and operating costs incurred during site remediation.

MDED has established a Reuse Fund to provide loan guarantees to lending institutions to encourage the foreclosure of brownfields sites and the financing of redevelopment projects. Loan guarantees are available in the amount of 70 percent of the issued loan or \$1 million.

MDED provides direct loans to redevelopment projects. Loans are available in the amount of 50 percent of project costs up to \$1 million; however, only one such loan per eligible project is available and may not exceed appraised project cost or collateral. Loan interest rates may not exceed 2 percent over the prime rate and may not exceed a ten-year term, whereby the borrower must pay a fee of 2 percent of the loan amount at closing.

MDED also provides grants up to 50 percent or \$100,000 for site assessments; the balance may be matched by a private sector firms or other local and state governmental entities, but MDED retains control over any generated work products.

Oversight Procedures

See aforementioned Missouri Voluntary Cleanup Program: Oversight Procedures.

Public Notice

Public notification requirements are dependent on the level of site-specific standards in the remediation agreement. Projects involving residential standards do not require public notice. In projects involving land use controls, participants must notify and invite commentary from the local government where a site is located. Projects involving land use controls and engineering controls must notify the local government and general public in the area in which a site is located, invite and respond to public commentary, and hold public hearings at the discretion of MDNR.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

See aforementioned Missouri Voluntary Cleanup Program: Fees.

Contact Information

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Manager, Finance Programs
Missouri Department of Economic Development
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Missouri Department of Natural Resources
Homepage:
<http://www.dnr.state.mo.us/homednr.htm>

Missouri Department of Economic Development:
<http://www.ecodev.state.mo.us/>

Information on the Missouri VCP:
<http://www.state.mo.us/statutes>

Montana

Program
Voluntary Cleanup Program.

Administering Agency
Montana Department of Environmental Quality (DEQ).

Authority
Mont. Code Ann. sections 75-10-730 to 75-10-738.

Date Established
1995.

Eligibility

Sites

All sites are generally eligible to participate, except sites listed on the NPL, sites subject to enforcement action by DEQ or another state agency, and sites subject to state UST laws. If site contamination poses a significant threat to human or environmental health, DEQ may determine that a site is subject to an administrative order for remediation rather than VCP participation.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

Parties that complete approved cleanup plans are issued a No Further Action letter. In addition, a non-responsible party does not assume liabilities by voluntarily undertaking an approved cleanup plan; however, a party is responsible for any subsequent releases resulting from negligence or intentional misconduct.

Financial Assistance

No financial assistance is available at this time.

Other Incentives

Montana's VCP allows participants to address the cleanup of partial sections of contaminated sites and multi-phased projects.

Oversight Procedures

An application must be submitted to DEQ that includes an environmental site assessment, a project proposal (prepared by a qualified environmental professional), and the written consent of the property owner for (1) participation in the VCP and (2) site access. DEQ then provides written notice of completion within thirty or sixty days according to the complexity of the project. DEQ reviews the proposed remedial action plan before accepting or rejecting the plan according to risk-based cleanup standards and potential threats to human and environmental health; future uses and appropriate land use controls are also considered. If approved, participants must implement the RAP and initiate the remediation activities within twelve months and complete the plan within sixty months; DEQ may extend those limits on a site-specific basis if participants are proceeding in a timely fashion. In addition, DEQ reserves the right to access the site at any time during the cleanup to confirm that remediation is being carried out according to the RAP. After the RAP has been completed, participants must obtain certification from a qualified environmental professional and submit this information to DEQ. At this time, participants may petition DEQ for site closure. DEQ then conducts a review to determine whether the plan has been implemented and completed, that any necessary long-term funding for maintenance or monitoring has been provided, and that the participant has reimbursed the department for any remediation costs it has incurred.

Public Notice

DEQ must make public notice of a completed voluntary cleanup plan prior to its approval. DEQ is required to summarize the project in a local newspaper and make the plan available to the public. If petitioned by the general public, DEQ is also required to conduct a public hearing to collect public commentary regarding the plan; public commentary will be reflected in any final decision or modifications made to the voluntary cleanup plan.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants must reimburse DEQ for all incurred oversight costs.

Contact Information

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Montana Department of Environmental Quality
Remediation Division
2209 Phoenix
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Helena, MT 59620-0901

Montana Department of Environmental Quality
Homepage:
<http://www.deq.state.mt.us>

Nebraska

Program
Voluntary Cleanup Program.

Administering Agency
Nebraska Department of Environmental Quality
(NDEQ).

Authority
Neb. Rev. Stat. section 81-15, 181 to 81-15, 188.

Date Established
1995.

Eligibility

Sites

All sites are generally eligible for participation.

Parties

All parties are generally eligible for participation.

Incentives for Participation

Liability Assurances

NDEQ issues No Further Action letter to participants who have met the provisions of an approved remedial action plan.

Financial Assistance

No financial assistance specifically aimed at site remediation is available at this time. However, the state does offer sales and use tax refunds for equipment acquired for the purpose of industrial pollution control or abatement.

Oversight Procedures

Acceptance into the VCP requires (1) an environmental site assessment; (2) an RAP that conforms to state and federal regulations; (3) a work plan that addresses the specific execution of the RAP, including land use controls; and (4) a schedule of reimbursement to NDEQ for any oversight costs incurred during the project as well as expenses for monitoring sites and reviewing applications, RAPs, and progress reports. NDEQ sets cleanup standards on a site-specific basis and monitors remediation activities as it deems necessary. In addition, NDEQ requires periodic progress reports and a final report documenting the execution of the RAP. Upon completion of remedial activities, NDEQ issues an NFA letter if the participant has completed the RAP. An NFA letter may be voided if a participant fails to maintain land use controls during or following the cleanup.

Public Notice

Not required; however, if portions of the remediation plan pertain to enforcement actions under the jurisdiction of other state regulations, public notice may be required at the discretion of NDEQ.

Memorandum of Agreement with U.S. EPA No.

Fees

Program participants must pay two \$5,000 fees to NDEQ; the first fee covers the cost of administering the VCP while the second fee is reserved for oversight costs. In addition, participant must compensate NDEQ for any oversight costs in excess of original \$5,000 payment.

Contact Information

RAPMA Program Coordinator
Nebraska Department of Environmental Quality
The Atrium
1200 N Street, Suite 400
P.O. Pox 98922
Lincoln, NE 68509

Nebraska Department of Environmental Quality
Homepage:
<http://www.deq.state.ne.us>

Nevada

Program

Voluntary Cleanup Program.

Administering Agency

Nevada Department of Conservation and Natural Resources—Division of Environmental Protection (NDEP).

Authority

Nev. Rev. Stat. Ann. sections 459.610 *et seq.*

Date Established

1999.

Eligibility

Sites

All sites are generally eligible to participate except sites owned by a person or entity under investigation or enforcement action related to the property in question and those sites listed, proposed for listing, or eligible for listing on the NPL. However, NPL sites are eligible to participate if specific contaminants to be remediated are isolated and addressed separately from those that establish CERCLA jurisdiction.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

Participants that completely fulfill provisions of a NDEP sanctioned remedial agreement are issued a Certificate of Completion. This document exonerates a person or entity from further legal responsibility pertaining to the specific provisions of the remedial agreement regardless of future changes in state or federal law.

Special provisions of the Certificate of Completion include liability assurances for prospective purchasers, lending institutions, and beneficiary parties that hold security interests in contaminated parcels without contributing to or managing operations on the property. Essentially, those parties are protected from incurring liability.

ties through title transfer, site assessment, and foreclosure procedures. Such exceptions are intended to encourage reinvestment among private sector entities by restricting liabilities exclusively to parties held responsible for contaminant releases or spills.

Financial Assistance

No financial assistance is available at this time.

Oversight Production

An application must be submitted to an administrator in the State Environmental Commission (SEC) that includes a preliminary site assessment including the source, nature, location, and PRPs for all contaminants on a property as well as preliminary remedial plans and an application fee. If the application is approved, interested parties enter into a remedial planning contract with SEC under which such parties assume responsibility and demonstrate a means of recovering all costs of site remediation; this contract is overseen by NDEP. The contract also identifies the specific contaminant to be remediated, establishes actions and plans for such remediation, limits the future uses of treated properties, and grants SEC the irrevocable right to enter and monitor the property at any time during the remediation process. SEC may terminate a remedial agreement at any time if it decides that any aspect of the remedial agreement is not being executed in a timely manner or developments subsequent to contractual agreements indicate an imminent threat to human health will exist if the remedial program is continued. Furthermore, NDEP may void a COC if participants provide fraudulent information or fail to disclose all relevant information during the application process; if the total extent of contamination (known or unknown) is misrepresented; if additional contaminant releases occur that are not included in the original remedial agreement; if parties become subject to criminal or civil prosecution because of destruction of natural resources; or if parties are cited for nuisance, trespassing, or abnormal negligence under common law.

Public Notice

A public notice is issued throughout the county where the site is located as well as a personal notice to citizens and establishments located within 500 yards of the property to alert community members of prospective activities.

Memorandum of Agreement with U.S. EPA No.

Fees

No fees are required to participate in the VCP.

Contact Information

Bob Kelso
Remediation Branch Supervisor
Nevada Department of Conservation and Natural Resources
Division of Environmental Protection
Waste Management and Corrective Action
333 West Nye Lane, Room 206
Carson City, NV 89706

Nevada Department of Environmental Protection
Homepage:
<http://www.state.nv.us/ndep>

New Hampshire

Program
Voluntary Cleanup Program.

Administering Agency
New Hampshire Department of Environmental Services (DES).

Authority
RSA section 147-F:1 *et seq.*

Date Established
1996.

Eligibility

Sites

All sites are generally eligible to participate except sites under a state or federal corrective action order that supersedes VCP requirements or sites that are eligible for reimbursement of remedial costs under the Oil Discharge and Disposal Cleanup Fund, the Fuel Oil Discharge Cleanup Fund, or the Motor Oil Discharge Cleanup Fund (except if reimbursement from these funds will be substantially less than incurred remediation costs.)

Parties

All parties are generally eligible to participate; however, responsible parties are unable to attain liability assurances from DES.

Incentives for Participation

Liability Assurances

After an approved remedial action plan is completed, DES issues a Certificate of Completion; when no significant risk remains and no significant additional involvement by DES is required, a No Further Action letter will be provided. A Covenant Not to Sue is provided by the Attorney General upon entry into the VCP and is recorded into the deed when the RAP is completed. The covenant is transferable to any subsequent property owners or lessees. In addition, eligible participants are protected from claims for pre-existing site contamination as well as additional contamination that is discovered or released during remediation (unless releases are due to negligence or voluntary misconduct.)

Financial Assistance

Municipalities are able to offer property tax abatements to eligible, non-responsible VCP participants. Specific rates, limits, and terms are left to the discretion of local governments. In addition, such parties are also exempt from state hazardous waste generator fees for any wastes associated with site remediation.

Oversight Procedures

After an application is approved and an RAP is implemented, DES will oversee the remediation process, including reviewing work plans and remedial action plan completion reports, as well as performing site investigations, as necessary. Risk-assessment protocols and procedures are set by the New Hampshire Department of Health and Human Services. Liability assurances are only valid if the VCP fully complies with contractual agreements; failure to fully complete the terms of the agreement results in the nullification of a COC, an NFA letter, and a Covenant Not to Sue.

Public Notice

DES must make public notice of an RAP prior to its approval. DES is also required to conduct a public hearing to collect public commentary regarding the plan; public commentary will be reflected in any final decision on the RAP.

Memorandum of Agreement with U.S. EPA No.

Fees

State and local governments, including school districts, are exempt from program fees. All other applicants are required to pay a \$500 nonrefundable fee for eligibility determination and a \$3,000 nonrefundable fee for full participation.

Contact Information

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New Hampshire Department of Environmental Services
P.O. Box 95
6 Hazen Drive
Concord, NH 03302-0095
New Hampshire Department of Environmental Services Homepage:
<http://state.nh.us/des>

New Jersey

Program
Voluntary Cleanup Program.

Administering Agency
New Jersey Department of Environmental Protection (DEP).

Authority
N.J. Admin. Code Tit. 7, section 26; 1997 N.J. Laws Ch. 278, section 14.

Date Established
1991, revised 1998.

Eligibility

Sites

All sites are generally eligible to participate except sites listed on the NPL, sites under state or federal corrective actions, and acutely contaminated sites that pose a significant threat to human and environmental health.

Parties

All parties are generally eligible for participation.

Incentives for Participation

Liability Assurances

Participants may receive a No Further Action letter accompanied by a Covenant not to Sue from DEP after successful completion of site remediation. Parties acquiring a property carrying such documents that is located in a qualifying municipality, are protected from state or third-party claims for issues related to site contamination. In addition, innocent purchasers of properties with existing contamination can attain an NFA letter and a Covenant Not to Sue to be protected from future liability related to changes in remediation standards (requiring additional cleanup) or newly discovered contamination.

Financial Assistance

The Environmental Opportunity Zone Act allows municipalities to establish environmental opportunity zones in which contaminated properties are

eligible for property tax abatements. Property owners are able to make quarterly payments at an agreed rate in lieu of real property taxes. After a year of payment exemption, payments are required to increase by ten percent for each year of a ten-year term. If necessary the agreement may be extended to fifteen years.

Under the Hazardous Discharge Site Remediation Fund, qualified parties may apply for grants and low-interest loans for up to 100 percent of remediation costs. Parties other than municipalities may only receive up to \$1 million per year while municipalities may receive up to \$2 million for site investigation and remediation. Excluded from financial incentives in the Hazardous Site Remediation Fund are private sector entities capable of establishing an independent remediation funding source. Parties applying for funding are ranked and prioritized by the New Jersey Economic Development Authority on the basis of potential threats to human or environmental health.

The Municipal Landfill Site Closure, Remediation, and Redevelopment Act provides financial incentives to parties who close, remediate, and redevelop landfills that ceased operations prior to 1982. Funds are derived from the Municipal Landfill Closure and Remediation Fund, which receives one-half of the sales tax generated by a landfill. After site remediation is completed, parties may receive up to 75 percent of site closure and remediation costs; however, eligibility for funding requires that (1) a retail business that exhibits and sells non-tax-exempt items is developed on the property; (2) the business is not a catalog or mail-order operation; and (3) the developer enters into and complies with a memorandum of agreement with DEP.

The Brownfields Act allows non-responsible parties to recover up to 75 percent of remediation costs during a redevelopment project through the Brownfields Site Remediation Fund under New Jersey's General Tax Fund. Parties are required to enter into a memorandum of agreement with DEP and a redevelopment agreement with the Department of Commerce and Economic Development (DCED) and the State Treasurer; DCED executes redevelopment agreements for projects proposed

for distressed areas that demonstrate the ability to create jobs and revitalize local and regional economic development. In addition parties are not eligible for reimbursement until business operations on the redeveloped site have initiated. Furthermore, full compensation is only attainable if the site operates at a 90 percent occupancy rate of the redevelopment agreement.

The New Jersey Urban Redevelopment Act provides assistances for a range of redevelopment projects in municipalities that are economically or socially distressed; have populations under 15,000 residents or a population density of above 5,000 residents per square mile; have equalized tax rates above those of the state that also have an equalized valuation per capita under the that of the state; or have designated DCED as their local redevelopment authority.

As of 1996, four percent of the annual Corporate Business Tax revenue is allocated to fund UST improvement and removal, surface water quality projects, and state-sponsored hazardous waste site cleanups.

Oversight Procedures

Parties must first submit an application and enter into a memorandum of agreement with the DEP. The agreement describes the remedial action plan as well as the level of oversight necessary, as stated in DEP's 1997 Oversight of the Remediation of Contaminated Sites regulations. RAPs are also beholden to the 1997 Technical Requirements for Site Remediation, as set by DEP, throughout the remediation process. DEP may grant variances to certain technical requirements, however, if precedent demonstrates that alternative processes can achieve similar remediation levels or have been successfully employed in the past. There are no enforcement provisions in the agreement, so participants may exit the program without concern of further action by DEP.

Public Notice

Not required.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants are must compensate fixed oversight costs to DEP in the amount \$250 for site assessment and \$500 for site investigation reports.

Contact Information

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Section Chief
New Jersey Department of Environmental Protection
Bureau of Field Operation
Case Assignment
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Trenton, NJ 08625-0434

New Jersey Department of Environmental Protection Homepage:
<http://www.state.nj.us/dep>

New Mexico

Program

Voluntary Remediation Program.

Administering Agency

New Mexico Environment Department (NMED).

Authority

N.M. Stat. Ann. section 74-4G-1 *et seq.*

Date Established

1997, effective 1999.

Eligibility

Sites

All sites are generally eligible to participate, except sites covered by state or federal permits and sites subject to state or federal enforcement actions. Sites are also ineligible if they pose an imminent or substantial threat to public health, to the environment, or to Native American cultural or religious sites.

Parties

Any current or prospective property owner or facility operator can apply to participate in the program. If the participant is not the property owner, written consent must be obtained from the property owner.

Incentives for Participation

Liability Assurances

While participating in the VRP, an applicant receives indemnity from the Secretary of NMED for newly discovered contamination or releases of contamination covered in a negotiated voluntary remediation agreement. Furthermore, after the cleanup is completed according to the agreed remediation standards, the participant is entitled to a Certificate of Completion or a Conditional Certificate of Completion. Also, after completion of the project, a purchaser of the property that did not contribute to site contamination may request a Covenant Not to Sue from NMED stating that the purchaser will not be held responsible for any contamination that was the subject of the volun-

tary remediation agreement. Finally, lending institutions are protected from liability associated with sites that participate in the VRP.

Financial Assistance

No financial assistance is available at this time.

Oversight Procedures

An application must be submitted to NMED that includes an American Society for Testing and Metals Phase I site investigation and submit a preliminary work plan. NMED will then review the application and determine eligibility. If accepted, participants enter into a voluntary remediation agreement with NMED. In the agreement, participants agree to perform remediation activities to comply with established local, state, and federal contamination standards. After a public notice and comment period, remediation may proceed. Additional oversight may consist of document review, site visits and inspections, participation in meetings, and sampling. NMED reserves the right to rescind a COC or Conditional COC if site remediation fails to comply with the voluntary remediation agreement; contamination present poses a significant threat to human or environmental health or exists in higher concentrations or a greater amount than previously known by NMED; or the voluntary remediation agreement is a result of fraudulent information.

Public Notice

Prior to NMED approval for participation, a VRP applicant must make the proposed agreement available to the public at a location in the vicinity of the site and provide an affidavit of compliance to NMED. In addition, notice must be given to the general public and any other requesting party, as well as any local, state, federal, tribal, or pueblo environmental agency potentially affected by the agreement. If petitioned by the general public, NMED is required to conduct public hearings to provide the opportunity for public commentary and participation in the development and approval of a remediation work plan.

Memorandum of Agreement with U.S. EPA No.

Fees

Applicants must pay a nonrefundable \$1000 application fee. In addition, all expenses related to NMED oversight must be reimbursed by VRP participants.

Contact Information

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New Mexico Environment Department
Ground Water Quality Bureau
Harold Runnels Building, Suite N2300
1190 St. Francis Drive
Santa Fe, NM 87502

New Mexico Environment Department Homepage:
<http://www.nmenv.state.nm.us/>

New York

Program
Voluntary Cleanup Program.

Administering Agency
New York Department of Environmental Conservation (NYDEC).

Authority
Departmental policy (6 N.Y.C.R.R. Part 375, Subpart 375-4), no formal statutory authority.

Date Established
1994, revised 1997.

Eligibility

Sites

All contaminated sites over which the U.S. Environmental Protection Agency does not assume lead responsibility are eligible for participation, including sites containing hazardous waste and petroleum pollution.

