International City/County Management Association

ICMA

A PUBLICATION OF
ICMA'S BROWNFIELDS
PROGRAM

Striking a Balance: Local Government Implementation of Land Use Controls

Strategies from the 2003 Brownfields Peer Exchange

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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 and information.

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-R-82870801.

Other ICMA publications made possible by this and prior cooperative agreements with the U.S. Environmental Protection Agency include:

Beyond Fences: Brownfields and the Challenges of Land Use Controls
Brownfields and Utility Sites: A Primer for Local Governments
Brownfields Blueprints: A Study of the Showcase Communities Initiative
Brownfields Redevelopment: A Guidebook for Local Governments and Communities- Second Edition
Building New Markets: Best Practices from ICMA's 1999 Brownfield Peer Exchanges
Getting the Job Done: Strategies and Lessons Learned in Facilitating Brownfields Job Training
Growing Greener: Revitalizing Brownfields Into Greenspace
ICMA Base Reuse Handbook: A Navigational Guide for Local Governments
Land Use Controls: Insights and Observations - A Summary of ICMA's LUC Forums and LUC Framework for Local Governments
Measuring Success in Brownfields Redevelopment Programs
Navigating the Waters: Coordination of Waterfront Brownfields Redevelopment
Old Tools and New Uses: Local Government Coordination of Brownfields Redevelopment for Historic and Cultural Reuses
Partners in Planning: Strategies from the 2001 Brownfields Peer Exchange
Righting the Wrong: A Model Plan for Environmental Justice in Brownfields Redevelopment
Small Spaces, Special Places: Coordination of Rural Brownfields Redevelopment

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The opinions in this guidebook are solely those of the author, and do not necessarily reflect the views of the U.S. Environmental Protection Agency.

All information contained herein is based on the research and expertise of the author unless otherwise noted.

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Table of Contents

About ICMA iii
Acknowledgements v
Acronym List viii

Chapter 1: Introduction 1
Overview 1
Land Use Controls Defined 2
Local Opportunities to Promote Economic Development while Protecting Public Health and the Environment 2
Roles of Stakeholders 3
The Peer Exchange Concept 3
Research Methodology 4
Organization of the Report 4

Chapter 2: Current and Emerging Themes 5
Overview 5
Maintaining Land Use Controls 7
Design and implementation 7
Stakeholder coordination 8
Information management 10
Enforcement 10
Funding 11

Chapter 3: Profiles of Peer Exchange Communities 13
Chautauqua County, New York 13
Louisville-Jefferson County, Kentucky 17

Chapter 4: The Chautauqua County and Louisville-Jefferson County Peer Exchange 23
Overview 23
Design and Implementation 24
Stakeholder Coordination 28
Information Management 33
Enforcement 36
Funding 41
Conclusions and Next Steps 44

List of Tables
Table 2.1: Examples of Institutional Controls at Contaminated Sites 6
Table 4.1: Selected Federal Resources for Brownfields Cleanup and Redevelopment 43

Acronym List

ADEQ	*Arizona Department of Environmental Quality*
Brownfields Law	*Small Business Liability Relief and Brownfields Revitalization Act*
CERCLA	*Comprehensive Environmental Restoration, Compensation, and Liability Act*
DEP	*(Massachusetts) Department of Environmental Protection*
DEUR	*Declaration of Environmental Use Restriction*
DTSC	*(California) Department of Toxic Substances Control*
EC	*Enterprise Community*
EPA	*U.S. Environmental Protection Agency*
EZ	*Empowerment Zone*
FAM	*financial assurance mechanism*
GIS	*geographic information system*
HUD	*U.S. Department of Housing and Urban Development*
IC	*institutional control*
ICMA	*International City/County Management Association*
IPA	*Intergovernmental Personnel Assignment*
LUC	*land use control*
LUCIP	*land use control implementation plan*
LOJIC	*Louisville-Jefferson County Information Consortium*
MSD	*(Louisville-Jefferson County) Metropolitan Sewer District*
NREPC	*(Kentucky) Natural Resources and Environmental Protection Cabinet*
NPL	*National Priorities List*
NYSDEC	*New York State Department of Environmental Conservation*
PCB	*polychlorinated biphenyl*
PVA	*(Louisville-Jefferson County) Property Valuation Administrator*
RC	*Renewal Community*
RCRA	*Resource Conservation and Recovery Act*
Redevelopment Authority	*(Louisville-Jefferson) County Redevelopment Authority*
SI/RAR	*site investigation/remedial alternatives report*
Superfund	*Comprehensive Environmental Restoration, Compensation, and Liability Act*
USDA	*U.S. Department of Agriculture*
UST	*underground storage tank*
VCP	*voluntary cleanup program*
VERA	*(Kentucky) Voluntary Environmental Remediation Act*