Parties

All parties are generally eligible to participate; however, PRPs are excluded from participation when affiliated with sites under state or federal enforcement; sites subject to state permits for hazardous waste treatment, storage, or disposal facilities; or sites classified as Class 1 or Class 2 on the State Registry of Inactive Waste Disposal Sites. PRPs are also required to address off-site contamination issues related to releases.

Incentives for Participation

Liability Assurances

Participants receive a qualified release from the NYDEC stating that no further remediation is required if the cleanup of a contaminated property occurs in accordance with NYDEC oversight. The qualified release is transferable to successors and assignees. NYDEC also issues No Further Action letters to prospective purchasers stating that the site has been remediated to comply with state standards. The NFA letter does not provide future indemnity from unforeseen releases or undiscovered

ered contamination; rather, it is a tool meant to expedite transactions involving remediated sites.

Financial Assistance

The 1996 Environmental Bond Act allocates bond funds of \$200 million to reimburse local governments for up to 75 percent of site assessment and remediation costs. However, only municipalities that are determined to be not responsible for contamination are eligible to receive funding.

There are no financial incentives available to private parties.

Other Incentives

After being accepted into the VCP, participants select the nature of a commitment document outlining site investigation and remediation activities. If a consent order is selected, participants are eligible to receive protection from CERCLA contribution liabilities and are eligible to receive potential CERCLA cost recovery actions. However, a consent order may also require reporting to the Securities and Exchanges Commission and preclude cost recovery mechanisms for project expenses.

If participants select a contractual agreement, they are less likely to receive CERCLA cost recovery and liability measures, but are afforded greater operational flexibility for the remediation project. As a result, the remedial process may be expedited and the site may be sold or redeveloped in a significantly shorter period of time.

The New York VCP is based on flexible cleanup standards relating to American Society for Testing and Metals standards for ground water and surface water contamination. Typically, remediation standards are negotiated on a site-specific basis dependent on factors including the amount and nature of contaminants present, the potential for contaminants to migrate into ground water or surface water reserves, and the potential to threaten human and environmental health.

Oversight Procedures

An application must be submitted to NYDEC that includes a preliminary site assessment prior to applying to the program. If the application is approved, NYDEC will then determine whether the applicant is financially able to participate.

Participants then negotiate a commitment document with NYDEC to establish site remediation requirements including, project work plans, schedules and appropriate levels of cleanup. After a work plan is completed to NYDEC's specifications, the department will issue an indemnification letter to the participant. Such indemnification may be reopened if a completed program is determined to be insufficient to protect human or environmental health; future land uses require further remediation; new contamination is discovered; or the original commitment document contains fraudulent information.

Public Notice

Requirements for public commentary are dependent on whether sites are listed on the New York Registry of Inactive Waste Disposal Sites. If not listed, NYDEC solicits comments as through publication in *Environmental Notice Bulletin*; listed sites require notification as dictated by the Inactive Hazardous Waste Site Disposal Remedial Program.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants must reimburse NYDEC for all incurred oversight costs.

Contact Information

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New York Department of Environmental
Conservation
Brownfield and Voluntary Cleanup Programs
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New York Department of Environmental
Conservation Homepage:
<http://unix2.nysed.gov/ils/executive/encon/encon.htm>

North Carolina

Program

Voluntary Cleanup Program and Brownfields Property Reuse Act (BPRA).

Administering Agency

North Carolina Department of the Environment and Natural Resources (DENR).

Authority

N.C. Gen. Stat. sections 130A-310 to 130A-310.13; section 130A-310.30 *et seq.*

Date Established

1987, amended 1994 and 1995; BPRA enacted 1997.

North Carolina uses two distinct programs to encourage the remediation and reuse of contaminated sites. The VCP is intended to promote voluntary site remediation among, but not limited to, parties that are determined to be responsible for contaminant releases; accordingly, liability assurances are limited, but can be addressed using institutional controls. Under the BPRA, the “brownfields” program focuses on economic redevelopment opportunities on contaminated sites and is only available to non-responsible parties. Site requirements are determined by future land uses and may not require any actual cleanup; rather, institutional controls and other provisions that isolate and contain known contaminants may be adopted in lieu of removal or remediation.

Because both programs are different in scope and nature, they are administered by two different branches within DENR; the VCP is overseen by the Inactive Hazardous Sites Branch (IHSB) while the brownfields program is overseen by the Special Remediation Branch.

Responsible Party Voluntary Cleanup Program

Eligibility

Sites

All sites are generally eligible to participate, except sites under RCRA enforcement actions and

sites for which other state agencies have assumed jurisdiction.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

No formal liability assurances are available to participants, although DENR will issue a No Further Action letter to participants following the completion of agreed remediation requirements. The NFA letter, however, is not a legally binding statement and only acknowledges that contamination cited in the original agreement has been remediated; DENR may reopen the agreement as future environmental and hazardous waste regulations dictate.

Financial Assistance

Properties redeveloped after July 1, 2000 are eligible for a five-year incremental property tax exemption on any improvements affecting property values. On the basis of appraised property values after redevelopment, property owners are eligible for property tax exclusions in the amount of: 90 percent of the appraised value for the first year; 75 percent in the second year; 50 percent in the third year; 30 percent in the fourth year; and 10 percent in the fifth year.

In addition, no VCP participant will be required to pay more than \$3 million for the implementation of an approved remedial action plan.

Oversight Procedures

IHSB determines whether the site is eligible for VCP participation through preliminary site assessments. Sites with relatively low levels of contamination are able to enter into a consent agreement with DENR and proceed with site remediation under the advisement of registered environmental consultant approved by DENR. Sites with more severe or sensitive contamination issues are required to enter into a consent agreement whereby IHSB oversees remedial activities. In either case, DENR is ultimately responsible for project oversight and both scenarios require the

same procedural aspects to be negotiated with DENR on a site-specific basis. In addition, remediation requirements are tailored to each project, but are intended to reflect the appropriate level of remediation as dictated by CERCLA and subsequent amendments; in certain cases involving low-level sites, land use controls may be engaged in lieu of contaminant remediation. VCP participants are required to make public notice of their intent to remediate a contaminated site prior to entry into a consent agreement with DENR; DENR is required to make public notice of the project and convene public meetings to discuss the project and alternatives before approving a remedial action plan.

Public Notice

Public notice is required prior to negotiation a consent agreement. In addition, DENR must publish a notice and summary of a proposed remedial action plan and consider public commentary prior to approving the plan. In addition, public hearings may be held at the discretion of DENR to explain the plan and develop alternatives.

Memorandum of Agreement with U.S. EPA No.

Fees

VCP participants must pay a \$500 fee before receiving an NFA letter.

Prospective Developer Brownfields Program

Eligibility

Sites

All sites are generally eligible to participate except sites that are included under state UST legislation and CERCLA jurisdiction.

Parties

Eligible parties are restricted to non-responsible parties that intend to buy or sell a contaminated site with the intent of developing or redeveloping the property.

Incentives for Participation

Liability Assurances

Following the successful remediation of a site, as stated in a Brownfields Agreement, DENR issues participant a Covenant Not to Sue. The covenant is transferable to future property owners and successors, developers, and lending institutions affiliated with site redevelopment.

Financial Assistance

See aforementioned Responsible Party Voluntary Cleanup Program: Financial Assistance.

Oversight Procedures

Prospective developers initiate Brownfields Program participation by providing DENR with an affidavit demonstrating that the participant is a non-responsible party and that redevelopment will comply with DENR requirements and procedures and will improve the economic viability and environmental integrity of the site. In addition, applicants must demonstrate the ability to finance or garner financial means to implement a remedial action plan. Prospective developers are also required to file a letter of intent with DENR that includes a thorough assessment of the site including environmental, historical, and legal information, as DENR accepts applicants into the Brownfields Program on a site-specific basis. If accepted, participants must submit a Brownfields Agreement Package to DENR containing further site assessments, preliminary project costs and schedules, and other information detailing the developer's role in site remediation. DENR uses this information to further determine the nature of the project and oversight procedures. Also at this time, prospective developers are required to file a Notice of Intent (a more detailed description of the information in the original letter of intent) and a summary with DENR and the county or counties deeds' office in which the property is located. This procedure acts as formal public notification of intended redevelopment on a contaminated site; both documents must establish a date for public hearing concerning the project. After appropriate DENR and public review, the prospective developer enters into a Brownfields Agreement with DENR detailing existing site informa-

tion and a thorough remedial action plan. Following the successful completion of the Brownfields Agreement, prospective developers are issued a Covenant Not to Sue. DENR may revoke the covenant if future land uses require additional cleanup; if new contamination is discovered or prior standards are determined to be insufficient to protect human and environmental health; if any procedure involved in the process is not completed in a timely fashion; or if the Brownfields Agreement contains fraudulent information.

Public Notice

Participants must provide a copy of an approved Notice of Intent and summary to all local governments with jurisdiction over a site. A summary of the notice must also be published in a local newspaper, be filed for posting in the North Carolina Register, and be posted at the site. DENR will consider all public commentary and conduct public hearings if petitioned. DENR and participants must provide notification of such hearings. All public commentary will be recorded and reflected in the decision to enter a Brownfields Agreement and will be reviewable under the North Carolina Administrative Procedure Act.

Memorandum of Agreement with U.S. EPA No.

Fees

Prospective developers are required to pay an application fee of \$1000. After completing the remedial action plan, participants are required to submit an additional \$500 with a final project report.

Contact Information

Voluntary Cleanup Program (Responsible Party)

Charlotte V. Jesnick

Department of the Environment and Natural Resources

Division of Waste Management

Superfund Branch

401 Oberlin Road

Raleigh, NC 27605

Prospective Developer Brownfields Program
Bruce Nicholson
Department of the Environment and Natural Resources
Division of Waste Management
Superfund Branch
401 Oberlin Road
Raleigh, NC 27605

North Carolina Department of the Environment and Natural Resources Homepage:

<http://www.enr.state.nc.us/EHNR>

Information on brownfields programming:

<http://wastenot.enr.state.nc.us/sfhome/brnfld.htm>

North Dakota

North Dakota does not have a formal voluntary cleanup program at this time; however, the North Dakota Department of Health (NDDOH), Division of Waste Management enforces a policy that places any and all burdens of site remediation on responsible parties.

Private parties are able to voluntarily file site assessments, remedial action and work plans, progress reports, and final reports with NDDOH. On the basis of such information—if remediation complies with state environmental regulations and future land uses—NDDOH may issue a letter stating that no further remedial action is required on a contaminated site; however, this document carries no formal liability assurances. Furthermore, there are no financial incentives in place to encourage voluntary cleanups on contaminated sites.

Contact Information

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Hazardous Waste Program
North Dakota Department of Health
Division of Waste Management
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Bismarck, ND 58506-5520

NDDOH, Hazardous Waste Program Information:
<http://www.ehs.health.state.nd.us/ndhd/envIRON/wm/index.htm>

Ohio

Program
Voluntary Action Program (VAP).

Administering Agency
Ohio Environmental Protection Agency (Ohio EPA).

Authority
Ohio Rev. Code Ann. section 3746.

Date Established
1994.

Eligibility

Sites

All sites are generally eligible to participate except sites that are listed on the NPL; are subject to federal enforcement actions under CERCLA, RCRA, TSCA, the Federal Water Pollution Control Act Amendments of 1972, and the Safe Water Drinking Act; or are subject to Ohio EPA enforcement actions for hazardous waste, UST, and oil and petroleum facilities.

Parties

All parties are generally eligible to participate, unless previously notified in writing by Ohio EPA of potential enforcement actions in regards to a contaminated site.

Incentives for Participation

Liability Assurances

Upon completion of site remediation, a Certified Professional (CP) conducting project oversight issues a No Further Action letter the participant; however, the NFA letter provides no liability assurances and does not require Ohio EPA approval. The participant may request that the NFA letter be submitted to Ohio EPA, however, to qualify for a formal Covenant Not to Sue. Ohio EPA may perform an environmental audit of the site and the NFA letter, as well as any reports and documentation contained therein. If approved, the covenant provides protection from civil claims the state may bring for additional remediation except

in the case of contaminants that fall under CERCLA jurisdiction. Furthermore, the covenant may be transferred to any person associated with ownership or operations on the property, including lending institutions, as long as VAP requirements are maintained.

Financial Assistance

Ohio EPA offers a number of financial incentives to VAP projects. The Ohio Water Pollution Control Loan Fund (WPCLF) offers up to \$3 million per VAP project in low-interest loans that may be applied to specific aspects of remediation activities. The loans are available to finance site assessment as well as project oversight and remediation activities. Loan terms are negotiable and may be spread out over twenty years.

The Ohio Pollution Prevention Loan Program is jointly administered by the Office of Pollution Prevention and the Ohio Department of Development (ODOD). The program issues loans ranging from \$25,000 to \$350,000 to businesses of under 500 employees for the development and implementation of pollution prevention techniques and technologies.

The Ohio Department of Taxation offers several tax exemptions to property owners and business owners who have successfully completed VAP agreement. After Ohio EPA issues a Covenant Not to Sue, the increased property value—following cleanup or improvements made to onsite infrastructure or facilities—will receive an automatic exemption from the Ohio Department of Taxation for property taxes that would exceed the assessed value of the property as certified in the original VAP agreement. Sale or transfer of the property will not affect the tax abatement.

Developers or corporations interested in operating a business on a redeveloped site may apply to the Ohio Department of Taxation for property tax abatements on newly built facilities or infrastructure. The tax abatements may last up to ten years and exempt up to 100 percent of the taxes on redeveloped facilities; however, the corporation must agree to fully remediate existing site contamination (as required for future land uses) and to make improvements to the site that will equal or exceed 250 percent of the assessed value of the property, prior to redevelopment.

Furthermore, state agencies including the ODOD and the Ohio Water Development Authority (OWDA) offer a number of grants and tax assistance programs to encourage VAP participation and land reuse initiatives. ODOD's Brownfield Site Cleanup Tax Credit Program offers VAP participants tax credits for 10 percent of specific remediation activities or \$500,000, whichever is less. In certain jurisdictions, the terms of the credits may be expanded to 15 percent of remediation costs or \$750,000.

ODOD's Brownfield Grant Assistance Program offers a maximum grant of \$500,000 for land acquisition, infrastructure improvements, and building renovations on sites in pre-determined distressed areas. Municipalities must provide a 25 percent match for funding and recipients are required to file annual progress reports during a five-year term.

The Competitive Economic Development Program is administered by the Office of Housing and Community Partnerships as a derivative of the Community Development Block Grant of the U.S. Department of Housing and Urban Development. The program offers loans to promote the creation and retention of permanent low- to moderate-income private sector jobs in non-entitlement communities. Funding terms and amounts vary among projects, but cannot exceed \$500,000.

OWDA offers VAP participants financial incentives that include favorable-rate loans and credit enhancements that may be utilized to solicit various funding measures. VAP projects that involve publicly or privately owned lands qualify for OWDA assistance to be applied toward site assessment and project planning.

Other Incentives

After attaining an NFA letter, VAP participants may bring civil claims for cost recovery associated with site assessment as well as project planning and implementation costs against any PRP associated with the site.

Oversight Procedures

VAP projects are overseen by registered certified professionals (with the assistance of certified laboratories), with Ohio EPA playing a limited role in cleanup activities. Prior to application for VAP

participation, interested parties are required to conduct preliminary site assessments to determine if any remediation will be necessary. If so, the parties consult a registered CP to assist with determining the appropriate level of site remediation for the intended future land use. Participants may select from residential, commercial, industrial, or alternative generic categories for land use—each category implies different levels of onsite cleanup including soil and ground water resources. After successfully completing the VAP, the participant is issued an NFA letter by the certified professional; however, Ohio EPA is charged to conduct audits of at least 25 percent of the sites that took part in the VAP program in the previous year and ultimately decide whether a Covenant Not to Sue is warranted by VAP projects. Ohio EPA will also provide technical assistance to parties upon request.

Public Notice
Not required.

Memorandum of Agreement with U.S. EPA
No.

Fees
To receive a Covenant Not to Sue, participants must submit an NFA letter and a fee of \$950 for sites requiring only a Phase I site assessment; or \$4,950 for sites requiring more extensive investigation and remediation activities.

Contact Information
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Ohio Environmental Protection Agency
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Columbus, OH 43216-1049

Ohio Environmental Protection Agency Homepage:
<http://www.epa.state.oh.us>

Information on the Ohio VAP:
<http://www.epa.state.oh.us/derr/volunt.html>

Oklahoma

Program
Voluntary Cleanup Program.

Administering Agency
Oklahoma Department of Environmental Quality (DEQ).

Authority
Okla. Stat. Ann. Tit. 27A, section 2-15 *et seq.*

Date Established
1996.

Eligibility

Sites
All sites are generally eligible to participate except sites under enforcement actions from EPA.

Parties
All parties are generally eligible to participate except parties undergoing an EPA corrective action; parties operating waste generation, transportation, treatment, storage, recycling, or disposal facilities below compliance standards issued by a state-level agency or court ruling; or parties demonstrating a pattern of noncompliance.

Incentives for Participation

Liability Assurances
Certificates of Completion are issued to participants who successfully remediate sites in compliance with a DEQ-approved work plan. A Certificate of No Action Necessary is issued to participants who have fulfilled the appropriate VCP procedures when site assessments determine that contamination levels do not exceed requirements for future land uses. Both documents exclude the holder from further liability associated with the contamination in the VCP agreement, as well as third party claims associated with site remediation. Responsible parties may receive the same liability assurances that are transferable to all subsequent parties associated with the property as long as specified land uses are maintained.

Financial Assistance

The Quality Jobs Act provides site-specific participation in payment programs for businesses that locate their principal facilities on formerly contaminated sites. By locating operations on a remediated site of at least ten acres in size, businesses may become eligible for participation in the Quality Jobs Act Program in lieu of certain eligibility criteria. If eligible for participation, businesses will receive quarterly incentive payments for a ten-year period determined through a series of calculations involving the net benefits provided through gross payroll increases and jobs created.

Oversight Procedures

DEQ initially determines whether an applicant qualifies for participation by reviewing information such as site assessments as well as historical and legal records; DEQ will also use this information to decide whether remediation is required. If remediation is not required, DEQ issues a Certificate of No Action Necessary and a participant may proceed with redevelopment that complies with appropriate land use for the site. If remediation is required, the participant enters into a memorandum of agreement and consent order with DEQ to classify the nature and extent contamination present and estimate oversight costs. Once the site and project estimates have been characterized, the participant must submit a complete VCP application including a work plan, a quality assurance plan, a sampling and analysis plan, and a health and safety plan. The application must also provide a risk assessment of cleanup activities and identify the future use of the property as well as soil and ground water resources. DEQ uses risk-based remediation procedures to establish cleanup levels at the site. Participants enter into a consent agreement acknowledging and pledging to achieve the established remediation requirements. Once the VCP agreement has been successfully executed, DEQ issues a COC to the participant. Both the COC and the Certificate of No Action Necessary may be voided if they are not filed with the proper county authorities or if future land uses require higher levels of remediation.

Public Notice

Applicants must publish application information and compiled draft revision plans in a public newspaper and file an affidavit that certifies the publication with DEQ. The notification must provide a date and a location for a public hearing, or an invitation for public commentary if such a meeting is unfeasible. DEQ may proceed with its approval process if there is little or no call for a public hearing; however, if a hearing is held, DEQ must consider all commentary in its final approval of remediation plans.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

Applicants must pay a fee for direct and indirect oversight costs ranging from \$2,500 to \$10,000 depending on the scope and complexity of contamination issues at the site. DEQ will notify participants when project oversight balances fall below \$500, but will also refund any unspent monies following the project.

Contact Information

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Oklahoma Department of Environmental Quality
Homepage:
<http://www.deq.state.ok.us>

Oregon

Program
Voluntary Cleanup Program.