Chapter 1

Introduction

Overview

The cleanup and redevelopment of contaminated properties are becoming widely accepted tools in community design and revitalization strategies. Congress passed the Resource Conservation and Recovery Act (RCRA) in 1976; the Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA or Superfund) in 1980 (amended in 1984); and the Small Business Liability Relief and Brownfields Revitalization Act (Brownfields Law) in 2001. Since passage of these laws, local, state, and federal agencies, as well as private enterprises and the general public, have worked to understand how cleanup and redevelopment challenges are affected by government policies. They also have worked together to develop innovative means of revitalizing contaminated and abandoned properties by addressing questions of financial, liability, and jurisdictional responsibility.

Since the inception of Superfund, 1,509 properties have been placed on the National Priorities List (NPL), an inventory of the most severely contaminated properties in the United States.[1] By the year 2000, the number of NPL sites where cleanup and redevelopment had been completed reached 757 properties, with another 417 cleanup and construction projects under way.[2] The signing of the Brownfields Law in 2001 signified sustained national interest in the cleanup and redevelopment of former industrial, commercial, and military sites. In addition to tackling the most severely contaminated properties in the country, government officials and community members began to take advantage of liability assurances and financial incentives to assess, remediate, and redevelop vacant, underused, and potentially hazardous brownfields. The opportunity to reclaim these brownfields properties will continue to grow as neighborhoods that have suffered from the real or perceived presence of hazardous wastes take action.

Many questions that surround the cleanup and redevelopment of potentially contaminated properties are not concerned with why but how. Because of industrial and commercial practices, contaminants have been left in place in buildings and infrastructure, buried or leached into the soil and water table, or carried off-site in surface water and groundwater. Remediating contaminants without exacerbating the exposure of the public and the environment to pollutants is of concern to city planners and state and federal environmental officials. The challenge, therefore, is to blend environmental cleanup, public health protection, and site reclamation with opportunities for economic development and community revitalization.

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[1] U.S. Environmental Protection Agency, "Superfund Cleanup Figures, Superfund, US EPA." Available at http://www.epa.gov/superfund/action/progress/mgmtrtpt.htm. July 14, 2003.

[2] Ibid.

Land Use Controls Defined

Land use controls (LUCs) are "legal mechanisms that protect public health and the environment from residual contamination at brownfields and Superfund properties, former military installations, or other contaminated properties."[3] LUCs reduce financial and liability concerns for redevelopment activities in two ways. First, they decrease costs by containing, recording, and limiting exposure to residual levels of contamination. Second, land use controls establish legally enforceable agreements that attach to and transfer with real estate instruments. Those instruments describe restrictions on land uses and activities that apply to former, current, and future property owners, lessors, lessees, and facility operators.

Land use controls can be engineering controls or institutional controls. Engineering controls are physical mechanisms that contain, mitigate, or monitor residual contamination, as well as prohibit access to the property or specific area in question. Engineering controls range from containment caps to simple fences. Institutional controls (ICs) include private and public notices and procedures that make public all necessary information pertaining to a contaminated property. Institutional controls can be divided into four categories: governmental controls, proprietary controls, enforcement and permit tools with IC components, and informational devices. Examples of ICs include public notices and advisories, permits, and zoning ordinances, as well as private deed restrictions, easements, and other restrictive covenants. For detailed descriptions of land use controls as well as ways that local governments can develop and implement them, see Chapter 2, Current and Emerging Themes.

[3] Joseph Schilling, Christine Gaspar, and Nadejda Mishkovsky, Beyond Fences: Brownfields and the Challenges of Land Use Controls,(Washington, D.C.: International City/County Management Association, 2000), p. 4.