Administering Agency
Oregon Department of Environmental Quality (DEQ).

Authority
Or. Rev. Stat. section 465.327.

Date Established
1991, revised 1995 and 1999 (Independent Cleanup Pathway).

Eligibility

Sites

All sites are generally eligible to participate except sites listed on the NPL, sites under RCRA jurisdiction, and sites currently subject to other federal authority.

Parties

All parties are generally eligible to participate at the discretion of DEQ; however, entry into prospective purchaser agreements is limited to parties not responsible for site contamination.

Incentives for Participation

Liability Assurances

When DEQ has determined that remediation has been successfully completed, participants will be issued a No Further Action letter. The NFA letter may be negotiated into a Covenant Not to Sue if DEQ determines that site remediation has been completed to an extent that does not threaten public or environmental health; site remediation may be expedited by such an agreement; and that such an agreement is in the best interests of the public. Non-responsible purchasers also receive liability protection through a prospective purchaser agreement.

Financial Assistance

The Brownfield Redevelopment Fund (BRF) allows the Department of Economic Development (DED) to issue loans for site assessment. All

participants are eligible to apply for BRF loans; however, PRPs are may only receive 40 percent of the total BRF allocation and may not receive monies if it is determined that they knowingly participated in activities or failed to comply with DEQ orders that led to site contamination.

The Special Public Works Fund provides loans to assist municipalities to conduct environmental assessments associated with infrastructure projects; however, funding may not be used for activities or development that occurs off-site.

The Credit Enhancement Fund provides loans and credit guarantees to assist small businesses as well as wood product and agricultural industries to perform environmental assessments.

Other Incentives

DEQ has introduced the Independent Cleanup Pathway (ICP) for sites characterized by (1) low- to medium-levels of contamination; (2) well defined contamination issues and potential remedies; and (3) low potentials to harm human or environmental health. The ICP is administered using the same procedures as the VCP, except with minimal DEQ oversight. Accordingly, participation fees and technical requirements are significantly lower, although DEQ technical assistance is available to participants. If procedures are followed and remedial requirements are met to the satisfaction of DEQ, then ICP participants are issued an NFA letter that holds the same entitlement as the comparable VCP NFA letter.

Oversight Procedures

Applicants must first submit an Intent to Participate form with DEQ and wait until a project manager is assigned to the project. Once assigned a project manager, participants must sign a Letter of Agreement allowing DEQ to access, assess, and review site information and commit to pay DEQ oversight costs. Participants must develop a detailed work plan that describes the extent of site contamination as well as appropriate levels and methods of remediation to be applied at the site. In circumstances where projects seek partial remediation combined with the implementation of institutional controls, DEQ reviews all risk assessments and feasibility studies. Furthermore, DEQ conducts interim assessment reviews,

provides site guidance as well as periodic on-site oversight. When cleanup is completed, DEQ reviews the project and final report and grants NFA letters to parties whose work is acceptable.

Public Notice

Participants are required to make public notice in a local newspaper after being accepted into the VCP or when negotiating a modification to a remedy agreement. The notice must identify the site, summarize the proposed project or modification, describe all associated state and federal regulations, and invite public commentary. If petitioned by community members, a public meeting will be scheduled near the site in question to collect public commentary. DEQ must consider any public commentary in the final approval of a cleanup plan and is required to publish its final decision in a local newspaper.

Memorandum of Agreement with U.S. EPA No.

Fees

A \$5,000 deposit is required with the application to cover oversight costs; however, in some cases the deposit has been waived and program participants have been billed monthly. Furthermore, DEQ will consider whether a lower deposit may be appropriate for certain types of projects. For example, in cases where a site will require no remediation, a participant may select an expedited review process that requires a \$2,000 deposit. Likewise, ICP participants are required only to make a \$1,500 deposit. Finally, a party wishing to enter into a prospective purchaser agreement is required to make a \$2,500 deposit; however, this agreement must be negotiated in the initial stages of the VCP application process.

Contact Information

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Waste Management and Cleanup Division
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Oregon Department of Environmental Quality
Homepage:
<http://www.deq.state.or.us>

Pennsylvania

Program

Voluntary Cleanup Program—“Land Recycling Program” (LRP).

Administering Agency

Pennsylvania Department of Environmental Protection (DEP) and Pennsylvania Department of Commerce.

Authority

25 Pa. Code Ch. 250.

Date Established

1995.

Pennsylvania's Land Recycling Program consists of three separate acts that address voluntary cleanup procedures (Act 2 of 1995, the Land Recycling and Environmental Remediation Standards Act), liability assurances and institutional controls (Act 3 of 1995, the Economic Development Agency, Fiduciary, and Lender Liability Protection Act), and financial assistance (Act 4 of 1995, the Industrial Sites Environmental Assessment Act). Together these acts form a comprehensive approach toward voluntary site remediation and redevelopment.

Eligibility

Sites

All sites are generally eligible to participate.

Parties

All parties are generally eligible to participate; however, responsible parties are ineligible to receive indemnity from illegal waste disposal activities and to participate in special funding programs for abandoned sites or sites located in disadvantaged communities.

Incentives for Participation

Liability Assurances

Participants who complete cleanups according to approved standards and contractual agreements are released from liabilities relating to stated

contamination, civil claims, and contribution actions; however, property damage and personal injury claims, as well as federal liabilities are not included. Liability assurances are transferable to current and future site owners and operators, any persons that participated in site remediation, developers, and public utility companies that provide service to the site.

Financial Assistance

The Industrial Sites Cleanup Fund provides financial assistance for two categories of non-responsible participants in the LRP. Political subdivisions of state entities and local development authorities that own contaminated properties or are overseeing site remediation are eligible for grants and loans. In addition, all other parties determined to be eligible by the Pennsylvania Department of Community and Economic Development (DCED) qualify for loans. Eligibility criteria consider numerous factors including project feasibility, economic redevelopment impacts a project may have in a community. Under this fund, up to 75 percent of site assessment and project implementation costs may be funded. Furthermore, loan interest rates may not exceed 2 percent.

The Industrial Sites Environmental Assessment Fund allocates grants from a \$2 million fund to municipalities, local economic development authorities, and similar nonprofit entities to perform environmental assessments in industrial sites in “distressed communities”—designated by the Pennsylvania Department of Commerce under the Business Infrastructure Development Act. Although no formal restrictions exist on funding allocations, DCED generally recommends terms similar to the Industrial Sites Cleanup Fund (mentioned above).

Other Incentives

The LRP allows participants to select from three levels, or a combination, of remediation standards depending on future uses of the property. Categories include background (remediation must restore the site to conditions prior to contamination), statewide (remediation must adhere to statewide public health and environmental standards), and site-specific (remediation levels are dependant on

specific geologic, hydrologic, and topographic site characteristics, as well as the nature and extent of contamination).

The LRP also contains a Special Industrial Areas Program for non-responsible participants that typically provide more lenient cleanup standards. The program targets abandoned sites and those sites where a responsible party is unable to finance site remediation in DCED-designated distressed areas. Through the application of land use controls, remediation projects may require effective isolation and containment rather than removal and remediation of contaminants as long as public and environmental health standards are not compromised.

Oversight Procedures

Oversight procedures are largely dependent on the cleanup standards selected by participants; however, all applicants are required to submit a Notification of Intent to Remediate (NIR) document to DEP before initiating site remediation activities (unless participants select background or statewide standards and remediation will occur within ninety days of a release). In either case, DEP approval of remediation plans is not required prior to implementation. After the project is completed, a final report must be submitted to DEP and appropriate local governmental authorities. If cleanup efforts satisfy the selected standards, then DEP releases participants from further liabilities at the site.

When site-specific standards are selected, applicants are required to submit remedial investigation reports that include preliminary site assessments, analyses of potential contamination migration and exposure pathways, and risk assessments, as well as proposed work plans and schedules. In addition, a public involvement plan must be developed to allow local municipal authorities and community members to participate in remediation and redevelopment planning through public hearings. If approved, the project may proceed; however, DEP reserves the right to conduct on-site investigation during the remediation process. After the project is completed, a final report must be submitted to DEP and appropriate local governmental authorities.

As of January 1, 2000, all LRP participants are required to file two additional documents—a Preparation Checklist and Final Report Summary—prior to final approval and liability assurances from DEP.

Liability assurances may be voided or reopened if remedial standards are not attained; fraud is involved in agreements or when attaining remedial standards; new contamination is discovered; future land uses or remedial standards are changed; or releases that occur (1) after July 18, 1995, (2) on sites not previously used for industrial pursuits, (3) where remediation involves land use controls, or (4) where contaminant removal and remediation is technically and economically feasible.

Public Notice

Participants are required to file a copy of an NIR document with the municipality in which a site is located. A summary of the notice that identifies the site, lists all contaminants to be addressed, and outlines the proposed remedial action must be published in a local newspaper. If petitioned by the public, DEP must develop a plan to incorporate public participation into the development and review of remedial activities.

Memorandum of Agreement with U.S. EPA
No.

Fees

DEP seeks to recover oversight and administrative costs where applicable.

Contact Information

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Director
Land Recycling and Cleanup Program
Pennsylvania Department of Environmental
Protection
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Harrisburg, PA 17105-8471

Pennsylvania Department of Environmental
Protection Homepage:
<http://www.dep.state.pa.us>

Information on Pennsylvania's LRP:
<http://www.dep.state.pa.us/dep/deputate/airwaste/wm/landrecy/default.htm>

Puerto Rico

Puerto Rico does not have a formal voluntary cleanup program at this time.

Contact Information

Miguel Maldonado
Environmental Quality Board
P.O. Box 11486
San Juan, PR 00910

Rhode Island

Program
Voluntary Cleanup Program.

Administering Agency
Rhode Island Department of Environmental
Management (DEM).

Authority
R.I. Gen. Laws section 23-19.14-1 *et seq.*

Date Established
1995, amended 1997.

Eligibility

Sites

All sites are generally eligible to participate.

Parties

All non-responsible parties, including prospective purchasers and innocent landowners who performed due diligence prior to acquiring the site, are eligible to participate.

Incentives for Participation

Liability Assurances

Following satisfactory site remediation, DEM issues a Letter of Compliance to exempt participants from liabilities associated with contaminants cited in the remedial action plan. Furthermore, DEM may negotiate a Covenant Not to Sue with individual VCP participants to limit liabilities associated with future land uses and contaminant releases. A covenant may be transferred, under the discretion of DEM, to future successors or assignees of current holders; however, future liability assurances may be restricted to the terms of the original agreement.

Financial Assistance

The Rhode Island Economic Development Corporation (EDC) offers low-interest loans to finance site assessments and remedial action plan development; however, loans may only be offered to projects in areas determined by the Rhode Island Department of Economic Development as areas of

critical economic concern. Eligibility requirements include the potential to create jobs and encourage commercial and industrial redevelopment. Reimbursement schedules are tailored to EDC and recipient needs and payments are made to the Rhode Island Tire Remediation Account.

The Rhode Island Mill Building and Economic Revitalization Act offers a series of tax credits to encourage the remediation and redevelopment of historic industrial mill sites.

Exemptions from state sales and local property taxation are offered to sites remediated and operated in compliance with DEM standards and agreements; exemptions are available for as long as the site conditions and operations maintain compliance requirements.

Oversight Procedures

After contacting DEM, applicants are issued a Voluntary Procedure Letter detailing all of the procedural requirements necessary to participate in the VCP. On a site-specific basis, DEM may require a site assessment and preliminary report that contains extensive background information on the site; describes the nature and extent of contaminations; models contaminant migration and exposure pathways; and develops a remediation work plan. In addition, applicants must develop two alternative work plans supported by site assessments and contaminant models. If accepted, DEM issues Remedial Decision Letter that designates the preferred remediation alternative. Participants must then submit a Remedial Action Work Plan that further develops this alternative and describes technical information related to implementing and executing the plan. If the cleanup satisfies the requirements as outlined in the work plan, DEM issues a Letter of Completion.

Public Notice

DEM is required to develop a plan to incorporate public participation into the remedial action review process that includes notifying all contiguous landowners when work plans are proposed; entering all documents related to the negotiation process public record; and notifying all contiguous landowners and other interested parties when remedial activities are determined to be complete.

DEM is also required to make public notice of any proposed settlement agreements related to remedial activities and allow for public commentary; all commentary must be considered before DEM issues its final judgment.

Memorandum of Agreement with U.S. EPA
Yes.

Fees
A \$1,000 fee is required for remedial action approval by DEM.

Contact Information
Tim Regan
Rhode Island Department of Environmental Management
Division of Site Remediation
291 Promenade Street
Providence, RI 02908

Rhode Island Department of Environmental Management Homepage:
<http://www.state.ri.us/dem>

South Carolina

Program
Voluntary Cleanup Program.

Administering Agency
South Carolina Department of Health and Environmental Control (DHEC).

Authority
S.C. Code Ann. section 44-56-200.

Date Established
1988, amended 1995.

Eligibility

Sites

All sites are generally eligible to participate except sites listed on the NPL.

Parties

All parties are generally eligible to participate except parties under DHEC order or permit for assessment or remediation of the site in question. Non-responsible parties must demonstrate financial viability and certify that they are not responsible for site contamination according to DHEC criteria.

Incentives for Participation

Liability Assurances

DHEC will issue a Certificate of Completion that includes a Covenant Not to Sue to a party that has successfully completed the VCP. The covenant provides protection from DHEC liability and describes any proposed future land uses, deed restrictions, and institutional controls. Non-responsible parties may receive greater liability assurances from pre-existing site contamination and contribution action.

Financial Assistance

No financial assistance is available at this time.

Oversight Procedures

Participants negotiate a contract with DHEC that will be tailored to site-specific conditions. The

contract will outline the procedural details of site assessment and remediation, as well as the roles of both parties, including the nature and extent of DHEC oversight. Site-specific cleanup standards and institutional controls to be implemented are determined by the future land uses. Typically, a DHEC staff member is assigned to manage site remediation by reviewing reports and overseeing cleanup activities. In some cases, a non-responsible party may be held to less stringent remediation standards as long as human and environmental health standards are not compromised. After successfully completing the remediation agreement, DHEC issues a COC to participants.

Public Notice

Not required, but facilitated by DHEC's Community Relations Staff in projects where DHEC leads coordination efforts. Public notice may include informational workshops and public meetings.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants are required to reimburse DHEC for all incurred oversight costs.

Contact Information

Gail Rawls Jeter
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

South Carolina Department of Health and Environmental Control Homepage:
<http://www.state.sc.us/dhec>

South Dakota

South Dakota is currently developing a voluntary cleanup program within existing state law. Once approved, the program will be administered by the South Dakota Department of Environment and Natural Resources (DENR).

Eligibility will be extended to any responsible party, group, or entity that approaches DENR under the provisions of SDCL 34A-10-17; however, South Dakota does not plan to offer liability relief to prospective purchasers.

No financial assistance is available at this time.

The program will contain direct oversight of site assessment, corrective actions, and compliance monitoring.

The state expects to provide liability relief to responsible parties through a proposed Superfund Memorandum of Agreement with EPA.

Contact Information

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Foss Building
523 East Capitol Avenue
Pierre, SD 57501-3182

South Dakota DENR Homepage:
<http://www.state.sd.us/denr>

Tennessee

Program
Superfund Voluntary Oversight and Assistance
Program (VOAP).

Administering Agency
Tennessee Department of Environment and
Conservation (TDEC), Division of Superfund
(DSF).

Authority
Tenn. Code Ann. section 68-212-224.

Date Established
1994.

Eligibility

Sites

Inactive hazardous substance sites are eligible to participate, except sites on the NPL or sites where petroleum is the only contaminant present.

Parties

All parties are generally eligible to participate if they are able to demonstrate the will and the ability to complete site investigation and cleanup activities.

Incentives for Participation

Liability Assurances

Upon successful remediation of a site, thereby satisfying a negotiated Consent Order and Agreement (COA), the state issues a Record of Decision and a letter of completion to participants. The letter of completion protects VOAP participants from further site remediation mandates by TDEC. However, DSF may assign allocations of liability to VOAP participants in the original COA, on the basis of responsibility for pre-existing site contamination or releases that occur during or after site remediation.

Financial Assistance

No financial assistance is available at this time; however, DSF is authorized to spend money from a state Hazardous Waste Remedial Action Fund to

pay for investigative and remedial costs that are not allocated under the COA to the VOAP participant.

Oversight Procedures

An application must be submitted to DSF that includes information concerning projected site activities; if accepted, participants enter into a COA that outlines the methods to be used for investigation, cleanup, monitoring, maintenance, and oversight cost reimbursement. In addition, the COA contains a clause waiving final dispute-resolution authority to the Tennessee Solid Waste Disposal Control Board. TDEC and DSF staff members provide oversight for cleanup activities. TDEC issues a Record of Decision and letter of completion after the participant successfully completes the terms of the COA; however, TDEC reserves the right to revisit a letter of completion if new information surfaces that refutes the effectiveness of the remedial activities performed.

Public Notice

Required under the negotiated COA in the form of a newspaper notice and public hearings prior to the selection of a remediation technology or plan.

Memorandum of Agreement with U.S. EPA
No.

Fees

Participants must pay a \$5,000 fee to enroll in the program, as well as reimburse DSF for all incurred oversight costs.

Contact Information

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Program
Tennessee Department of Environment and
Conservation
Division of Superfund
401 Church Street
L&C Annex, 4th Floor
Nashville, TN 37243

Tennessee Department of Environment and
Conservation Homepage
<http://www.state.tn.us/environment>

Texas

Program
Voluntary Cleanup Program.

Administering Agency
Texas Natural Resource Conservation Commission (TNRCC).

Authority
Tex. Health & Safety Code Ann. sections 361.601 to 361.613.

Date Established
1995, amended 1997 and 1999.

Eligibility

Sites

All sites are generally eligible to participate, except those sites listed on or proposed for listing on the NPL, sites operating under special TNRCC or RCRA permits, sites subject to other state or federal enforcement actions, and sites where all costs recoverable under the state superfund are not paid in full.

Parties

All parties are generally eligible to participate; however, responsible parties are not eligible for liability assurances.

Incentives for Participation

Liability Assurances

After remediation is completed, TNRCC issues a Certificate of Completion that provides non-responsible parties, prospective purchasers and subsequent owners, and lenders release from liability under state law, except in a circumstance where the prospective purchaser is a party responsible for site contamination. Responsible parties are also issued a COC upon successful execution of the VCP; however, responsible parties remain liable for future site remediation costs as environmental standards dictate. Also, once enrolled in the VCP, a no enforcement action may be initiated by TNRCC as long as the participant remains in compliance with the terms of the agreement.

Financial Assistance

Property tax abatements are available for VCP properties located in state-designated reinvestment zones. The tax abatements apply to improvements to the property or facilities therein where contamination has affected the real property value of a site; however, the tax abatements are not applicable to projects receiving tax-increment bond financing. The abatements decrease from 100 percent of the property value by 25 percent annually during a four-year term. The tax abatements are not available to school districts and are subject to revision or termination if future land uses deviate from those specified in the COC.

Other Incentives

Participants may request a focused site investigation, or conceptual exposure assessment model (CEAM), where site contamination may be limited to specific areas on the site or where future land uses do not require contaminant removal or remediation. TNRCC must review such projects on a site-specific basis and ensure that human and environmental health will not be compromised, existing contamination will not be exacerbated, and limited remediation will not risk future expenditures if new contaminants are discovered or land uses change.

The Texas Risk Reduction Program (TRRP) creates a flexible and tiered approach to the application of site assessment and remediation standards for VCP projects. TRRP complements the CEAM approach by allowing participants to establish site-specific remediation standards and plans based on future land uses. Under TRRP, participants may forego extensive site remediation by notifying the general public and implementing appropriate institutional controls.

Participants may also terminate the VCP agreement at any time during the program with written notice to TNRCC; however, participants will lose all application fees and additional oversight expenditures incurred prior to project termination. In addition, TNRCC may pursue the recovery of any remaining remediation costs.

Oversight Procedures

An application, site assessment, and fee must be submitted TNRCC that includes a site assessment;

if accepted, participants enter into a voluntary cleanup agreement detailing remediation activities including work plans, schedules, cleanup standards, and future land uses. If the agreement cannot be formulated within thirty days, TNRCC may terminate negotiations and retain the original application fee. Participants are required to perform another comprehensive site investigation consisting interim reports and a final completion report. Throughout the remediation process, TNRCC reviews project reports for accuracy, quality, and completeness, and may require revisions or additional information as it deems necessary. After the successful completion of the VCP agreement and submission of a final report, TNRCC issues a COC. COC liability assurances may be reopened if future land uses are altered or not maintained in compliance with implemented institutional controls, or if additional contamination is discovered or released in the future.

Public Notice

Participants are required to notify property owners and interest holders of lands that are likely to have been contaminated through migratory exposure of contaminants where concentration levels exceed residential health-based standards.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

The participant must submit a \$1,000 application fee from which oversight costs are deducted; if rejected, TNRCC may refund half of the application fee if applicants do not resubmit the application. Participants are accountable for any additional oversight costs incurred by TNRCC.

Contact Information

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Pollution Cleanup Division
Texas Natural Resources Conservation
Commission
MC 143
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Austin TX, 78711-3087

Texas Natural Resources Conservation
Commission Homepage:
<http://www.trncc.state.tx.us>

Information on Texas VCP:

<http://www.trncc.state.tx.us/permitting/remed/vcp/>

Utah

Program
Voluntary Cleanup Program—“Voluntary Release Cleanup Program.”

Administering Agency
Utah Department of Environmental Quality (UDEQ).

Authority
Utah Code Ann. section 19-8-101 *et seq.*

Date Established
1997.

Eligibility

Sites

All sites are generally eligible to participate except sites listed on the NPL, sites under RCRA jurisdiction, and sites under state or federal enforcement actions.

Parties

All parties are generally eligible to participate; however, UDEQ reserves the right to reject a participant if the agency believes that a working relationship cannot be achieved.

Incentives for Participation

Liability Assurances

After remediation activities are completed, UDEQ issues a Certificate of Completion that provides non-responsible parties, prospective purchasers and subsequent owners, and lenders release from liability under state law. Responsible parties are also issued a COC upon successful execution of the VCP; however, responsible parties remain liable for future site remediation costs as environmental standards dictate. In addition, liability assurances from UDEQ enforcement actions are provided to participants as long as site remediation occurs within the terms of the VCP agreement.

Financial Assistance

No financial assistance is available at this time.

Other Incentives

Participants and UDEQ may terminate the VCP agreement at any time during the program with written notice to the other party; however, participants will lose all application fees and additional oversight expenditures incurred prior to project termination.

Oversight Procedures

Applicants must submit historical, legal, and operational records pertaining to a site, owners, and operators, as well as an environmental site assessment to UDEQ. Once approved, participants and UDEQ must negotiate a voluntary cleanup agreement that describes potential remediation activities including work plans, schedules, cleanup standards, and future land uses, as well as a reimbursement plan for oversight costs incurred by UDEQ. The agreement will also establish contractual terms regarding UDEQ site access, dispute resolution measures, liability releases, and indemnification. Furthermore, although most VCP cleanups do not require state or federal permits, a VCP agreement negotiation would determine the need for such regulatory action. If an agreement cannot be formulated within thirty days, both parties may withdraw from negotiations, but UDEQ will retain the original application fee. Liability assurances are provided to participants as long as site remediation occurs within and fully satisfies the terms of the VCP agreement. Reopener provisions may be applied when there is a change in land use at a site, the VCP agreement is determined to be based on fraudulent or misrepresented information, or a participant knowingly fails to disclose material information relevant to the nature and extent of site contamination and remediation.

Public Notice

Not required.

Memorandum of Agreement with U.S. EPA No.

Fees

A \$2,000 application fee is required along with the application. The fee is used to cover UDEQ's administrative costs for processing and reviewing

the VCP application for eligibility and review of the environmental assessment. Participants are also required to reimburse UDEQ for any additional oversight costs.

Contact Information

Brent Everett
 Coordinator, Voluntary Cleanup Program
 Utah Department of Environmental Quality
 Division of Environmental Response and
 Remediation
 168 North 1950 West
 Salt Lake City, UT 84114-4810

Utah Department of Environmental Quality
 Homepage:
<http://www.eq.state.ut.us>

Information on Utah VCP:
<http://www.deq.state.ut.us/eqerr/superfnd/vcphome.html>

Vermont

Program
 Redevelopment of Contaminated Properties
 Program (RCPP).

Administering Agency
 Vermont Agency of Natural Resources (ANR).

Authority
 Vt. Stat. Ann. Tit. 10 section 6601 et seq., section
 6615a.

Date Established
 1995.

The Vermont RCPP differs from many state VCPs in the manner in which it addresses voluntary participation. Many VCPs offer voluntary remediation as an alternative to regulatory enforcement of mandatory cleanup actions; the RCPP stresses voluntary management of contaminated sites as long as PRPs are identifiable.

Eligibility

Sites

Sites must be vacant, abandoned, substantially underutilized, or sites to be acquired by a municipality. Ineligible sites include sites listed on the NPL, sites undergoing corrective action under RCRA, and sites with releases subject only to the Vermont UST program.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

ANR will not impose action against RCPP participants who conduct site investigations and corrective actions in accordance with approved work plans and other statutory requirements. After successfully completing the RCPP, ANR will issue a Certificate of Completion to participants. Liability assurances are transferable to any future owner or parties with ownership interest in the property. In addition to contaminants addressed in the

RCCP agreement, the COC exonerates the holder from liabilities related to contamination issues that arise from detection methods or technologies not available at the time the original agreement is adopted; materials that are added to hazardous material listings after the original agreement is adopted; and more stringent environmental standards enacted after the original agreement is adopted. These assurances are not transferable, however, if the RCCP is not fulfilled prior to the transfer of ownership (unless the new owners complete the RCCP) or the new owners exacerbate existing site contamination. Furthermore, COC indemnification does not apply to third-party claims.

Financial Assistance

No financial incentives are available at this time.

Oversight Procedures

Applicants must submit historical, legal, and operational records pertaining to the site, owners, and operators, as well as an environmental site assessment to ANR (ANR may require any additional information necessary to determine site eligibility). If rejected, the participant may revise and resubmit the plan or withdraw from the program. If approved, participants submit a site investigation work plan to assay and characterize site contamination. After performing the site investigation, participants must submit a more formal site investigation report describing the nature and extent of site contamination, as well as the effects such contamination would have on future land uses and redevelopment plans. At this time, ANR may not require site remediation and grant participants a No Further Action letter. If ANR determines that site remediation is necessary, a corrective action plan (CAP) is negotiated that includes work plans, implementation schedules, and future land uses, as well as the land use controls and monitoring programs necessary to comply with human and environmental health standards. After acceptance and approval of a CAP, participants proceed with the implementation of the RCCP and site remediation. After the successful completion of the CAP, ANR will issue a Certificate of Completion to participants. The COC will include any institutional controls

required for the property and must be filed with local land records.

Public Notice

Before a CAP is approved, participants are required to file a public notice with the local newspaper and the town clerk where the property is located, as well as invite public commentary on proposed remedial activities. ANR will take into account public concerns related to the project before giving final approval to the CAP.

Memorandum of Agreement with U.S. EPA No.

Fees

A nonrefundable \$500 fee must be submitted to ANR for application review. After acceptance into the program, participants must submit an additional \$5,000 deposit from which oversight costs are drawn. In addition, ANR may recover additional oversight costs once the deposit is depleted and reserves the right to recover costs from responsible parties.

Contact Information

George Desch
Chief of Sites Management Section
Vermont Agency of Natural Resources
Department of Environmental Conservation
103 S. Main Street
Waterbury, VT 05671-3491

Vermont Agency of Natural Resources Homepage:
<http://www.anr.state.vt.us>

Virginia

Program
Voluntary Remediation Program.

Administering Agency
Virginia Department of Environmental Quality (DEQ).

Authority
Va. Code Ann. section 10.1-1429.1 to .3.

Date Established
1995.

Eligibility

Sites

All sites are generally eligible to participate except sites that are the subject of regulatory action under CERCLA, RCRA, the Virginia Waste Management Act, the Virginia State Water Control Law, or other applicable statutory actions under the jurisdiction of EPA or DEQ.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

After successfully remediating a site, DEQ will issue participants a Certificate of Satisfactory Completion granting immunity from state enforcement action; however, immunity is limited to the original agreements of the VRP and rely on the maintenance of any institutional controls therein. The certificate runs with the land and may be transferred to future owners or parties with ownership interest in the site. Furthermore, sites that have been previously cleaned up or do not require remediation may request a Certificate of Satisfactory Completion to provide prospective purchasers, investors, and lending institutions with increased liability assurances.

Financial Assistance

No financial assistance is available at this time.

Other Incentives

The VRP allows participants to select from three levels, or a combination, of remediation standards depending on future uses of the property. Categories include background (remediation must restore the site to conditions prior to contamination, as determined by comparing contaminated areas to pristine areas on or near the site), published (remediation must adhere to media-specific public health and environmental standards), and site-specific (remediation levels are dependant on specific geologic, hydrologic, and topographic site characteristics, as well as the nature and extent of contamination and future development scenarios).

Oversight Procedures

VRP applicants are required to notify DEQ of their intent to pursue voluntary site remediation in writing and provide historical, legal, and operational records pertaining to the site, owners, and operators, as well as an environmental site assessment and a certification that the contained information is true and accurate. If approved, participants must submit a voluntary remediation report to act as the basis of all remedial activities; the report will contain a site characterization, a remedial action plan, documentation of public notice, and, where applicable, demonstration of completion. The report will also contain the prescribed level or combination of cleanup requirements as well as future land use restrictions and appropriate institutional controls. After completion of the VRP, DEQ issues a Certificate of Satisfactory Completion to participants; however, DEQ may revoke a certificate if new contamination is discovered that poses an imminent threat to public or environmental health or the original agreement was based on fraudulent information.

Public Notice

Participants are required to provide local government authorities and adjacent property owners with all proposed remedial action plans and other materials relevant to the cleanup process. In addition, public notification and an invitation for public commentary must be made in a local newspaper. Participants must provide DEQ with a summary of comments as well as a document that

demonstrates how such comments were accommodated by remedial action plans.

Memorandum of Agreement with U.S. EPA No.

Fees

A registration fee of \$5,000 or 1 percent of remediation costs, whichever is less, is assessed to VRP participants.

Contact Information

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Virginia Department of Environmental Quality
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Richmond, VA 23240

Virginia Department of Environmental Quality
Homepage:
<http://www.deq.state.va.us>

Information on the Virginia VRP:
<http://www.deq.state.va.us/vrp>

Washington

Program
Voluntary Cleanup Program.

Administering Agency
Washington State Department of Ecology (Ecology).

Authority
Wash. Rev. Code section 173-340-300; section 173-340-550 (7).

Date Established
1991; amended 1993; consolidated 1997.

The Washington State VCP can be divided into three categories on the basis of oversight provided by the Department of Ecology and responsibility imparted to program participants. The programs may be characterized as Voluntary Cleanups with Department Involvement, the Independent Remedial Action Program (IRAP), and Prospective Purchaser Agreements (PPAs). The following discussion of the Washington State VCP describes the differences among the oversight requirements and liability assurances of each program; nonetheless, all hazardous waste remediation plans are beholden to the same environmental standards.

Voluntary Cleanups with Department Involvement

In these circumstances, participants may select between two levels Ecology oversight prior to entry into a VCP agreement. These services are rendered on a fee-for-service basis and are intended for sites where oversight is perceived to be necessary, but at undetermined levels.

Informal Technical Consultations

As mentioned, participants may seek Ecology consultation to determine not only the nature and extent of site contamination, but also whether additional oversight might be beneficial to the project, or an independent cleanup would be more favorable.

Eligibility

Sites

All sites are generally eligible to participate.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

The technical consultation provided by Ecology is restricted to advisory information. Although Ecology may issue a statement declaring that no further action is required on the site, the document is non-binding and will not provide liability assurances from state regulations or third-party claims. As such, it holds the same merit as an independent consultation performed by an accredited environmental consulting firm.

Financial Assistance

No financial incentives are currently available; however, preliminary consultation may be used as a preventative measure to assess the nature and extent of contamination, and the appropriate amount of remedial action required to return the site to productive use.

Oversight Procedures

At the request of an interested party, Ecology performs site assessments and issues a report of findings.

Public Notice

Not required.

Memorandum of Agreement with U.S. EPA No.

Fees

An initial deposit of \$500 is required. If the deposit is not exhausted, participants will be reimbursed the balance; if the deposit is exceeded, participants are billed by the hour for services rendered.

Prepayment Oversight Agreement

At sites where contamination issues are likely to be complicated by a variety of factors, participants may request Ecology oversight at the earliest stages of site assessment. Parties enter into formal oversight agreements on a site-specific basis with Ecology in the form of agreed orders or consent decrees, which are discussed below.

Eligibility

Sites

All sites are generally eligible for participation.

Parties

All parties are generally eligible for participation.

Incentives for Participation

Liability Assurances

An agreed order establishes the nature of site remediation and the roles of both the participant and Ecology in the cleanup process. These agreements do not provide liability assurances from state regulations or third party claims.

A consent decree is typically reserved for extremely complex sights or for the final stages of a remediation project. The decree outlines the explicit roles of the voluntary party and Ecology and must be approved by the state Office of the Attorney General. The decree is then filed with a court and may provide a Covenant Not to Sue from state regulations and third-party claims with various limitations and reopeners.

Both agreements are legally binding contracts and may be enforced by Ecology with legal action.

Financial Assistance

No direct financial incentives are currently available; however, both agreements allow parties to pursue the recovery of project costs from responsible parties. In addition, on a site-specific basis, participants may receive public funding from the Toxics Control Account in the form of a loan or a monetary or technical assistance contribution. Such an agreement will be noted in a consent decree and must be deemed to expedite

the cleanup process or circumvent a preventative economic hardship. These funding measures are left solely to the discretion of Ecology and are not subject to a review process.

Oversight Procedures

At the request of participants, Ecology oversight may be requested for site remediation. Prior to the inception of either an agreed order or a consent decree, the roles of the participants and Ecology are defined on a site-specific basis. In both cases, participants relinquish oversight responsibilities to Ecology to ensure that site remediation is conducted in strict accordance with state regulations, but are beholden to fulfill contractual requirements under penalty of law. In addition, the liability assurances provided in consent decrees contain site-specific limitations and reopeners and may be rescinded at the discretion of Ecology.

Public Notice

Participants engaging in either prepayment oversight agreement are required to provide opportunity for a formal public review and comment process.

Memorandum of Agreement with U.S. EPA No.

Fees

An initial deposit of 25 percent of the estimated costs of preparing the agreement is required. If the deposit is not exhausted, participants will be reimbursed; if the deposit is exceeded, participants are billed on a quarterly basis for services rendered.

Independent Remedial Action Program

Participants may pursue an IRAP approach to site remediation in cases where cleanup projects are relatively uncomplicated. Participants are required to notify Ecology of certain contaminant issues and provide notification of completion, but are otherwise able to conduct remediation activities under self-supervision.

Eligibility

Sites

All sites are generally eligible to participate except sites under RCRA and CERCLA jurisdiction.

Parties

All parties are generally eligible to participate; however, PRPs may be excluded at the discretion of Ecology.

Incentives for Participation

Liability Assurances

After successfully remediating a site, Ecology will issue a No Further Action Letter to participants; however the NFA letter does not contain a Covenant Not to Sue and states that Ecology does not intend to require further site remediation at the time of issuance.

Financial Assistance

Remedial action grants are available to local governments undertaking redevelopment projects. Ecology will provide a 50 percent match in funding for all activities related to site assessments, development of RAPs, pilot studies, and operating costs incurred in the first year of the remediation project.

Grants of up to \$500,000 are available to fund the closure of municipal solid waste landfills.

On a site-specific basis, developers of contaminated sites in disadvantaged communities may qualify for tax credits or other incentives under economic development programs.

Oversight Procedures

No preliminary notification is required to undergo an IRAP cleanup; instead, participants submit a final notification and summary report of the completed project and request an NFA letter. After reviewing the report, Ecology will notify the applicant whether or not further remediation is required at the site based on established risk-based environmental standards. Ecology reserves the right to reopen investigation of the site if they adopt stricter environmental standards or under circumstances of fraudulent conduct, discovery of

contaminants not discovered during the initial site investigation, or remediation failures.

Public Notice

IRAP projects are published in an Ecology register on the basis of completion reports received and NFA letters issued.

Memorandum of Agreement with U.S. EPA No.

Fees

A \$1,000 fee is required or 2 percent of the total cleanup costs, whichever is greater, with a maximum of \$15,000. A nonrefundable \$1,000 filing fee must be paid at the outset, which is counted toward the total fee paid after the state approves the cleanup.

Prospective Purchaser Agreements

A Prospective Purchaser Agreement (PPA) allows parties with ownership interest in a contaminated site to purchase the property, determine cleanup responsibilities, and redevelop or reuse the property. These agreements are useful for persons considering the purchase of a facility who wish to establish the extent of cleanup needs and resolve liability concerns prior to completing the property transaction.

Eligibility

Sites

All sites are generally eligible to participate except sites that are already involved in remediation activities under an agreed order or a consent decree with Ecology. In addition, the proposed redevelopment or reuse must not be likely to exacerbate the existing contamination, increase health risks at or near the site, or interfere with the cleanup actions at the site.

Parties

Party eligibility is restricted to non-responsible parties who propose to purchase and redevelop or reuse a property. Furthermore, parties must demonstrate that the PPA will expedite the cleanup process and result in a benefit to the

public through economic redevelopment, as well as demonstrate the ability to fund the remediation and redevelopment process.

Incentives for Participation

Liability Assurances

The PPA agreement is negotiated as a consent decree similar to the aforementioned Prepayment Oversight Agreement. The decree outlines the explicit roles of the prospective party and Ecology and must be approved by the Office of the Attorney General. The decree is then filed with a court and may provide a Covenant Not to Sue from state regulations and third-party claims with various limitations and reopeners. Liability assurances are transferable to future property owners or parties with ownership interest in the property.

Financial Incentives

No financial incentives are available at this time.

Oversight Procedures

PPAs are site cleanup agreements among Ecology, the Office of the Attorney General, and a prospective purchaser. In order to negotiate a PPA, a prospective purchaser must make an initial request to participate and provide Ecology with historical, legal, and operational records pertaining to the site, owners, and operators, as well as an environmental site assessment and proposed remediation and redevelopment plans. If accepted, the prospective purchaser is required to enter a signed prepayment agreement to cover the costs of negotiation and provide further project details such as work plans and implementation schedules, as well as details relating to the prospective purchasers relative level of responsibility for site remediation activities. The details are evaluated by Ecology and the Office of the Attorney General; if accepted, negotiations for the formal consent decree are initiated.

Public Notice

PPA negotiations are published in an Ecology register from initial applications throughout the administrative process. Public review and commentary contributes to the final acceptance of the PPA by Ecology and the Office the Attorney

General and may be recorded in the consent decree. Furthermore, more extensive public notification and review may be required for projects involving more severe contamination.

Memorandum of Agreement with U.S. EPA No.

Fees

Prepayment agreements are used to negotiate a consent decree between Ecology and prospective purchasers.

See discussion of Prepayment Oversight Agreement: Fees.