Local Opportunities to Promote Economic Development while Protecting Public Health and the Environment

Redeveloping contaminated sites can return idle properties to productive use. By redeveloping and reusing former industrial facilities, local officials can stem the migration of commerce, jobs, and citizens from the urban core to suburban communities. Additionally, infill development (a common form of redevelopment) can help to keep development within a city's existing boundaries, thus preserving open space and decreasing the effects of urban sprawl. Land use controls are an essential part of this picture. Local officials are recognizing LUCs as mechanisms that:

- Streamline the cleanup and redevelopment of contaminated properties by allowing negotiated residual levels of contamination to remain onsite;
- Provide incentives for communities to clean up and redevelop brownfields as an alternative to developing greenfields;
- Account for contamination in accessible public records in perpetuity;
- Protect the general public from future exposure to hazards associated with cleanup, redevelopment, and future property uses; and
- Promote information sharing and coordination among local, state, and federal agencies, as well as private stakeholders and the general public.

Although there is considerable debate over cleanups that leave residual contamination at a property, complete remediation may not be feasible. Economic realities (such as a lack of funding for potentially extensive cleanups or a lack of market-driven impetus for redevelopment) and ongoing scientific uncertainty about "safe" remediation levels often lead to circumstances that preclude complete remediation of a property. Moreover, dilapidated buildings, infrastructure, and debris — as well as trespassers and illegal activities at a property — may pose additional threats to the health and safety of a community. Redeveloping a blighted and potentially dangerous property in a manner that controls exposure

to contaminants will have greater long-term benefits for the community than simply cordoning the property off from nearby homes and residents. Local governments are recognizing the benefits of land use controls and other innovative redevelopment strategies to safely combine environmental and public health protection, economic development, and community revitalization.

Roles of Stakeholders

To develop, implement, and manage land use controls, governmental and nongovernmental stakeholders in the redevelopment process must coordinate their efforts. Local governments, because of their role in planning, issuing permits, and installing and maintaining infrastructure, are ideally suited to regulating and monitoring land use controls. They also have knowledge of the properties, owners, operators, developers, and other stakeholders in the community.

State governments have the authority to enforce environmental laws and cleanup standards, issue legal covenants to innocent and responsible parties, and maintain a comprehensive statewide list of contaminated properties and land use controls. Many states administer voluntary cleanup programs (VCPs) that often integrate LUCs and other agreements in negotiated cleanup remedies.

At the federal level, environmental regulation, oversight, and enforcement are typically handled by the U.S. Environmental Protection Agency (EPA), although the U.S. Department of Defense, the U.S. Department of Energy, and the U.S. Department of Justice have jurisdiction in certain areas, depending on the type of land use, ownership of the property, contamination levels, and regulatory action in question. Land use controls are often required by federal legislation (CERCLA and RCRA) as part of remedy selection and records of decision for cleanup activities.

Land use controls cannot be effective without long-term means of tracking, enforcing, and funding them. To this end, input and endorsement from stakeholders are essential. Their involvement is critical to the overall success of community revitalization efforts that incorporate land use controls.

To facilitate coordination among governmental and nongovernmental stakeholders in the redevelopment of contaminated properties and the use of LUCs as tools of revitalization, the International City/County Management Association (ICMA) conducted the Land Use Control Peer Exchange. ICMA's Research Team identified and documented the challenges and opportunities facing local governments in five areas: design and implementation of land use controls, stakeholder coordination, information management, enforcement, and funding.

The Peer Exchange Concept

In 1998, the International City/County Management Association initiated the Brownfields Peer Exchange program through a cooperative agreement with the U.S. Environmental Protection Agency. ICMA conceived of the program as a way to conduct research into brownfields best practices and assist local brownfields practitioners in overcoming challenges to their redevelopment efforts.

The Peer Exchange program links two communities that have requested assistance with similar aspects of brownfields cleanup and redevelopment. Although tailored to the specific goals of the communities involved, every Peer Exchange is designed to:

- Conduct research on common issues communities face when redeveloping brownfields and other contaminated properties;
- Identify successful strategies and methods employed by communities in overcoming obstacles to redevelopment; and
- Offer redevelopment practitioners an opportunity to share their experiences with their peers.

The Peer Exchange program enables communities facing specific problems to learn from others that have successfully overcome the same obstacles. Participating communities have the opportunity to develop their management and outreach skills, view their own initiatives from a new perspective, and gain national recognition for their achievements. They also gain valuable technical assistance from experienced local officials and private

sector experts, and develop their own professional expertise. All participating communities learn about innovative approaches to redevelopment and have the opportunity to establish an ongoing relationship with another community.

Over a period of several months, ICMA solicits applications to the Peer Exchange program through a variety of media outlets targeting local governments and brownfields practitioners. ICMA also reaches out to specific communities that are known to have particular areas of expertise or a desire to explore a particular brownfields issue. It encourages those communities to apply to the program. Communities are selected for a Peer Exchange based on how well their skills match the needs of another.

Research Methodology

Participants in the 2003 Peer Exchange were selected in March. In May, ICMA kicked off the program with a conference call between representatives of participating communities. The participants were welcomed, introduced to their counterparts from their peer community and to ICMA staff members, and given an overview of the activities and timeline of the program.

In June, a second conference call brought together representatives from each pair of participating communities. Participants answered to questions about each community, and jointly developed an agenda for the peer exchange. ICMA staff members then worked with each host community to finalize details for the peer exchange, including a visit to relevant properties within the host community. The peer exchange site visit occurred in June 2003.

Upon completion of the peer exchange, ICMA staff members drafted a case study reporting the research findings and lesson learned. Best practices were identified to enable communities that did not participate in the peer exchange to learn from the exchange. Peer Exchange participants had the opportunity to review and submit comments on the case study draft prior to publication.

Organization of the Report

This report highlights the best practices, strategies, and lessons learned from the peer exchange program. As Chapter 1 has made clear, the successful development and implementation of land use controls can enhance the cleanup and redevelopment process at brownfields and other contaminated properties. Chapter 2 provides an in-depth look at land use controls and the challenges and opportunities that local governments and other public and private stakeholders face in maintaining them.

In Chapter 3, profiles of the two Peer Exchange communities — Chautauqua County, New York, and Louisville-Jefferson County, Kentucky - are presented. The chapter gives an overview (geographic, economic, and demographic) of the brownfields program in each community, its brownfields program, explains specific redevelopment initiatives and identifies pressing topics related to land use controls that were addressed during the Peer Exchange.

Chapter 4 summarizes the discussions that occurred at the Peer Exchange between Chautauqua County, New York, and Louisville-Jefferson County, Kentucky, in five areas: the design and implementation of land use controls, stakeholder coordination, information management, enforcement, and funding. It reports on the logic for matching the two communities and provides a context for their brownfields redevelopment efforts. Research findings in the five areas are summarized. Unless otherwise noted, all details, facts, and figures (such as demographics, unemployment rates, and others) were reported by the primary contacts for each respective community.

Chapter 2

Current and Emerging Themes

Overview

Effective land use controls (LUCs) protect human health and the environment at contaminated properties targeted for cleanup and redevelopment. Standards for the level of cleanup vary according to the future use of the property. The term "unrestricted use" refers to cleanup levels safe for any possible future property use, such as housing, schools, and other activities where people, including sensitive populations, may come into direct contact with soil, groundwater, or vapors. Land use controls allow for remediation of a property to levels that are determined to be safe for restricted land uses (which have standards less stringent than those for unrestricted uses). For example, redeveloping a contaminated, former industrial property for similar industrial operations would not require the same level of cleanup as residential housing, a hospital, or a school.

In lieu of costly and timely cleanup measures, local governments, property owners, and site managers implement various land use controls. These controls limit the kinds of activities that can occur on the property. LUCs often establish procedures and points of contact if the controls are breached or if a property owner, lessor, or lessee wishes to modify on-site buildings or infrastructure. LUCs are also binding mechanisms that stakeholders with legal interests in the property are subject to uphold. If controls are breached or ignored, enforcement actions can be taken. The implementation plans and supporting documents that may accompany LUCs frequently outline the responsibilities and liabilities of all stakeholders affected by a property before, during, and after cleanup and redevelopment.

The effectiveness of land use controls to safeguard public health and the environment remains a concern, however. Although LUCs are proven means to leverage redevelopment by providing incentives for reduced remediation costs to developers and property owners (including potentially responsible parties), many argue that leaving any amount of contamination on a property is inherently unsafe. Thus, the challenge is to create LUCs that successfully blend economic development and community revitalization but not at the cost of protecting public health and the environment.

This chapter defines the two main categories of land use controls (institutional and engineering controls) and explains the role of various levels of government, the private sector, and the general public in implementing and maintaining LUCs. The chapter specifically addresses the five primary ingredients in LUC maintenance: design and implementation, stakeholder coordination, information management, enforcement, and funding.

Table 2.1 Examples of Institutional Controls at Contaminated Sites

Government Controls

Notices and advisories inform the public of existing contamination on a site or of the risks of drinking contaminated groundwater. These legal notices are often implemented with physical controls such as fences.[6]

Zoning regulates the location and uses of land. For example, industrial uses and activities might be barred in residential areas. Local governments usually pass planning and zoning ordinances to restrict land uses.