Contact Information

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VCP Policy and Program Developer
Department of Ecology Headquarters
P.O. Box 47600
Olympia, WA 98504-7600

Washington State Department of Ecology

Homepage:
<http://www.ecy.wa.gov>

Information of Washington State VCP:

<http://www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm>

West Virginia

Program
Voluntary Remediation Program.

Administering Agency
West Virginia Division of Environmental Protection (DEP), Office of Environmental Remediation.

Authority
W. Va. Code section 22-22-1 *et seq.*

Date Established
1996.

Eligibility

Sites

All sites are generally eligible to participate except sites that are listed or proposed for listing on the NPL or under the jurisdiction of CERCLA, RCRA, or any other state of federal enforcement action. In addition, sites where contaminant releases occurred because of the gross negligence or willful misconduct of the applicant are excluded.

Sites may enter the VRP as designated brownfields properties if they are not excluded under VRP general requirements and are formerly industrial or commercial properties that are abandoned or not actively used as of July 1, 1996.

Parties

Eligibility is limited to those parties that are not responsible for or did not contribute to the contamination of the property.

Incentives for Participation

Liability Assurances

After successful completion of the VRP, DEP will issue participants a Certificate of Completion providing liability assurances from further state enforcement and third-party or civil claims relating to contamination stated in the agreement. A COC may also be requested in circumstances where remediation is not required and the participant has exercised due diligence in performing a site assessment. COC liability assurances are transferable and extend to site owners or opera-

tors, development authorities, lending institutions, and developers involved in the VRP process. In certain cases, however, DEP may require a land use covenant (similar to an institutional control) as part of and recorded with the COC. Any modifications to a land use covenant must be filed and recorded with the appropriate Clerk of the County Commission.

Financial Assistance

Parties remediating a brownfields property (see above site eligibility criteria) are eligible for financial incentives under a state Brownfields Revolving Fund (BRF) or other specified local or state financing measures. The BRF is intended to make loans to parties to conduct site assessments of brownfields sites, as well as other VRP costs. The BRF is financed by state and federal funds, as well as money allocated by the state legislature, to promote the redevelopment of brownfields properties.

Remediation projects involving contaminated properties, as identified in the Voluntary Remediation and Redevelopment Act (VRRA), are eligible for tax increment financing. In addition, the Voluntary Remediation Administrative Fund, which consists of fees and interest collected by DEP, is used to support cleanup implementation and may be used to pay for administrative, inspection, and other oversight costs associated with the program.

Other Incentives

To minimize application fees, two or more non-contiguous sites may be included on the same application as long as they share similar contaminant, topographic, and geologic characteristics.

If negotiations between a VRP participant and DEP cannot reach a voluntary remediation agreement (discussed below), both parties may withdraw from the program or receive an extension for negotiations to continue; however, if a participant withdraws, DEP retains the initial application fee. On the other hand, DEP cannot initiate an enforcement action during the negotiation on the voluntary remediation agreement, but an applicant may initiate remediation activities with proper notification or simply withdraw from the program.

Oversight Procedures

Applicants must submit information detailing their own financial and technical capabilities as well as a site assessment performed by a licensed remediation specialist to DEP. Applicants wishing to enter the VRP to remediate a designated brownfields property must specify this choice at the time of application as well as apply for a BRF loan. If approved, participants must then negotiate a written voluntary remediation agreement (VRA) with DEP outlining the remediation process in detail. The VRA will include all work plans, schedules, reimbursement agreements, as well as a listing of statutes and provisions that apply to the remediation project. After the VRA is reached, participants must submit work plans that have been prepared or reviewed by the licensed remediation specialist (this is typically a formality and should not hinder the process if the original plans have been accepted by DEP). Following the successful remediation of the site and review of a final report, DEP will issue a COC with or without land use covenants. Any violation of a COC agreement or land use control will result in the nullification of liability assurances. Furthermore, participants determined to knowingly violate a land use control by converting a nonresidential property to residential property is guilty of a felony and subject to a maximum penalty of \$25,000 fine or five-year term of imprisonment, or both.

Public Notice

After receiving an application for the VRP, DEP publishes a register of all such applications in a publication of regular circulation; the actual application is entered into public domain and available through the DEP, Office of Environmental Remediation. When negotiating the VRA, public review and commentary is required for projects involving sites where contamination levels exceed DEP standards for residential and industrial properties; this commentary is considered by DEP as part of the review process.

Projects designated as brownfields redevelopment are beholden to similar public notice requirements except notices of projects are published in local newspapers and a public

meeting must be held to provide increased opportunity for citizen participation and commentary.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants are required to pay a point-based application fee (based on size, years of on-site operation, and a Standard Industrial Classification) ranging from \$1,000 to \$5,000. Multiple-site applications are automatically assessed a \$5,000 fee. Participants are also required to reimburse DEP for any additional oversight costs.

Contact Information

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Brownfields and LUST Remediation Programs
1356 Hansford Street
Charleston, WV 25301

West Virginia Department of Environmental Protection Homepage:
<http://www.dep.state.wv.us/offices.html>

Wisconsin

Program

Voluntary Cleanup Program—“Voluntary Party Liability Exemption Program.”

Administering Agency

Wisconsin Department of Natural Resources (DNR).

Authority

Wis. Stat. section 292.15.

Date Established

1994.

Eligibility

Sites

All sites are generally eligible to participate.

Parties

All parties are generally eligible to participate.

Incentives for Participation

Liability Assurances

In circumstances where a site does not require remediation, DNR issues a case closure determination in the form of a No Further Action letter. To participants that are required to actively remediate sites, DNR issues a Site Investigation Assurance letter that guarantees a Certificate of Completion if the VCP is successfully executed. A COC provides liability assurances from releases under the Hazardous Substance Discharge Law. Such assurances include on-site and migratory off-site contaminants, as well as contaminants that migrated to the site from an off-site source. In addition, clauses within the COC may compensate for ground water that is not restored to be in compliance with state regulations, if DNR determines that natural processes will restore the water in an acceptable time period. Furthermore, a COC protects the holder from enforcement actions if state regulations become more stringent at a future date. DNR may also issue certificates that acknowledge partial completion if contamination is restricted to a designated area on a site and does

not pose a threat to human or environmental health; property owners are typically required to adopt land use controls to prevent the exacerbation of remaining contaminants.

Liability assurances may be extended to local governments and economic development corporations.

Financial Assistance

The Land Recycling Program (LRP) provides \$20 million in low cost loans to cities, towns, and counties for the purpose of remediating environmental contamination at landfills or sites where contamination threatens to affect groundwater or surface water. The loan terms are may be up to twenty years.

The Petroleum Environmental Cleanup Fund Act program offers reimbursement funds for cleanup costs related to petroleum product storage systems, such as commercial and agricultural above-ground storage tanks and USTs, as well as residential oil systems. Reimbursement funding is awarded according to different factors, but deductibles range from \$2,500 to \$15,000.

The Wisconsin Community Development Zone Program is administered by the Wisconsin Department of Commerce to encourage private investment in redevelopment projects in targeted communities. Within designated Development Zones or Community Development Zones, an Environmental Remediation Credit may be claimed for costs associated with site remediation; tax credits may also be offered expanding businesses built on remediated sites within such zones. The maximum credit per zone is \$3 million and is available for seven years.

The Brownfields Grant Program is administered by the Wisconsin Department of Commerce offers unlimited grants (from a \$12.2 million allocation) for brownfields redevelopment or associated environmental remediation projects where original site owners or responsible parties are unknown. Grant recipients are required to contribute funding to the project, although an exact amount is not specified.

The Wisconsin Department of Commerce also offers grants through its Blight Elimination and Brownfields Redevelopment program to compensate for costs associated with site assessment and remediation in blighted communities (except those in Milwaukee County, Waukesha County, and parts of Dane County). The maximum awards are \$100,000 for site assessment and \$500,000 for site remediation.

The Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) provides reimbursement for the investigation of agricultural chemical spills. Deductibles range from \$3,000 to \$7,500 per site and DATCP may reimburse 80 percent of remedial costs up to \$400,000 per site.

Wisconsin also eases the financial burden of remediation through its tax increment financing in districts specified by independent municipalities. Local authorities decide how to distribute funds and there are no limits placed on the amount of financing or how funds may be used; however, the maximum period for reimbursement is sixteen years.

Oversight Procedures

After DNR approves site and party eligibility, the participant must perform Phase I and II site assessments. Following these assessments, the participant must conduct a state-mandated environmental investigation of the contaminated property, subject to DNR approval. Participants then submit a detailed work plan detailing remedial action methods and designs, as well as construction and implementation plans to DNR. Once approved, the party conducts cleanup activities at the site. If remediation is successfully completed, DNR issues a COC or Certificate of Partial Completion. Both certificates may be rescinded if the original agreement was based on fraudulent information or if future releases occur on the property (unless participants can demonstrate that they are not at fault or did not know of such releases).

Public Notice

Not required.

Memorandum of Agreement with U.S. EPA
Yes.

Fees

A \$250 application fee is required. After the application has been accepted, advance deposits of \$1,000 for properties smaller than one acre and \$3,000 for properties larger than one acre will be required. The fees are used to cover DNR oversight costs. Any unused funds will be returned to the participant

Contact Information

Wisconsin Department of Natural Resources
101 S. Webster St., Box 7921
Madison, WI 53707-7921

Wisconsin Department of Natural Resources

Homepage:
<http://www.dnr.state.wi.us>

Wyoming**Program**

Voluntary Cleanup Program.

Administering Agency

Wyoming Department of Environmental Quality (DEQ).

Authority

W.S. 35-11-1601 to 35-11-1613, 35-11-1701, 35-11-1801 to 35-11-1803.

Date Established

2000, not codified.

Eligibility**Sites**

All sites are generally eligible to participate except sites that are listed on the NPL; sites that: handle, treat, store, dispose or incinerate above-ground storage tanks or USTs, commercial waste, or radioactive waste, or include abandoned mines (all regulated under DEQ enforcement); sites have been polluted through repeated violations of established VCP legislation; and sites under state enforcement action or sites that has previously entered and violated any requirement of the VCP.

Parties

All parties are generally eligible to participate.

Incentives for Participation**Liability Assurances**

DEQ issues Certificates of Completion after designated remedial requirements have been met. Participants may then request a Covenant Not to Sue from DEQ to protect parties from further legal responsibility for contamination stated in remedial agreements and may issued on conditions for obligatory compliance, prior to the actual completion of remedial actions.

A No Further Action letter may be issued when cleanup efforts have met designated remedy agreements or if DEQ determines that natural attenuation will satisfy remedial requirements. All aforementioned documents are transferable to

future site owners and operators or parties with ownership interests.

The Wyoming VCP also establishes an Innocent Owner exemption from liabilities for site owners (of eligible sites), including lending institutions and municipalities, determined to not be responsible for or contribute to site contamination. The exemption protects an innocent owner from enforcement action and any other costs and protocols that would be required in a voluntary or involuntary cleanup. DEQ requires site owners to grant access to the site for investigation purposes as well as future compliance with land use restrictions deemed necessary after or in lieu of remediation. Site owners will be excluded from exemptions for failing to comply with such regulations or by entering a property transaction with the intention of avoiding potential liabilities.

Financial Assistance

The Real Property Remediation Account finances the remediation of orphaned sites. The account is funded by parties that release toxic insults as determined by EPA biennial inventory performed under the Community Right-to-Know Act. Polluters are assessed a fee of two cents per pound of toxic substance released as long as fees do not exceed \$50,000 (2.5 million pounds of toxic substance) for a single facility per year.

Oversight Procedures

Interested parties must submit applications to DEQ and develop a tailored public participation plan to announce prospective remediation and redevelopment efforts. Sites with little or no public interest are expedited quickly, while those with significant public concern are systematically evaluated to provide greater opportunities for stakeholder involvement. Interested parties then collaborate with DEQ staff and develop a Use Control Area agreement to determine projected scope, schedule, cost, and required cleanup standards for the remediation project on a site-specific basis. After the agreement is established, parties negotiate a more detailed plan specifying appropriate remediation standards and remedies, land use controls, and an implementation schedule in a remedy agreement. The remedy agreement

is a binding and permanent contract, unless reopened or terminated by DEQ. DEQ may reopen or terminate an established remedy agreement if participants act negligently, fail to take action in a designated time frame, fail to complete their obligations, or fail to comply with established remedy agreements; if new contamination is discovered; or if agreements were reached on the basis of fraudulent information.

Public Notice

Participants are required to notify all contiguous landowners and make public notice in a local newspaper after being accepted into the VCP or when negotiating a modification to a remedy agreement. The notice must identify the site, summarize the proposed project or modification, describe all associated state and federal regulations, and invite public commentary. If petitioned by a significant number of community members (at the discretion of the Director of DEQ) a public participation plan may be implemented to incorporate public commentary into the oversight process.

Memorandum of Agreement with U.S. EPA No.

Fees

Participants are responsible for reimbursing all oversight costs incurred by DEQ.

Contact Information

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Solid and Hazardous Waste Division
Herschler Building
122 West 25th Street
Cheyenne, WY 82002

Wyoming Department of Environmental Quality

Homepage:
<http://deq.state.wy.us/>

Information on the Wyoming VCP:
<http://deq.state.wy.us/shwd/brownfield/brownfield.htm>

BROWNFIELDS REMEDIATION TECHNOLOGIES

Brownfields remediation has traditionally been restricted to labor-intensive land disposal processes. Such treatments extract contaminated soils or hazardous waste debris, move the materials off-site, and then bury and cap wastes in an impermeable landfill facility. However, this methodology succeeds only in removing contaminated materials from one area and storing them in another, sidestepping any actual treatment to lessen the toxicity of wastes. In a sense, hazardous materials are moved from one brownfields site to another. In addition, because of unanticipated natural processes, including flooding and earthquakes, the long-term impermeability of landfills can be threatened, leading to the pollution of properties surrounding hazardous waste landfills as well as to the propagation of a cycle of contamination revolving around a single lode of hazardous waste.

With the enactment of the Comprehensive Environmental Restoration, Compensation, and Liability Act of 1980 (CERCLA or Superfund) came new perceptions of hazardous waste treatment. Instead of land disposal, emphases shifted toward permanent treatment alternatives for hazardous waste and remediation of contaminated properties. Those treatment methods are intended to destroy hazardous materials or render them less harmful to human health and surrounding land media. Basic treatment alternatives reduce the amount of contaminants present, remove

specific contaminants from the environment, or collect and isolate hazardous materials in a concentrated area on a property. Certainly, these treatments echo the principles of land disposal and, therefore, are usually applied to prepare for more extensive treatment processes.

Established versus Innovative Technologies

Current treatment methods rely on the application of chemical, biological, and physical processes resulting in permanently decreased levels of toxicity among hazardous materials and contaminated properties. These established technologies have been tested and approved by the scientific community and are operating at a full-scale status. In this case, the term “full-scale” indicates that a treatment method is operating at a variety of brownfields sites and is used when applicable and cost-efficient. Common established technologies include incineration as well as solidification and stabilization techniques. However, because of constant efforts to increase the efficiency of brownfields remediation, new innovative technologies continue to be researched and developed. “Innovative technologies” are treatment processes that are undergoing economic research and scientific testing; therefore, information on cost-benefit analysis and long-term effectiveness of such technologies is lacking. Even so, the demand for increasingly effective and affordable innovative technologies continues to rise as the benefits of brownfields reuse programs are being recognized and implemented.

Before attaining the designation of an established remediation technique, innovative technologies must undergo a “treatability study”—an extensive period of research, development, and multiple levels of scientific testing. This process is often costly—at any or during all stages of development—and may take several years to complete. Although many technologies are reactive to specific cases of contamination and modeled after existing industrial processes, remediation techniques must demonstrate practicality, efficiency, and reproducibility of results before being deemed acceptable. Composed of three fundamental

phases, treatability studies govern a technique through concept, emergence, and innovation phases while under development.

The Concept Phase

The concept phase refers to initial research and analysis of a remediation technology. Often the concept phase is a period of brainstorming. In that phase, the specific aims of a technology are identified as well as ideal approaches to reducing or eradicating a hazardous compound. At this point, extensive background research is performed to establish preliminary estimates of costs, time frames, and theoretical effects of a technology. In addition, a laboratory screening is performed to determine the physical and chemical characteristics of the targeted waste in a controlled environment. A laboratory screening may last several days and cost between \$10,000 and \$50,000; however, it may need to be performed several times depending on the quality and consistency of initial results. Satisfactory results—those indicating a relationship between the characteristics of the hazardous compound and the proposed treatment technology—allow the development process to continue to more advanced stages.

The Emergent Phase

Following the concept phase, a treatment technology is considered to be emerging and is tested in more complex scenarios. During this phase, bench-scale studies are performed to simulate treatment on a proportionately smaller amount of hazardous waste in a controlled environment. This step is intended to test the mettle of the theory in development, determine the overall feasibility of a process, and suggest any enhancements to be made in the ongoing testing process. As in the case of laboratory screening, results must be consistent in bench-scale studies as a technology is refined; therefore, multiple trials and revisions are required throughout the development process. Not surprisingly, a treatment technology may be considered to be emerging for several years, while testing costs range between \$50,000 and \$250,000. Once suitably refined through bench-scale testing, a technology enters the final stage of a treatability study—the innovative phase.

The Innovative Phase

Once in the innovative phase, a technology is applied in a contaminated field environment. This pilot-scale study remains limited to a small sample area of a contaminated property but allows researchers to monitor the effectiveness of a technology in an actual, functioning ecosystem. This phase allows observers to study the technology under physical, chemical, biological, geological, and hydrological cycles and to note subsequent, unanticipated reactions. In addition, pilot-scale studies require construction and installation of a treatment technology providing detailed information related to finalized cost analyses. As this phase is the most sophisticated level of a treatability study, results may take years to compile—because of complex interactions within an operating ecosystem—and typically cost over \$250,000. Nonetheless, an innovative technology is in the final stages of development and is often being fine-tuned before becoming an established treatment technology. More important, EPA estimates that, as of 1994, nearly 60 percent of brownfields remediation technologies in use were considered to be in innovative phases.¹

With a range of established and innovative technologies at hand, successful treatment of hazardous wastes and contaminated brownfields relies on selecting the appropriate method for the site in question. This process is largely determined by site-specific needs as well as factors related to the surrounding community: jurisdictional issues; availability of funds; presence of existing, secondary treatment facilities; cooperation among all stakeholders; and acceptance by affected segments of the public in the vicinity of the brownfields site. Moreover, because of changing ecological, social, and governmental conditions, the prudence of an innovative technology is subject to revision or termination. With this process in mind, understanding the complete range of innovative remediation technologies as well as the specific, respective characteristics of each technique is essential.

In Situ Remediation Technologies and Enhancements

In situ remediation technologies are used at the site of the contamination. The technologies are implanted or injected into the contaminated media where they work to neutralize hazardous substances. In some cases, contaminants are broken down by chemical or biological processes into less harmful substances. Other methods trap or contain the contaminants to prevent their migration through groundwater or soil to areas where they may pose significant human health risks.

Technology enhancements are used to increase the effectiveness or efficiency of in situ remediation technologies. One or more enhancements may be used with remediation technologies to form what is called a “treatment train.” Many innovative remediation procedures use such treatment trains to achieve cleanup goals.

Enhanced Bioremediation

Method

“Bioremediation” describes a number of processes performed by live organisms that decompose, immobilize, or in any other manner alter the state of a contaminant, thus rendering it less hazardous to its surroundings. “Biodegradation” is a process that occurs naturally without human intervention in soils and groundwater whereby compounds are broken down. “Enhanced bioremediation” involves the stimulation of existing bioremediation or the introduction of new biological tools to complement the natural process of biodegradation. Most often, nutrients or oxygen are circulated in aqueous solutions through contaminated soil and groundwater.