An **overlay zone** provides additional limits, such as a contaminated groundwater management zone. An overlay zone is drawn over an existing zoning use map to provide extra protection.

Permits can be issued by state or local governments to allow certain activities for example, building, grading, and development that are otherwise restricted. Permits have many uses, they may be used at hazardous waste sites to restrict the construction or location of new wells, limit soil excavation at sites with contaminated subsoils, or limit the ability to alter a cap, for example.

Siting restrictions limit land use in areas that are prone to natural hazards, such as floodplains and earthquake fault lines.

State statutory ICs. Several states (for example, Iowa, Arizona, New Hampshire, and North Carolina) have created specialized easements, deed restrictions, and deed notices for brownfields and state Superfund sites.

Proprietary Controls

A **deed restriction** generally enables the prior owner to constrain the current owner's use of the land. While deed restrictions have no legal meaning, the term as used by state voluntary cleanup programs includes a broad array of private real property controls, such as restrictive covenants and equitable servitudes.

A common form of deed restriction that often appears as an institutional control is a **covenant**, which usually limits specific types of development, use, or site construction.

Reversionary interests restrict the owner to uses that are compatible with the intended future use of the site. If that restriction is violated, ownership of the site reverts to the previous owner.

An **easement** is used when a site owner transfers a limited ownership interest in the property to a recipient who "holds" the easement and who can preclude certain property uses.

[6] The ASTM subcommittee (E50.04) uses the term informational devices to describe another type of control, including notices and advisories. The term access restrictions describes controls such as fences, warning signs, or security systems. Likewise, ASTM groups permits under the heading enforcement tools. However, for the sake of simplicity, because government bodies generally control the issuance of notices, advisories, and permits and because local government is the focus of this report, this discussion will include notices, advisories, and permits under the governmental heading. (See ASTM Guidance E50.04 for more information.)

Institutional and Engineering Controls

Land use controls may be engineering controls or institutional controls. Engineering controls are physical mechanisms that contain, mitigate, or monitor residual contamination, as well as prohibit access to the property or specific area in question. Engineering controls range widely. They include sophisticated monitoring equipment linked to informational databases, containment caps, and simple fences. Institutional controls (ICs) are legal and administrative procedures designed to prevent unallowable land uses and to make public any limitations on the future uses of contaminated properties.

Types of Institutional Controls

Institutional controls can be divided into four categories: governmental controls, proprietary controls, enforcement and permit tools with IC components, and informational devices. Each type will be discussed in turn.

Governmental controls are implemented by either the local or state government, but they require coordination among both levels of government in order to be upheld. Examples include land use regulations that fall under the police powers of both local and state governments, such as zoning codes, ordinances, statutes, building permits, and other provisions designed to restrict land or resource use on a property. To restrict land use and activities in their jurisdiction, local governments may enact a variety of land use measures ranging from single-property use restrictions to comprehensive overlay zoning districts. Because such controls on land use are delegated to state and local governments, federal regulators have little oversight responsibility over their design, implementation, modification, termination, or enforcement. Governmental controls have the benefit of being overseen and maintained by a stable, established institution (a state and/or local government). However, these controls may require specific yet flexible agreements to establish how each governing body will interact and coordinate to manage ICs within its jurisdiction.

Proprietary controls are rooted in real property law. They are legal instruments such as easements and covenants, placed in the chain of title to a property. Typically, proprietary controls involve the conveyance of a property interest to a second party with the intention of restricting land or resource use in the future. An advantage offered by these controls is that they establish binding and transferable agreements on subsequent owners through the chain of title. However, because they are rooted in real property law, proprietary controls afford many personal property rights to individual property owners. These rights are based on the common law jurisdiction where specific properties are located. As such, the implementation or enforcement of proprietary controls, could become mired in litigation and cost local governments additional time and resources.

Enforcement and permit tools with IC components are land use and activity restrictions authorized under the Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA or Superfund)[4] or the Resource Conservation and Recovery Act (RCRA).[5] Such controls are not authorized by a local (or state) governmental authority. Rather, they are issued by private property managers. Although they provide for federal enforcement options, these agreements are only binding on signatories and do not transfer to future property owners with subsequent property transactions.

Informational devices provide notification that residual contamination exists in some form on a property. Examples of informational devices include state registries of contaminated properties, deed notices, and public advisories. These devices are generally used as a secondary means of notifying the public and interested parties of onsite contamination and existing land use controls or activity restrictions.