Contaminants Targeted

Petroleum hydrocarbons, solvents, pesticides, wood preservatives, and other organic chemicals. More innovative forms degrade nitrotoluenes and stabilize metals and other inorganics.

Media

Soil, sludge, and groundwater.

Time Frame

Often takes years, but times vary from site to site and depending on specific uses and combinations of enhancements.

Price Range

\$30 to \$100 per cubic meter (\$20 to \$80 per cubic yard).

Operational Level

Full-scale applications exist, but new and varied methods are still being developed.

Advantages

Often the least expensive of cleanup options. Introduces few, if any, foreign materials that may alter the existing natural environment tainted by contaminated media. Does not leave residual materials that require treatment.

Limitations

Often takes long periods of time. Enhancements reduce cleanup duration but not when compared to other more expensive cleanup options.

Phytoremediation

Method

Plants are grown in contaminated media and stimulate biodegradation by releasing nutrients, degrading contaminants with their own enzymes, absorbing contaminants, or stabilizing contaminants through chemicals released from their roots.

Contaminants Targeted

Metals, pesticides, solvents, explosives, crude oil, polynuclear aromatic hydrocarbons, and landfill leachates.

Media

Soil, sludge, and sediment.

Time Frame

Over three years.

Price Range

\$60,000 to \$100,000 (estimated) for one acre of lead-contaminated soil to a depth of 50 centimeters (less than \$110 per metric ton).

Operational Level

Pilot/bench-scale.

Advantages

Saves money on digging and hauling of soils. Requires little disturbance of the media, aside from tilling the topsoil. Aesthetically pleasing alternative, as vegetation is usually a more pleasant addition to a neighborhood than the heavy machinery that other methods may demand.

Limitations

Often a lengthy process. Depth of treatment is limited by the root system complexity of plants used, which often means only a shallow volume of soil may be treated. Some contaminants may be toxic to some plants. Although phytoremediation leaves no material residues, contaminants absorbed by plants need to be recycled or safely destroyed prior to plant removal and disposal.

Chemical Oxidation

Method

Oxidizing agents are injected as an aqueous solution into a contaminated medium through an injection well. Oxidants circulate and undergo oxidation/reduction reactions with specific contaminants involving the exchange of electrons. Reactions yield nonhazardous materials, stabilized materials, or both after which the oxidizing solution is extracted through an extraction well.

Contaminants Targeted

Volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and inorganics.

Media

Groundwater, surface water, leachate, soil, sediment, and sludge.

Time Frame

Less than a year.

Price Range

\$190 to \$660 per cubic meter (\$110 to \$330 per metric ton).

Operational Level

Full-scale.

Advantages

Very expedient in comparison with several other remediation techniques. No soil needs to be dug up or transported. Remediation takes place in situ, minimizing secondary procedures and costs. Injected oxidants increase oxygen levels among media, thus accelerating bioremediation.

Limitations

Incomplete oxidation may form new contaminants. Oxidation solution must be completely extracted and contained to prevent spreading of contaminants or leaving oxidation chemicals in soil.

Electrical Resistance Vitrification

Method

Contaminated media is superheated through electrical resistance to temperatures of approximately 3,000°F (1,600°C) and melted, whereby organic contaminants are usually destroyed while metals and radionuclides may be stabilized.

Contaminants Targeted

Pesticides, metals, VOCs, SVOCs, halogenated SVOCs, dioxin, and other organic contaminants. Radionuclides and metals are contained.

Media

Soil, sludge, and sediment.

Time Frame

One to three years.

Price Range

\$200 to \$300 per cubic yard.

Operational Level

Full-scale, but innovative.

Advantages

In situ process saves on soil transport costs. Vitrification destroys a wide variety of contaminants. Most common contaminants that are not

destroyed (heavy metals and radionuclides) are stabilized.

Limitations

Off-gas from VOCs must be collected and treated. Although the procedure may be conducted in situ, the media will be notably altered and disturbed.

Permeable Reactive Barriers

Method

“Permeable reactive barriers” (PRBs) are walls set up in the path of a groundwater plume. The walls let water pass through while physically containing contaminants. In addition, some materials are decontaminated through chemical reaction or biodegradation from additives in wall matrices. Depending on the targeted contaminants and site conditions, some walls may exist permanently, in contrast to others where reactive agents may need replacing or collected contaminants may need to be removed.

Contaminants Targeted

VOCs, SVOCs, and inorganics.

Medium

Groundwater.

Time Frame

Generally intended for long-term operation to control migration of contaminants (over ten years).

Price Range

\$600 to \$1500 per square foot of barrier surface area.

Operational level

Full-scale.

Advantages

PRBs are not operation and maintenance intensive. Once installed, the barrier operates simply by disrupting contaminant migration; therefore, no treatment train is required. Money is saved by not extracting the groundwater for treatment. PRBs can control and treat materials typically left as residue by extraction methods.

Limitations

Treatment agents may deteriorate over time and need replacing. The barrier may interrupt the natural flow of groundwater. The walls may be large and require costly volumes of treatment material.

Innovative Extraction Technologies and Enhancements

Many cleanup technologies are designed to extract harmful contaminants from their given media. In contrast to traditional pump and treat methods for groundwater and dig and haul methods for solid media, innovative extraction technologies target specific contaminants. In these methods, contaminants are removed with fewer disturbances to the media. Most important, extensive hauling and transport costs are minimized. However, unlike in situ remediation technologies, extracted contaminants must still be treated, recycled, or properly disposed of off-site.

Extraction enhancements, similar to in situ remediation enhancements, increase efficiency and effectiveness of extraction techniques. In fact, many of the enhancement procedures for extraction use bioremediation or chemical reactions to partially remediate contaminants while extracting residual contaminants.

Soil Vapor Extraction

Method

Extraction wells are inserted into the unsaturated zone of soil above the local water table. A vacuum mechanism is used to extract gas phase contaminants.

Contaminants Targeted

VOCs and some fuels.

Media

Soil, sediment, and sludge.

Time Frame

Three to ten years.

Price Range

\$10 to \$50 per cubic meter (\$10 to \$40 per cubic yard).

Operational Level

Full-scale.

Advantages

Soil vapor extraction is one of the least-expensive remediation technologies. It can be performed in situ, thus eliminating removal costs. SVE is widely available and tested innovative technology.

Limitations

Operation depth is limited by the water table. Extracted vapors require additional treatment. Liquid residues accumulate that may also need treatment.

Multiphase Extraction

Method

A vacuum pump is applied to an extraction well oriented partially below the water table, yet extending into the unsaturated zone. Both vapor and water are simultaneously removed for treatment as vapors are extracted in the unsaturated zone (as in SVE), while, below the water table, groundwater is extracted at an increased rate because of the vacuum.

Contaminants Targeted

VOCs and fuels.

Media

Groundwater, low-permeability clays, and sediments.

Time Frame

Three to ten years.

Price Range

\$2,500 to \$4,000 per month for a dual pumping system; \$85,000 to \$500,000 per site (\$0.79 to \$2.64 per 1,000 liters).

Operational level

Full-scale.

Advantages

Water table lowers around the well forming a conical zone of depression, allowing vapor to be extracted from soils at greater depths than with SVE. Soil and groundwater are both extracted with one process.

Limitations

Liquids and vapors extracted require treatment. Complications may occur in some high-permeability soils.

Bioslurping

Method

Bioslurping is a multiphase extraction technique that integrates a bioremediation enhancement called “bioventing” (circulating air in the soil to stimulate biodegradation). In bioslurping, a single extraction tube is situated with an opening at or just above the surface of the water table. Bioslurping extracts water and vapor, like all multiphase extractions, but is usually chosen for its ability to extract light, nonaqueous phase liquids (LNAPLs) from the surface of the water table.

Contaminants Targeted

Petroleum hydrocarbons, LNAPLs, and SVOCs.

Media

Groundwater and high-permeability soils.

Time Frame

A few months to many years, depending on specific site conditions (three to ten years in matrix).

Price Range

A full-scale bioslurping system costs approximately \$125,000 (less than \$0.79 per 1,000 liters).

Operational Level

Full-scale.

Advantages

Attacks many contaminant types from several different angles, including accelerated bioremediation with extraction resulting in partial in situ treatment. Targets LNAPLs that evade conven-

tional groundwater extraction techniques. As a multiphase extraction technology, it extracts contaminants from soil and groundwater.

Limitations

Water, air, and LNAPLs are extracted collectively and may require separation prior to treatment. Bioslurping is less effective in low permeability soils and dry soils.

Soil Flushing

Method

Water or an aqueous solution is injected into the soil to rinse away contaminants into the underlying water table. The groundwater is then extracted for treatment. Many soil-flushing solutions include cosolvents or surfactants to aid solubility of contaminants in the water.

Contaminants Targeted

Inorganics including radioactive contaminants.

Media

Soil, sediments, and sludge.

Time Frame

More than three years.

Price Range

\$25 to \$250 per cubic yard depending on additive surfactants used (more than \$330 per metric ton).

Operational Level

Full-scale.

Advantages

Soil does not have to be dug up and hauled away. Soil flushing can mobilize a wide variety of organics and inorganics including metals.

Limitations

Some surfactants react with soil to reduce mobility of contaminants. Chemical solutions must be contained and extracted completely, as their residual effects on the soil may pose a threat. Containment is also important to reduce spread of existing contaminants to less-contaminated regions of the soil. Liquid extract must be treated.

Air Sparging

Method

Air is injected into groundwater to stimulate the release of volatile contaminants in the water table. Gaseous contaminants ascend into unsaturated soil and are extracted by SVE. Air sparging also serves as an enhancement for bioremediation by the oxygen added through air circulation.

Contaminants Targeted

VOCs and fuels.

Media

Groundwater, surface water, and leachate.

Time Frame

Less than three years.

Price Range

\$371,000 to \$865,000 per hectare (\$150,000 to \$350,000 per acre) of groundwater plume to be treated.

Operational Level

Full-scale.

Advantages

Enables soil vapor extraction to effectively treat groundwater as well as soil. Accelerates bioremediation, thus aiding cleanup of nonvolatile contaminants. Avoids expensive operation and maintenance of intensive pumping of groundwater.

Limitations

Air flow may not be uniform, leaving potential for uncontrolled harmful gases. Differences in soil type and permeability may leave some regions unaffected.

Electromigration

Method

Two ceramic electrodes are inserted into the soil with opposite polar configurations. All charged species will move toward the electrodes. Water

will also travel to the electrodes transporting additional uncharged contaminants. Electromigration is often used as an enhancement for separation and extraction methods. It may also be used in conjunction with filters or treatment barriers as an in situ remediation method.

Contaminants Targeted

Heavy metals, anions, and polar organics.

Media

Low-permeability soils, clays, and groundwater.

Time Frame

One to three years.

Price Range

\$15 to \$50 per cubic meter (\$110 to \$330 per metric ton).

Advantages

Extraction can be made cheaper and more efficient. Initial separation may bypass a step for projects with multiple contaminants that normally require additional treatment. Effective on soil and groundwater contaminants.

Limitations

Wastes must have a moisture level of at least 10 percent. Buried charged materials such as metal ores may interrupt the magnetic field.

Operational Level

Pilot-scale/innovative.

Surfactants/Cosolvents

Method

“Surfactants” or “cosolvents” are chemical additives used in an in situ soil flushing process. They react with contaminants such as nonaqueous phase liquids (NAPLs) either to aid the transport of the contaminant for quicker and easier extraction or to restrict the transport of the contaminant as a form of containment.

Contaminants Targeted

NAPLs, VOCs, and inorganics.

Media

Groundwater, soil, and sediments.

Time Frame

Three years or more (can significantly reduce cleanup time for a typical soil flushing with NAPLs, which could take ten years or more).

Price Range

\$40 to \$100 per square foot.

Operational Level

Full-scale.

Advantages/Limitations

See Soil Flushing.

Thermal Desorption

Method

Soil is heated to volatilize, not destroy organics and water. Gas phase contaminants are collected through either soil vapor extraction or another off-gas collection method. Contaminants must then be treated or recycled.

Contaminants Targeted

Most organic contaminants and volatile metals.

Media

Soil, sludge, and groundwater.

Time Frame

Several months.

Price Range

\$120 to \$200 per cubic yard.

Operational Level

Full-scale.

Advantages

Expedites soil vapor extraction and other cleanup processes requiring organic off-gas collection. Can be performed in situ.

Limitations

Clay and silty soils will experience slower volatilization because of tighter bonds on contaminants. Contaminants must still be treated after collection.

Fracturing

Method

Cracks and fractures are formed in low-permeability soils and sediments in order to increase the effectiveness of in situ remediation technologies. Fractures may be drilled or created with explosives.

Contaminants Targeted

All sediment contaminant types.

Media

Low-permeability and over-consolidated sediments: silts, clays, shale, and bedrock.

Time Frame

One to three years.

Price Range

\$110 to \$330 per metric ton.

Operational Level

Full-scale.

Advantages

Remediation technologies that are otherwise ineffective in dense, low-permeability media can be used. Useful for in situ techniques in many mediums where treatment materials need to be injected into the contaminated media. Controlled pathways can be formed for contaminated materials and treatment additives to reduce the risk of uncontrolled disbursement.

Limitations

Media is gravely disturbed. Investigation must be made for seismic activity, possible release of trapped contaminants, and other ways that fracturing may impair or harm the medium or its environment.

Off-Gas Remediation Techniques

Many remediation and extraction techniques release gases that could pose health hazards. These “off-gasses,” therefore, must be collected and treated before being released into the atmosphere. The following technologies are used to decontaminate or recycle harmful substances found in remediation off-gas. Off-gas treatment procedures are short-term processes used as follow-up treatments to many of the aforementioned technologies.

Vapor Phase Carbon Adsorption

Method

Off-gas is passed through beds or sheets of carbon grains. This carbon is “activated” by increasing its internal surface area, which enables it to attract and adsorb other molecules.

Contaminants Targeted

VOCs, SVOCs, fuels, and explosives.

Medium

Off-gases.

Time Frame

Not applicable.

Price Range

Less than \$110 per metric ton.

Operational Level

Full-scale.

Advantages

Organics, as well as certain metals and inorganics can all be separated for destruction or recycling.

Limitations

Carbon must be replaced or regenerated after being spent, increasing maintenance costs. Contaminants are captured versus destroyed. Solid residuals produced.

Biofiltration

Method

Vapor-phase contaminants are passed through a soil bed containing naturally occurring or added microorganisms and fungi. Organisms in

the soil bed destroy contaminants through bioremediation.

Contaminants Targeted

VOCs and fuels.

Medium

Off-gases.

Time Frame

Not applicable.

Price Range

Less than \$110 per metric ton.

Advantages

Contaminants are destroyed rather than separated, as in other off-gas treatments. The filtration system requires minimal operation and maintenance costs.

Limitations

Only organic vapors are effectively treated. Low temperatures may slow down degradation.

Operational Level

Full-scale.

High Energy Corona

Method

Contaminants are collected in glass tubing where the voltage is applied, thereby destroying the contaminants.

Contaminants Targeted

VOCs, SVOCs, and fuels.

Medium

Off-gases.

Time Frame

Not applicable.

Price Range

Between \$110 and \$330 per metric ton.

Operational level

Pilot-scale.

Advantages

The contaminants are completely destroyed without generating residues. Operation and

maintenance demands are low once the system is assembled.

Limitations

The system needed to carry out the process is costly and intricate. The technology is still being developed and has not been proven for full-scale operation.

Table V-1: Brownfields Remediation Technologies lists types of brownfields, contaminants that they

may contain, and some possible technology solutions. This list is not comprehensive, however, and contaminants and appropriate technologies should be determined on a site-by-site basis, and with the help of a qualified professional.

¹ U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response (5102G). *A Citizen's Guide to Innovative Treatment Technologies: For Contaminated Soils, Sludges, Sediments, and Debris*. EPA 542-F-96-001. Washington, D.C. April 1996. Page 2.

Table V-1: Brownfields Remediation Technologies		
Type of Site	Common Contaminants	Technology Applications
Agriculture	Volatile organic compounds (VOCs), pesticides, halogenated VOCs, metals	Bioremediation, soil vapor extraction (SVE), soil flushing
Dry cleaning	Halogenated VOCs, solvents	SVE, chemical oxidation, air sparging
Automotive repair	VOCs, semivolatile organic compounds (SVOCs), metals	Bioremediation, SVE, air sparging
Metal finishing	VOCs, metals, acids	Chemical oxidation, SVE, air sparging, soil flushing, permeable reactive barriers (PRBs), bioremediation
Iron and steel mill sites	Metals, acids, ammonia, SVOCs, VOCs	Chemical oxidation, SVE, air sparging, thermal desorption, PRBs, bioremediation
Wood pulp and paper manufacturing	Dioxin, halogenated VOCs, acids	Chemical oxidation, SVE, air sparging, electrical resistance vitrification, thermal desorption
Wood preserving	Light nonaqueous phase liquids (LNAPLs), metals, dioxin, halogenated SVOCs	Soil flushing, bioslurping, electrical resistance vitrification, chemical oxidation, PRBs
Semiconductor manufacturing	Metals, VOCs, halogenated VOCs, solvents	Bioremediation, SVE, phytoremediation, soil flushing, multiphase extraction (MPE), electrical resistance vitrification
Research and educational institutions	Inorganic acids, solvents, metals, pesticides	Soil flushing, chemical oxidation, PRBs, electromigration, electrical resistance vitrification
Railroad yards	Petrochemicals, VOCs, solvents	Soil flushing, bioslurping, bioremediation, chemical oxidation.
Paint/ink manufacturers	Metals, VOCs, solvents, halogenated VOCs	SVE, MPE, phytoremediation, electrical resistance vitrification, electromigration, thermal desorption, soil flushing
Hospitals	Radionuclides, VOCs, solvents, metals	Electrical resistance vitrification, MPE, electromigration, PRBs
Landfills	Metals, VOCs, halogenated SVOCs, solvents, pesticides	Electrical resistance vitrification, bioremediation, soil flushing, electromigration
Electroplating operations	Metals	Soil flushing, chemical oxidation, PRBs, electromigration, phytoremediation
Glass manufacturing	Metals, inorganics	Soil flushing, chemical oxidation, PRBs, electromigration, phytoremediation
Gas station or petroleum refining	Fuels, nonaqueous phase liquids (NAPLs), petroleum hydrocarbons	Bioslurping, thermal desorption, bioremediation, MPE

BROWNFIELDS CONSULTANTS GUIDE

Hiring an Environmental Consultant for Brownfields Redevelopment

Brownfields projects often demand expertise that staff from local governments may not have. Environmental consultants can fill this need for expertise, but consultants vary a great deal in the quality of service they provide. Although choosing environmental consultants is not an exact science, the following criteria—provided by the law firm of Chapman and Cutler as part of Chicago’s Brownfields Forum—provide a useful framework for evaluating prospects.

Although projects vary, the important attributes for an environmental consultant working on a typical brownfields development project are common:

- **Timeliness:** The consultant must commit to finish the work by an established deadline;
- **Competency:** The work must be executed correctly;
- **Experience:** The consultant must have worked on similar projects;
- **Economy:** Estimated costs must be competitive;
- **Counsel:** The consultant must be able to give sound advice regarding research, findings, and conclusions;
- **Security:** The consultant must have sufficient assets or insurance to compensate for potential liability issues;
- **Resources:** Consultants that have the sophisticated, internal resources, such as laboratories, drill rigs, and investigative equipment, are likely to have less trouble scheduling and completing work on time;
- **Capability:** Consultants licensed and equipped to perform remediation operations may save time and project costs if initial investigations uncover contamination; and
- **Contract:** Some consultants are more willing to assume some project risks by contract.
- **Management:** Some consultants take direction better than others. Said differently, some consultants are difficult to manage.