Maintaining Land Use Controls

Land use controls, if maintained over time, protect human health and the environment, encourage economic development, and streamline the cleanup and redevelopment of contaminated properties. The primary ingredients in this process are as follows:

- Design and implementation;
- Stakeholder coordination;
- Information management;
- Enforcement; and
- Funding.

Design and Implementation

Designing and implementing land use controls requires careful analysis of the property in question. Items to consider include the amount of contamination present, proposed redevelopment plans, the amount of cleanup required for such development, the neighborhoods in the vicinity, and how future activities at or near the property will be protected by LUCs.

[4] CERCLA sections 104 and 106(a) allow Unilateral Administrative Orders and Administrative Orders on Consent to be issued to compel a property owner to limit specific activities at federal and private sites. Additionally, CERCLA section 122(d) allows for the negotiation of Consent Decrees at private sites.

[5] RCRA sections 3004(a), 3004(u) and (v), 3008(h), and 7003 authorize permits and condition and/or issue orders that are enforceable by the U.S. Environmental Protection Agency.

Designing and Implementing Simple and Effective Controls

The wording of land use controls should be simple and specific. Details concerning, for example, use restrictions, monitoring requirements, and enforcement and response triggers, should be included to eliminate or reduce ambiguous and vague terminology. When implemented, land use controls should successfully blend community and revitalization goals.

Local governments can improve their own implementation strategies by learning from other municipalities that have incorporated LUCs in revitalization initiatives. Working with state attorneys and environmental officials will clarify the administrative and environmental aspects of state and federal statutes and regulations. In addition, professional associations serving local governments and environmental and legal groups may be able to provide guidance or offer sample documents and language. To help determine what type of controls best serve their needs, and how to craft the legal language and structure of the document, some local governments solicit the services of outside legal counsel or land use specialists.

Gauging the Suitability of Controls

Selecting and designing the "right" land use control for an intended cleanup and redevelopment plan is one step toward effective implementation. Other steps include accurately analyzing site conditions and anticipating how those conditions might change or be breached by redevelopment and future onsite activities, as well as accidents that might occur along the way. While it is impossible to accommodate all unforeseen contamination releases or discoveries, particularly in the case of natural disasters or activities that should have been prohibited by a LUC, forethought by local governments in the design and implementation phase can protect them from future liability concerns and policy revisions.

Layering Controls To Provide Multiple Safeguards

Another approach to effective implementation is "layering" land use controls. Layering refers to the use of multiple land use controls on a given property or properties to ensure redundancy and to address multiple aspects of the cleanup and redevelopment process, including specific contaminants, soil and groundwater conditions, and notification procedures for future actions. By layering multiple controls, local governments can help to ensure that if one control fails, backup controls will remain in place. For example, one layer might be environmental covenants with a robust tracking mechanism to record and track the LUCs. Another layer might be an overlay zone that restricts future uses of the property. Another way to provide multiple safeguards is to implement specific controls at different times during the life cycle of the cleanup, redevelopment, and reuse process.

Including Modification and Termination Provisions in Controls

Another important component of LUCs is a system that allows controls to be modified or terminated as time passes. For example, if environmental conditions at a property change (for example, if new areas of contamination are discovered or a natural disaster disrupts an engineered cap), it may be necessary to modify an existing restriction. Conversely, if environmental contamination is determined to no longer be a threat to human health or the environment, it may be advisable to terminate a control.

Stakeholder Coordination

Stakeholder coordination is a challenging aspect of cleaning up and redeveloping brownfields and other contaminated properties. Local governments are in ideal positions to implement and oversee land use controls within their jurisdictions. To introduce the concept of LUCs and develop or augment a program to design, implement, and maintain those controls may require the coordination of multiple departments of local government and numerous elected officials. The authority to enforce environmental regulations, is typically reserved for state regulators. Therefore, coordinating with state (and federal) government counterparts can enhance the design and implementation of LUCs, as well as encourage innovative means of enforcing and funding those controls. Finally, reaching out to nongovernmental stakeholders, including private sector enterprises and the gen-

eral public, can be useful in creating land use controls and redevelopment strategies.