Most important, the right consultant (not necessarily the “best” consultant) meets the often complicated needs of specific brownfields projects.

Timeliness

Consultants should prepare a project schedule that meets the deadline and shows how they expect to accomplish the work on time. Subcontracted work should be identified, but remember, subcontractors are not within the direct control of the consultant and can cause delays. Complicated project schedules should be divided into specific tasks with milestones to be used in managing the project.

Watch out for tasks that depend on external factors, like government permits or approvals, information request responses, property access arrangements, and laboratory turnaround time. Weather can affect on-site work, particularly heavy machinery work. If inclement or unpredictable weather is likely, ask for a contingency plan. If weather delays heavy machinery work, equipment should be available as soon as the work can start. Finally, references will usually reveal if a consultant completed similar projects on time.

Competency

The consultant must execute the work correctly. Without having worked with a consultant, one often has difficulty evaluating a proposal for competency. However, three factors are useful in evaluating competency: the proposal, the proposed staff, and the references.

First, the consultant should submit proposals and materials that have been prepared competently. The proposed work should satisfy the needs of the project, the right individuals should be included, and the appropriate final product should be suggested. In short, the project proposal and work product should demonstrate that the consultant understands the project. In addition, the work product should be well written and understandable.

Second, the staff members who would do the work should have the right training and experience. Depending on the project, different technical disciplines and backgrounds are useful. Individuals with field experience with or vocational training for the various operations that will be

performed at the site—although some additional training may be required because of the innovative and multifaceted nature of brownfields remediation—are instrumental to the cleanup process (e.g., a former automotive parts plant engineer for metal bending facility). Some examples include the following staff members:

- Professional engineers, including licensed mechanical, civil, or chemical engineers;
- Environmental engineers or scientists;
- Professional geologists licensed and educated in the complex processes operating within the Earth and upon its surface;
- Hydrologists trained in the properties, occurrence, distribution, and circulation of surface, subsurface, and atmospheric water resources;
- Hydrogeologists trained in the interrelationships of geologic materials and structures and water;
- Geophysicists and geochemists trained in the highly specific physical and chemical properties of the Earth;
- Analytical chemists trained in the physical and chemical properties of potentially encountered contaminants;
- Public and occupational health professionals;
- Medical professionals, including toxicologists and epidemiologists; and
- Laborers certified with a minimum of forty hours of Occupational Safety and Health Act training and participation in a medical monitoring program.

Finally, the consultant should have enjoyed success at similar projects. Consultant references will usually say whether other projects were done correctly and finished on schedule.

Experience

Ideally, the consultant should have worked on similar projects. The similarity of projects depends on several factors.

First, the role of the client and the purpose of the project should be similar. A consultant reporting every blemish rooted out for a buyer phrases the report differently than a consultant performing a self-audit for a manufacturer. A consultant often

acts as an advocate for the client, whether a seller, lender, or regulatory agency. The consultant needs to understand the client's needs and the purpose of the project. Acceptance of the consultant by other clients is also an important factor.

Second, the type of site should be similar. The nature of site operations, the likely site geology, and the potential contaminants should match. Part of good consulting is predicting how contamination could happen, where the contaminants would go, and how the contaminants would behave. For example, a consultant who is familiar with metal contamination problems in a glacially formed area at a plating facility will have good investigation ideas for a similar facility.

Third, the regulatory authority should be the same. If a potential problem would be addressed by the state environmental agency, which is usually the case, then the consultant should have worked on similar problems with that state agency. Few of the important details are in the regulations; many of the proper procedures and methods are part of the state's practice. Problems that are "hot button" issues depend on the agency personnel. Intra-agency policy disputes may change site requirements. In short, good experience means good experience with the state regulators and programs.

Most state agencies are divided into program offices that administer particular statutes or regulations. For example, the air office administers the Clean Air Act, while the underground storage tank office administers the leaking underground storage tank program. Some programs overlap, even though the requirements and standards may differ. For a typical soil and groundwater contamination site, the hazardous waste program and the Superfund program both have jurisdiction. Good consultants can suggest steering the site to the appropriate program.

Economy

Proposed cost estimates must be competitive and should be analyzed in under three general parameters.

First, the total estimated project cost should be within the same order of magnitude as other consultants' estimates. Cost estimates that are too high or too low, relative to the other bidders,

indicate that the consultant probably misunderstood the scope of work. However, an estimated total project cost that is significantly lower than those of the other bidders—say 20 percent to 30 percent—and can be explained by lower rates, makes that proposal more attractive.

Second, part of analyzing estimated project cost is comparing hourly rates. Typically, most of the work is completed by the project manager and the environmental technicians. Lower rates for those individuals probably will mean lower project costs.

Finally, the cost and expense items should be evaluated. Three expense items are worth noting: (1) some consultants add a 10 to 20 percent handling charge on subcontracted work; (2) others may add 2 to 4 percent to project costs for telephone, postage, and other unrecoverable expenses; and (3) others add 1 to 3 percent of the total project cost to pay for insurance. Of those three kinds of expenses, generally some handling charge for subcontracted expenses is appropriate. Even though the work is subcontracted, the consultant still retains the contract liability risk for faulty work. In addition, the consultant is responsible for scheduling and completing subcontracted work. These risks entitle the consultant to a handling charge, generally not more than 10 percent; however, there may be grant restrictions on handling costs when using federal funds.

Most environmental cleanup consulting work is bid on a "time and materials" basis, with a cost cap not to be exceeded without prior authorization. Weather, geology, unexpected obstacles, and widespread contamination can significantly affect cost. As a result, consultants usually refuse to fix the price of the work. For example, in a large construction project, some consultants are willing to submit a "lump sum" bid. In these cases, the scope of work is usually well defined, and the consultant will include a premium in the bid to cushion against unexpected costs and delays.

Counsel

Consultants should give sound advice about the results of the work. Too often, consultants want to report only facts without any advice. Clients are entitled to consultant counseling in three areas.

First, the consultant should explain the results of the work. For example, the consultant should explain the likely sources of contamination detected in groundwater resources. Technical data are useful when they answer questions raised by the client's problems. Even if the technical data are meager, the client should get the consultant's best guess based on experience from similar projects.

Second, the consultant should be able to tell the client whether additional work is necessary to address the client's problem. For example, the consultant should tell the client whether any "flags" of potential contamination that deserve further investigation were discovered during a Phase I environmental site assessment. Some clients do not want the consultant to comment on further work in a Phase I report. Failing to undertake suggested work, the theory goes, means the initial assessment was not complete. Reports should not be hedged with qualifications and limitations that affect the value of the work. Sometimes more work is necessary to provide more data to avoid the need to qualify the conclusion or make uncertain assumptions.

Finally, the consultant should be able to evaluate the significance of a discovered problem. Different chemicals have different toxicity, and different concentration levels can change cleanup methods. Using whatever technical data were produced by the work, the consultant should be able to evaluate the severity of a problem.

Security

The consultant should have sufficient assets or insurance to stand behind his or her work. Sufficient resources should be available to cover the client's exposure to potential liability caused by the consultant's work.

An environmental consultant's work can cause client liability exposure in five ways:

- Third-party personal injury or property damage from negligent acts or omissions;
- Failure to identify environmental contamination problems;
- Improper design of removal or remedial cleanup action;

- Failure to properly operate and maintain remediation equipment; or
- Improper laboratory analysis.

In managing the risk of construction projects, usually the reasonable potential liability is matched against the contractor's assets or insurance. Environmental problems are difficult, however, because the potential liability does not correspond to the price of the environmental work. At best, the consultant's assets or insurance policy limits must roughly match the nature of the project. For example, insurance policy limits for an Phase I assessment can be lower than for the design of a remedial action to clean up a site.

To protect against risk, generally four types of insurance coverage are available to a consultant: commercial general liability, errors and omissions, environmental impairment liability, and transported disposal of pollutants.

Commercial General Liability

Commercial general liability (CGL) insurance can include errors and omissions (E&O) coverage as an endorsement or through a separate policy. A CGL policy provides coverage for third-party personal injury and property damages. Some CGL policies, even for environmental consultants, exclude damage from pollution. Before signing any contractual agreement, the policy should be verified.

Errors and Omissions

E&O insurance covers damage caused by a consultant's faulty professional services. A good consultant's CGL policy will cover pollution damage. In other cases, a special E&O policy covers laboratories performing sample analysis.

Environmental Impairment Liability

Contractor's environmental impairment liability (EIL) or pollution liability insurance covers contamination caused by a contractor while performing remedial work. For example, if a contractor accidentally breaks through a barrier while removing contaminated soil and contaminates groundwater, the EIL or pollution liability policy should cover the cost of groundwater remediation.

Transporter Disposal of Pollutants

Transporter disposal of pollutants insurance covers damages for releases that occur when commercial carriers transport hazardous substances. Transporters of hazardous substances are required by law to carry this insurance if they are engaged in the interstate transportation of such substances.

For most consulting work, the E&O insurance policy is typically the most important as it covers damages from errors or omissions of a consultant while performing listed professional services. Professional services must be included in the policy to have sufficient coverage. Although most consultants will not perform work outside the E&O coverage, it is appropriate to review the policy.

Pollution coverage provided by the E&O policy is important, even though it may change depending on the policy or be affected by state laws. Many E&O policies include a pollution exclusion with a sudden and accidental exception. Depending on the particular state law, policy language may have been interpreted to exclude coverage for ongoing pollution, like a leaking tank, while in other states, only intentional pollution is excluded.

Similarly, many E&O policies exclude coverage for negligently designed or ineffective removal or remedial actions to clean up a site. Other policies exclude coverage for claims based on the operation or maintenance of a removal or remedial action system. Many policies are written specifically for investigation and professional testing services.

For Phase I assessments, the professional services listed in the E&O policy should include the consultant's advice on determining what environmental hazards exist and must be remediated. Some policies exclude coverage for claims arising out of express warranties or guarantees as a way of prohibiting coverage for determinations of environmental hazards. Other policies include an exception to this exclusion that states that the consultant's determination regarding the presence of an environmental hazard is not an express warranty or guarantee.

Most E&O policies are written on a "claims made" basis so that the policy covers only claims

made during the policy period. In the event that the consultant's negligent work does not give rise to a claim until after the policy period has expired, there is no coverage even though the work occurred during the policy period. Some consulting contracts include a requirement that an E&O policy be maintained for a certain period of time after the work is performed.

Resources

Consultants that have laboratories, investigative equipment, and heavy machinery may have less trouble scheduling and completing site investigation and cleanup work on time. Rather than depending on subcontractors, the consultant can control its own resources for an important project. A request for proposal (RFP) for investigative work may call for the consultant's "equipment list," which is a schedule of heavy equipment. Other project RFPs may ask for specific equipment necessary for the scope of work.

Capability

A few consulting firms specialize in investigation and do not perform remediation work. If contamination is likely, selecting a consultant that can do remediation work may save time and project costs. During the on-site investigation work, the consultant can suggest project changes to help produce information for later remediation.

Contract

Some consultants are more willing to assume some project risk by contract. In other words, consultants that are willing to assume project risk have more confidence in the project plans and their own capabilities.

Management

Some consultants are difficult to manage. As with independent public accountants, a few consultants believe they have a public duty to ferret out all contamination and bring any discovery to the regulators. Other consultants refuse to adjust reports to for tone, clarity, and color. References usually will note unmanageable consultants.

Other management concerns should be considered in weeding out unqualified consult-

ants. Potential problem indicators include the following:

- Bids that are significantly lower than those of competing firms;
- “Hard-sell” approaches;
- Minimizing or maximizing potential technical or legal problems;
- Strong biases for or against certain cleanup remedies;
- Conflicts of interest; and
- Overly optimistic timelines.

APPENDIX VII

BROWNFIELDS INTERNET RESOURCES

This section provides a comprehensive listing of Internet sites that pertain to various government agencies, organizations, and topics that are associated with brownfields redevelopment.

Federal Partners

U.S. Department of Agriculture Cooperative State Research, Education, And Extension Service Natural Resource Conservation Service Office of Community Development Rural Business-Cooperative Service Rural Housing Service Rural Utilities Service U.S. Forest Service	http://www.usda.gov http://www.reeusda.gov/ http://www.nrcs.usda.gov/ http://www.rurdev.usda.gov/ocd/index.html http://www.rurdev.usda.gov/rbs/index.html http://www.rurdev.usda.gov/rhs/index.html http://www.rurdev.usda.gov/rus/index.html http://www.fs.fed.us/
U.S. Department of Commerce Economic Development Administration National Oceanic and Atmospheric Administration	http://www.doc.gov http://www.eda.gov http://www.noaa.gov
U.S. Department of Defense U.S. Army Corps of Engineers	http://www.defenselink.mil http://www.usace.army.mil
U.S. Department of Education Office of Adult and Vocational Education	http://www.ed.gov http://www.ed.gov/offices/OVAE/
U.S. Department of Energy Energy Efficiency and Renewable Energy Network Office of Building Technology, State, and Community Programs Office of Environmental Management Office of Energy Efficiency and Renewable Energy Office of Industrial Technologies Office of Power Technologies	http://www.energy.gov http://www.eren.doe.gov/ http://www.eren.doe.gov/buildings/ http://www.em.doe.gov/index4.html http://www.eren.doe.gov/ee.html http://www.oit.doe.gov/ http://www.eren.doe.gov/power/
U.S. Department of Health and Human Services Agency for Toxic Substances and Disease Registry National Institute for Environmental Health Sciences Office off Community Services	http://www.hhs.gov http://www.atsdr.cdc.gov/ http://www.niehs.nih.gov/ http://www.acf.dhhs.gov/programs/ocs/
U.S. Department of Housing and Urban Development	http://www.hud.gov
U.S. Department of Interior National Park Service U.S. Fish and Wildlife Service	http://www.doi.gov http://www.nps.gov http://www.fws.gov/
U.S. Department of Justice Community Relations Service Executive Office of Weed and Seed	http://www.usdoj.gov http://www.usdoj.gov/crs/ http://www.ojp.usdoj.gov/eows

U.S. Department of Labor Employment Training Administration	http://www.dol.gov http://www.doleta.gov/
U.S. Department of Transportation Federal Highway Administration Federal Railroad Administration Federal Transit Administration U.S. Maritime Administration	http://www.dot.gov http://www.fhwa.dot.gov http://www.fra.dot.gov http://www.fta.dot.gov http://www.marad.dot.gov
U.S. Department of Treasury Office of the Comptroller of the Currency	http://www.ustreas.gov http://www.occ.treas.gov
U.S. Department of Veterans Affairs	http://www.va.gov
Appalachian Regional Commission	http://www.arc.gov
U.S. Environmental Protection Agency Office of Enforcement and Compliance Assurance Office of General Counsel Office of Solid Waste and Emergency Response Technical Innovation Office	http://www.epa.gov http://es.epa.gov/oeca/index.html http://www.epa.gov/epahome/ogc.htm http://www.epa.gov/swerrims/ http://www.epa.gov/swertio1/index.htm
Executive Office of the President Council on Environmental Quality Office of Management and Budget	http://www.whitehouse.gov http://www.whitehouse.gov/CEQ http://www.whitehouse.gov/OMB/index.html
Federal Deposit Insurance Corporation	http://www.fdic.gov
Federal Housing Finance Board	http://www.fhfb.gov
U.S. General Services Administration	http://www.gsa.gov
U.S. Small Business Administration	http://www.sba.gov

Regional Government

<http://www.cglg.org/projects/brownfields/index.html>

The Council of Great Lakes Governors' (CGLG) Brownfields Project is fully regional in scope in that it builds upon individual state and provincial successes to jointly promote land recycling for long-term economic and environmental benefit. It provides a forum for the Great Lakes states and provinces to come together to create mechanisms for ongoing coordination and communication of brownfields issues and develop tools for further promoting regional brownfields redevelopment.

<http://www.glc.org/projects/robin/robinhome.html>

The Great Lakes Regional Online Brownfields Information Network provides a variety of information pertaining to brownfield redevelopment, including agencies and organizations, environmental liability, finance, laws, real estate, and technical assistance. Case studies of brownfield redevelopment projects are also included.

Note: Many Federal Agencies have links to Regional Offices and Programs through respective homepages.

State and Local Government

U.S. Environmental Protection Agency
Showcase Communities

Dallas, Texas

<http://www.ci.dallas.tx.us/html/brownfields.html>

The Brownfields initiative is designed to enable the Dallas community to acquire a comprehensive understanding of the economic barriers surrounding the revitalization a reuse of Brownfields and determine resolutions for the City's Brownfields challenges. Commercial, private, neighborhood and industrial outreach is part of the communication strategy to educate, inform receive feedback and input from Dallas citizens.

Eastward Ho!

<http://www.sfprc.com>

The South Florida Regional Planning Council is a dynamic agency whose main objectives are to work with the public and private leadership in the South Florida region to achieve a vision of the future, to identify challenges and opportunities which are regional in scope, and to create and implement strategies to achieve our desired future.

Portland, Oregon

<http://www.brownfield.org>

The web site for the City of Portland, Oregon Brownfields Initiative. The Portland Brownfields Initiative is building a set of government, business and community-supported processes that will foster restoration and reuse of contaminated land, and promote revitalization of neighborhoods within Portland's North/Northeast Enterprise Zone, the Enterprise Community, and along the Portland waterfront.

Note: Many federal agencies have links to state- and local-level offices and programs through their respective homepages.

Access specific state and local governmental information through appropriate state and city homepages. For example, many state government homepages are accessible through the following form of Internet address: [http://www.state.\[POSTAL CODE\].gov](http://www.state.[POSTAL CODE].gov).

Financial Assistance

http://www.bankamerica.com/environment/comm_envov.html

The Bank of America's community development environmental banking page provides information about environmental efforts that include brownfield redevelopment.

<http://www.csuohio.edu/glefc/>

The Great Lakes Environmental Finance Center helps communities and states build innovative, cost-effective, and high-quality strategies for environmental improvement and sustainable economic development.

<http://www.glc.org/projects/robin/finance/modellending.html>

This Web site demonstrates the city of Chicago's Model Lending Package and quantifies financial risk for lenders to demonstrate that environmental impairment does not necessarily inhibit economic development.

Real Estate Information

<http://www.brownfld.com>

Brownfield Realty, Ltd. is one of the nation's first companies to provide comprehensive services to quickly facilitate the economic redevelopment of environmentally impaired properties. Brownfield Realty, Ltd. assumes regulatory responsibility for environmentally compromised property, provides funds for efficient remediation, provides environmental insurance, and secures agency approvals necessary to return the property to profitability.

<http://www.cleanstart.com>

Clean Start is a New England-based service for under-utilized properties including: commercial, industrial, office, residential, and retail sites.

<http://www.greenonline.com/brownfields/>
The Brownfields Market at GreenOnline.com is a business-to-business marketplace for the entire range of goods and services related to brownfields development: properties; environmental, legal, financial, insurance, engineering, and construction services; and miscellaneous support such as training, conferences, and software. Users can post, view, and respond to listings as well as complete transactions online.

<http://www.2brownfields.com/brownfields/>
The EnviroFlex Web site is a real estate information service that provides users with the ability to search brownfield properties for sale or lease by location.

Remediation Technologies

<http://www.brownfieldstech.org>

This site is provided by Public Technology, Inc. and focuses on the demonstration, dissemination, and promotion of innovative brownfield character-

ization and remediation technologies. Its goal is to help local governments increase efficiencies and reduce costs associated with brownfield redevelopment.

<http://www.brownfieldstsc.org>

Coordinated through EPA's Technology Innovation Office, the Brownfields Technology Support Center will ensure that brownfields decision makers are aware of the full range of technologies available and to make informed or "smart" technology decisions for their sites. The center will provide a readily accessible resource for unbiased assessments and supporting information on options relevant to specific sites. The center also will provide a technology-oriented review process for investigation and clean-up plans for these sites: assessment and clean-up technologies that lower costs; decrease time frames; and/or positively impact other decision considerations (e.g., community acceptance, logistics, etc.) can significantly affect the redevelopment potential of brownfields sites.