Lateral Coordination

Lateral coordination refers to intragovernmental collaboration between local government departments and officials. Sound lateral coordination is based on communication among affected staff members who solicit endorsement from appropriate officials and manage tasks on a day-to-day basis. Effective communication within a local government facilitates the development of uniform practices and procedures for designing, implementing, and maintaining LUCs. It also can create awareness of tools and resources in different departments that may be synthesized or used in new ways to improve LUC management. By strengthening intergovernmental communication and soliciting endorsement from individuals such as elected officials and senior appointed officials, local governments generate buy-in for LUCs. This builds momentum and helps to ensure long-term support for redevelopment and maintenance efforts. Meetings to solicit feedback and support also are beneficial. In this way local governments uphold professional courtesy and keep multiple departments informed of emerging projects and initiatives. Finally, a LUC management strategy that involves various local government departments builds on efforts to communicate information, solicit endorsement, and synthesize resources. By creating institutional knowledge of LUC information and maintenance programs, local governments can ensure long-term oversight of controls regardless of administrative and political turnover.

Vertical Coordination

Vertical coordination refers to intergovernmental collaboration by local, state, and federal governments. It is essential for the successful, design, implementation, maintenance, and enforcement of land use controls. Like lateral coordination, vertical coordination is characterized by improved communications between government agencies and departments and sustained efforts to solicit endorsements for land use controls. State and federal policy makers are made aware of the redevelopment challenges at the local level. By reaching out to state and federal counterparts, local officials can expand their awareness of emerging policies and funding opportunities designed to promote the use of LUCs in the redevelopment process. A good way for local governments to ensure the future viability of controls is to work within state regulatory authorities when designing LUCs. Local officials' cooperation with state-level counterparts may open doors to programs, such as a state voluntary cleanup program, that can serve as models or provide financial resources for LUCs.

Involving Nongovernmental Stakeholders

Nongovernmental stakeholders can and should be included in the design and implementation process for land use controls. This helps accommodate the interests of parties that stand to be affected by LUCs. In a community developers, lenders, and neighborhood residents potentially affected by LUCs can be empowered to take responsibility for maintaining and enforcing controls. With the proper education (and possibly incentives or penalties), property owners, facility owners, and neighborhood residents can assist local government officials in monitoring and reporting the performance and breaches of land use controls.

Establishing LUC Programs

Local officials must determine what will be required in their community to establish a land use control program. Collaborative efforts may be needed to carry out daily operations with regard to implementing, administering, and overseeing LUCs. To solicit buy-in for incorporating LUCs into comprehensive redevelopment plans, local officials may find it advisable to arrange explanatory meetings with appropriate staff members, elected officials, and nongovernmental stakeholders. Coordinated strategies or training activities to facilitate cooperation among different departments for day-to-day oversight of LUCs also may be beneficial. By establishing cohesive working relationships through effective outreach, feedback solicitation, and timely follow-up with stakeholders, local officials create a land use program that is effective and can be maintained on a daily basis over the long term.

Information Management

Information management is essential ingredient for the long-term effectiveness of land use controls. Someone must record and track the controls that are in place, how they function, and where legal documents containing such information are located. Record-keeping databases that can accommodate LUC-related information need to be developed and maintained. This requires technical expertise and, perhaps, the purchase of new hardware and software. Developing programs to map or provide other graphical representations of the properties that carry land use controls (and the neighborhoods they affect) can be a costly venture. Finally, governments need a mechanism to readily disseminate such information to appropriate staff members and other authorities. At the same time the privacy of parties required to abide by land use controls must be protected. This creates the challenge of determining access to information privileges for local government officials.

Recording and Tracking Controls

In order to record and track land use controls, a local government must create a means to notify appropriate staff members of what to do and who to contact when LUCs are part of a land transaction or other development process. Sometimes it is necessary to modify existing documents and review processes, or create "flags" to alert staff members who process permit applications and other paperwork. In such a system of checks, a "flag" would suspend the application review process until the proper authorities are consulted. The use of flags and other mechanisms is not only an effective way of recording and tracking LUCs. It also ensures that the controls are not breached by future development or other activities on the property. Additionally, the "flagging" system requires only that staff members are taught to know how to react to such a prompt. They need not be closely familiar with LUCs, legal terms and procedures, or revitalization strategies.

Developing and Maintaining Databases

Electronic databases are an effective means to organize and store LUCs-related data. With electronic records, databases, and other information technologies, information sharing becomes an instantaneous process. However, the development of such a system and efforts to enter and convert existing information to an electronic format can be costly. Additionally, the capability to readily share LUC-related data (often of a legally sensitive nature), or to make it available via the Internet, calls for considerable reviews of access privileges to such information.