<http://www.cesiweb.com/index.cfm>

Current Environmental Solutions, LLC (CES) of Irvine, California offers a site dedicated to providing information about innovative environmental remediation technologies. Site users will find case studies, cost and performance data reports, and technology advancements.

<http://www.clu-in.org/products/asr/index2.html>

This site provides an extensive EPA report on innovative technologies used to cleanup various Superfund sites across the United States.

<http://www.enviro-engrs.org/newtech.htm>

The American Academy of Environmental Engineers site provides an extensive overview of innovative solutions to environmental contamination. The site includes examples of remediation efforts at environmentally impaired sites, publications, and links.

<http://www.epa.gov/etv/>

The Environmental Protection Agency (EPA) has instituted a new program, the Environmental

Technology Verification Program—or ETV—to verify the performance of innovative technical solutions to problems that threaten human health or the environment. The ETV Program is operated by EPA’s Office of Research and Development; overseen by E. Timothy Oppelt, Director of the National Risk Management Research Laboratory in Cincinnati, OH; and managed by Penelope Hansen, the Director of the ETV Program, in Washington, DC. ETV was created to substantially accelerate the entrance of new environmental technologies into the domestic and international marketplace. ETV verifies commercial-ready, private sector technologies through 12 pilots.

<http://www.epa.gov/ORD/SITE/>
The U.S. Environmental Protection Agency’s (EPA) Superfund Innovative Technology Evaluation (SITE) Program was established by EPA’s Office of Solid Waste and Emergency Response and the Office of Research and Development (ORD) in response to the 1986 Superfund Amendments and Reauthorization Act (SARA), which recognized a need for an “Alternative or Innovative Treatment Technology Research and Demonstration Program.” The SITE Program is administered by ORD National Risk Management Research Laboratory in the Land Remediation and Pollution Control Division (LRPCD), headquartered in Cincinnati, Ohio.

<http://www.epa.gov/tio/>
The Technology Innovation Office of the U.S. Environmental Protection Agency was created in 1990 to act as an advocate for new technologies. TIO’s mission is to increase the applications of innovative treatment technologies to contaminated waste sites, soils, and groundwater. TIO has encouraged and relied on cooperative ventures with other partners to accomplish most of its early goals. This effort to leverage resources has led to numerous joint efforts that have enhanced the state of remediation. Since its creation, TIO has worked with many partners inside EPA, in other federal agencies, and in the private sector to improve the Nation’s understanding of remediation treatment technologies and reduce the impediments to their widespread use.

<http://www.epareachit.org>
This site supplies users with an EPA database of innovative treatment technologies with contaminated sites where they have been used.

<http://www.frtr.gov>
The Federal Remediation Technologies Roundtable is Web site provides a “yellow pages” of remediation technologies and is intended to be used as a tool for remedial project managers (RPM’s) in selecting remedial alternatives.

<http://www.fusrap.usace.army.mil/fusrap/techpap/index.html>
The Formerly Utilized Sites Remedial Action Program (FUSRAP) site provides scholarly papers and presentations about the development and application of innovative technologies and management practices.

<http://www.globaltechs.com>
GLOBALtechs is an Internet Remediation Technologies directory that offers technical and project information on over 600 remediation technologies. GLOBALtechs subscribers can access technology descriptions, project data and results, technology contacts, and cost information online. In addition, subscribers can identify technologies for site specific criteria through key word searches.

<http://www.gwrtac.org>
The Groundwater Remediation Technologies Analysis Center (GWRTAC) compiles, analyzes, and disseminates information on innovative ground-water remediation technologies. GWRTAC prepares reports by technical teams selectively chosen from Concurrent Technologies Corporation (CTC), the University of Pittsburgh, and other supporting institutions, and also maintains an active outreach program. Dr. Dawn Kaback serves as the director, and Dr. Frederick Pohland the co-director of GWRTAC. Dr. Edgar Berkey continues to be involved with GWRTAC as an advisor. Ms. Diane Roote serves as GWRTAC’s project manager and is supported by appropriate CTC staff scientists and engineers, including Mr. Brian Bosilovich. GWRTAC’s activities are guided by an Advisory Committee consisting of highly qualified

members of the ground-water remediation community.

<http://www.niehs.nih.gov/sbrp/home.htm>
This site is the homepage of the Superfund Basic Research Program. The program is federally funded and presents research on health effects, risk/exposure, ecology, fate and transport, bioremediation, and remediation. Users of the site will find remediation research covering a broad range of technologies that are being developed for the cleanup of air, water, and soil contaminated with hazardous substances, including methods such as chemical treatment, physical washing, extraction, stripping, stabilization, and incineration.

<http://www.rppintl.com/>
Over its 20-year history, Research Policy Practice (RPP) International has brought powerful R&D solutions to the challenges facing human communities. RPP and its network of strategic partners have demonstrated competence in working with a wide variety of education and development projects, industries, and communities from multinational conglomerates to local schools. For each project, the company brings together a unique combination of systems thinking, project management capability, and subject area expertise suited to a client's need for the pragmatic application of innovation at a competitive cost.

<http://www.indigodev.com/>
Indigo development serves as the R & D Center of RPP International. Indigo's mission is creating systems solutions to major challenges of sustainable development. Working with a holistic definition of industrial ecology, we function as a virtual think tank linking research and development with both private and public sector applications.

<http://www.rtdf.org>
The Remediation Technologies Development Forum (RTDF) was established in 1992 by the U.S. Environmental Protection Agency (EPA) to identify what government and industry can do together to develop and improve the environmental technologies needed to address their mutual cleanup problems in the safest, most cost-effective

manner. The RTDF fosters public and private sector partnerships to undertake research, development, demonstration, and evaluation efforts focused on finding innovative solutions to high priority problems. The RTDF has grown to include partners from industry, several federal and state government agencies, and academia who voluntarily sharing knowledge, experience, equipment, facilities, and even proprietary technology to achieve common cleanup goals.

<http://www.toscprogram.org>
Technical Outreach for Communities (TOSC) uses university educational and technical resources to help community groups understand the technical issues involving the hazardous waste sites in their midst. TOSC aims to empower communities to participate substantively in the decision-making process regarding their hazardous substance problems.

Nonprofit Organizations

<http://www.awma.org/>
The Air & Waste Management Association (A&WMA) is a nonprofit, nonpartisan professional organization that provides training, information, and networking opportunities to 12,000 environmental professionals in 65 countries. The Association's goals are to strengthen the environmental profession, expand scientific and technological responses to environmental concerns, and assist professionals in critical environmental decision making to benefit society.

<http://www.battelle.org/>
Battelle develops new technologies, commercializes products, and provides solutions for industry and government. The organization's innovations range from medical products and pharmaceuticals to products for the automotive, chemical, and agrochemical industries. Battelle develops environmental and energy solutions for industry and government, and we develop practical, technological solutions for challenges in national security, transportation, and health and human services.

<http://www.brownfields.com>

Brownfields.com is the business and community portal for identifying, structuring, closing and supporting Brownfields and Urban Redevelopment transactions on the Internet.

<http://www.brownfieldsnet.org>

The Brownfields Non-Profits Network Web site offers links to a number of organizations conducting brownfield research.

<http://www.brnfldsred.com/index.shtml>

The mission of Brownfields Redevelopment International (BRI) is the acquisition, remediation and redevelopment of environmentally distressed properties. With company headquarters located in Cary, North Carolina, the company seeks opportunities to purchase contaminated properties throughout the United States. BRI's innovative approach focuses on the purchase, cleanup, development, and long term management of redeveloped properties rather than selling properties after they are clean.

<http://www.cpeo.org>

The Center for Public Environmental Oversight (CPEO) promotes and facilitates public participation in the oversight of environmental activities of federal facilities, private Superfund sites, and brownfields. CPEO organizes and co-sponsors regional and national workshops for public stakeholders on technical, policy, and process issues, and it also helps put together forums designed to serve all constituencies. In addition, CPEO staff regularly interact with community activists by phone, fax, mail, and E-mail, providing information, references, and advice. In support of this work, CPEO maintains an extensive, categorized, continuously updated library of clippings, reports, books, and other publications.

<http://www.cued.org>

Since 1967, the Council for Urban Economic Development has grown over 30 years to become a wide ranging organization offering a variety of services to economic development practitioners and to other allied organizations as well. CUED is committed to represent the diverse interests in economic development, from the public sector

economic developer to chamber of commerce executive, to site selection consultant.

<http://www.eli.org>

The Environmental Law Institute (ELI) is an internationally recognized, independent research and education center dedicated to shaping the fields of environmental law, policy, and management, domestically and abroad. Through its information services, training courses and seminars, research programs, and policy recommendations, ELI activates a broad constituency of environmental professionals in government, industry, the private bar, public interest groups, and academia. Central to ELI's mission is convening this diverse constituency to work cooperatively in developing effective solutions to pressing environmental problems.

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

The American Farmland Trust (AFT) is a private, nonprofit organization founded in 1980 to protect U.S. farmland. AFT works to stop the loss of productive farmland and to promote farming practices that lead to a healthy environment.

<http://www.icma.org>

<http://www.icma.org/brownfields>

The International City/County Management Association (ICMA) was founded with a commitment to the preservation of the values and integrity of representative local government and local democracy and a dedication to the promotion of efficient and effective management of public services. To fulfill the spirit of this commitment, ICMA works to maintain and enhance public trust and confidence in local government, to achieve equity and social justice, to affirm human dignity, and to improve the quality of life for the individual and the community.

<http://www.instrm.org>

The Institute for Responsible Management homepage provides a host of brownfield information. Pilot matrices, a newsletter, and database of EPA Brownfield Demonstration Pilot Project contact information are available.

<http://www.naco.org>

The National Association of Counties (NACo), the only national organization that represents county governments in the United States, continues to follow the traditions established by those early county officials. With its headquarters on Capitol Hill, NACo is a full-service organization that provides an extensive line of services including legislative, research, and technical as well as public affairs assistance to its members. The association acts as a liaison with other levels of government, works to improve public understanding of counties, serves as a national advocate for counties and provides them with resources to help them find innovative methods to meet the challenges they face. NACo is involved in a number of special projects that deal with such issues as the environment, sustainable communities, volunteerism and intergenerational studies.

<http://www.nado.org/legaffair/brnfield.html>

The National Association of Development Organization is dedicated to assisting small metropolitan areas and rural America through its Brownfield and Environmental issues Internet page which provides brownfield legislative updates and other brownfields related news.

<http://www.naiop.org>

The National Association of Industrial and Office Properties (NAIOP) is a trade association with over 8,000 members who are developers, owners, investors and related professionals in industrial and office real estate in 46 Chapters across the U.S. and Canada. NAIOP promotes effective public policy through its grassroots network to create, protect and enhance property values. It offers education programs, research on trends and innovations, networking opportunities and strong legislative representation.

<http://www.nalgep.org>

The National Association of Local Government Environmental Professionals (NALGEP) is a not-for-profit organization that represents local government personnel responsible for ensuring environmental compliance and developing and implementing environmental policies and programs. NALGEP's membership includes more than

130 local government entities located throughout the United States, ranging in size from the largest cities to much smaller local communities.

<http://www.nationaltrust.org>

The National Trust for Historic Preservation provides leadership, education and advocacy to save America's diverse historic places and revitalize our communities.

<http://www.ncsl.org>

The National Conference of State Legislatures (NCSL) was founded in 1975 in the belief that legislative service is one of democracy's worthiest pursuits. Representing the citizens of a district and the people of a state is the very essence of free government. NCSL is a bipartisan organization dedicated to serving the lawmakers and staffs of the nation's 50 states, its commonwealths and territories. NCSL is a source for research, publications, consulting services, meetings and seminars. It is the national conduit for lawmakers to communicate with one another and share ideas. NCSL is an effective and respected voice for the states in Washington, D.C., representing their interests before Congress, the administration and federal agencies.

<http://www.nemw.org>

The Northeast-Midwest Institute Web site provides users with access to cutting edge published reports and books pertaining to brownfield cleanup and finance strategies.

<http://www.nga.org>

<http://www.nga.org/CBP/Activities/BrownfieldRedev.asp>

The National Governors' Association (NGA) is the only bipartisan national organization of, by, and for the nations' Governors. Its members are the Governors of the fifty states, the commonwealths of the Northern Mariana Islands and Puerto Rico, and the territories of American Samoa, Guam, and the Virgin Islands. NGA was founded in 1908 after the Governors met with President Theodore Roosevelt to discuss conservation issues. The Governors decided to form an association through which they could come together to discuss their mutual concerns and act collectively. In 1967 the

Governors established an Office of State Federal Relations in Washington, D.C.

<http://www.nlc.org>

The mission of the National League of Cities (NLC) is to strengthen and promote cities as centers of opportunity, leadership, and governance. NLC was established in 1924 by and for reform-minded state municipal leagues. NLC now represents 49 leagues, more than 1,500 member cities, and through the membership of the state municipal leagues, NLC represents more than 18,000 cities and towns of all sizes in total.

<http://www.setac.org>

The Society of Environmental Toxicology and Chemistry (SETAC) is an independent, nonprofit professional society that provides a forum for individuals and institutions engaged in the study of environmental issues, the management and conservation of natural resources, environmental education, and environmental research and development

<http://www.sso.org>

<http://www.sso.org/ecos>

The State Service Organization (SSO) was founded in 1976 as a joint venture of the Council of State Governments, the National Conference of State Legislatures, and the National Governors' Association. Our mission is to provide our affiliates with superior service at competitive prices achieved through economies of scale. Appreciating that time is a scarce commodity to many of our affiliates, we strive to offer a comprehensive range of services. These include a full service library, eleven conference rooms, a print shop, Internet access via a T-1 connection, a mailroom, desktop publishing, address list maintenance, and state-of-the-art telecommunication services.

The Environmental Council of States (ECOS) was established in December, 1993 at a meeting of approximately 20 states in Phoenix, Arizona. Initially operated out of the state office of the first association president, ECOS then retained a Washington firm to represent its interests. Near the end of 1994, a decision was made to switch to a more traditional organizational style with permanent staff. The first full-time executive

director began work on March 1, 1995, and an office was established and occupied on May 1, 1995.

<http://www.statesnews.org>

Founded on the premise that the states are the best sources of insight and innovation, the Council of State Governments (CSG) provides a network for identifying and sharing ideas with state leaders. To this end CSG: builds leadership skills to improve decision-making; advocates multi-state problem solving and partnerships; interprets changing national and international conditions to prepare states for the future; and promotes the sovereignty of the states and their role in the American federal system.

<http://www.tpl.org>

The Trust for Public Land is the only national nonprofit working exclusively to protect land for human enjoyment and well-being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities.

<http://www.uli.org/indexJS.htm>

The mission of the Urban Land Institute (ULI) is to provide leadership in the responsible use of land to enhance the total environment. ULI's strategic direction is to extend its industry leadership to: bring together the people able to influence the outcome of important issues related to land use and the built environment; communicate who we are and what we—our members and our Institute—have learned about land use to increase ULI's influence on land use policy and practice; and continue to provide relevant and current information about land use and real estate development to all our members and stakeholders.

<http://www.usmayors.org/uscm/brownfields/>

The U.S. Conference of Mayors has completed extensive research on brownfield redevelopment and provides users with a copy of their 1999 brownfields report and success stories from across the country.

University Programs

<http://www.ce.cmu.edu/Brownfields/>
Carnegie Mellon University in Pittsburgh, Pennsylvania has established the Brownfields Information Center, which is a clearinghouse of information related to brownfields redevelopment.

<http://weber.u.washington.edu/~kspage/>
The Kissel Lab Web site is maintained by the Department of Environmental Health at the University of Washington. The site offers an information exchange of data from research findings and ideas related to dermal exposure and absorption data.

<http://www.lib.msu.edu/link/brwnflds.htm>
The Michigan State University Web site offers links to a number of brownfield websites.

<http://www.pitt.edu/~prises/>
The University of Pittsburgh brownfields Web site, Pittsburgh Rises, is an evaluation and marketing system designed for brownfield properties in southwestern Pennsylvania.

<http://www.engin.umich.edu/dept/cee/research/HSRC/index.html>
The Great Lakes Mid-Atlantic Center For Hazardous Substance Research Web site is maintained by the University of Michigan, Michigan State University, and Howard University and provides soil contamination studies and remediation technologies.

<http://www.oxy.edu/departments/ess/>
Occidental College provides a Community-Based Environmental Health Page for its ongoing research into environmental health risks and environmental justice issues in the Los Angeles, California region.

Public Health Issues

<http://www.riskworld.com>
The Riskworld Web site covers news and views on risk assessment and risk management

<http://www.epa.gov/ncea/index.html>
The National Center For Environmental Assessment homepage supplies an assortment of information, including risk assessment, risk assessment guidelines, and risk tools.

<http://www.epa.gov/ncea/hhfacts.htm>
This Web site offers information on health and social issues and research related data.

<http://www.hsph.harvard.edu/Organizations/hcra/hcra.html>
The Harvard Center For Risk Analysis provides information about the relationship between environmental hazards and public health.

<http://www.astdr.edc.gov/ex.html>
The ATSDR Science Center Web site provides a comprehensive list of environmental and public health related links.

Environmental Justice

<http://www.epa.gov/swerosps/ej/index.html>
EPA's Environmental Justice homepage is the official site of EPA's environmental justice projects and programs.

<http://www.oxy.edu/departments/ess/ejlnk.htm>
Occidental College's Environmental Justice page links to a host of Environmental Justice Web sites.

<http://es.epa.gov/oeca/main/ej/index.html>
The EPA Office of Enforcement and Compliance Assurance Environmental Justice page provides extensive information information about the National Environmental Justice Advisory Council, environmental justice publications, and related links.

<http://www.ccae.org/>
The Center for Community Action and Environmental Justice serves as a resource for community groups working on environmental justice issues. The center provides community groups with publications, technical assistance, outreach, referral and network development, and training.

<http://www.igc.org/envjustice/>

The EcoJustice Network addresses environmental issues facing communities of color in the United States and provides on-line services, informational resources, and training for activists and organizations involved in the environmental justice movement.

<http://www.igc.apc.org/cbe>

Communities for a Better Environment-California (CBE) is a non-profit, statewide, multiracial, urban environmental health and justice organization that works with urban communities and grassroots organizations to promote science based research, legal tactics, and organizing strategies for the prevention and elimination of air and water pollution and toxic hazards.

General Brownfields Information

<http://www.astm.org>

The American Society for Testing and Materials (ASTM) strives to be the foremost developer and provider of voluntary consensus standards, related technical information, and services having internationally recognized quality and applicability that: promote public health and safety, and the overall quality of life; contribute to the reliability of materials, products, systems and services; and facilitate national, regional, and international commerce.

<http://www.brownfieldshelp.com>

The National Brownfields Reclamation Center provides general information about brownfields, government programs, and links to online resources. The site is intended to be a forum for the exchange of ideas and information.

<http://www.brownfieldnews.com/>

The national brownfield magazine homepage tracks brownfield redevelopment projects and issues reports for industry experts in the real estate, legal, banking/finance, environmental regulatory, accounting, insurance, and government fields.

<http://www.smartgrowth.org/index2.html>

The Smart Growth Network helps create national, regional, and local coalitions to encourage metropolitan development. In addition, the Smart Growth Network brownfields page provides a listing of brownfield publications.

<http://www.waterfronttrust.com>

The Waterfront Regeneration Trust is committed to bringing together people, ideas, and resources to invest in the regeneration of the Lake Ontario waterfront.