Incorporating Mapping Technologies

Another means of enhancing a general and strategic understanding of LUCs is to create maps and other graphical representations of the properties to which they are applied. Specifically, maps might visually display the neighborhoods, infrastructure, and natural resources affected by LUCs. Geographic information system (GIS) technologies are becoming common resources used by local governments to geographically map various aspects of municipal service delivery. While modifying existing systems to accommodate LUCs-related information may not be very expensive, the cost for a GIS or similar system may be prohibitive for small communities.

Enforcement

Enforcement of land use controls is an issue that continues to challenge local, state, and federal governments because of an inherent discrepancy between local and state authority over land use and environmental issues. Many local governments are authorized by state statutes to regulate land use through zoning and permitting powers. Local officials are most familiar with contaminated sites within their own communities and neighborhoods. State regulators and attorneys, however, are charged with executing the statutes that govern environmental protection, cleanup, and enforcement actions. As a result, the ability to enforce land use controls requires coordinated efforts by state and local officials. The appropriate legal authorities for both levels of government must be clearly established. Moreover, to be able to assume additional enforcement duties, a local government must conduct an internal assessment of staff resources and capabilities.

Establishing Legal Authority

The first point local governments must address is the establishment of enforcement authority over land use controls. Local governments are able to regulate land use decisions through zoning and building codes, but they are not usually involved in the process of selecting site remedial actions (including LUCs). These responsibilities generally fall to private parties and state regulators. Consequently, the local government role in "enforcing" LUCs may be relegated to "notifying" state authorities of breaches in LUC agreements. By carving out an enforcement role, however, local governments can enhance their ability to protect human health and the environment in their jurisdiction. This enforcement role may be subordinate to the role of state regulatory authorities, but it nevertheless can strengthen the working relationships between different levels of government as well as the local decision making and enforcement capabilities of land use controls.

Assessing Internal Capability

In addition to determining the level of enforcement authority they wish to assume, local officials must assess their capability to carry out those responsibilities. At issue are funding and staff resources and the local government's ability to create new responsibilities for staff or synthesize existing responsibilities. The political atmosphere in a community will affect local officials' "willingness" to implement LUCs that may be unpopular or difficult to enforce because of logistical or financial challenges. Officials may be unwilling to enforce land use controls violated by long-standing community institution or to jeopardize potential redevelopment opportunities. Local judges or commissions may also be reluctant to hear cases and proposals that involve land use controls. Successful enforcement requires a clear assessment of these attitudes.

Coordinating with Regulators

After determining their enforcement role, local officials need to ensure that proposed actions will comply with established legislation and environmental programs. In some cases, a local government may need to collaborate with state and federal authorities to enforce land use controls by sharing resources; in others cases, it may be necessary to outline formal jurisdictional and legal boundaries and responsibilities for government agencies. Coordinating with state and federal regulators is a way for local officials to ensure that LUCs will be enforced properly and comprehensively within established legal authorities.

Funding

Land use controls reduce the costs of cleaning up and redeveloping contaminated properties. Yet local governments facing the challenges and opportunities of implementing land use controls must generate additional revenues to pay for their maintenance on a long-term basis. Some communities have created innovative financing schemes that target responsible property owners or future users of the site to help pay for the programs needed to maintain land use controls.

Projecting Long-Term Costs

In many cases, one or several maintenance functions is overlooked when a local government designs LUCs. Cost projections for maintaining and upgrading technologies, training new staff members, and enforcing the controls are difficult to estimate, and they may be incorrect or omitted in the design process. As a result, local governments who seek to use LUCs as financial and operational incentives in the cleanup and redevelopment process can incur additional costs if the controls are designed poorly or require excessive revisions.

Maximizing Resources

Some local government land use control strategies carve out "niches" for LUC maintenance within existing agencies and programs. For example, building or park inspectors might be educated about specific activities that can and cannot occur on properties carrying LUCs. Such oversight responsibilities are then added to existing job requirements. Other strategies target federal funding opportunities provided by the U.S. Environmental Protection Agency, the U.S. Department of Housing and Urban Development, the U.S. Department of Agriculture, and other federal agencies. They fund LUCs programs or offset

the costs of controls by funding other redevelopment costs.[7]

Developing Responsibilities

Another way to fund the maintenance of land use controls is to develop a system that places financial responsibilities on persons responsible for contamination, property owners, and facility operators. By creating those funding sources, local governments can decrease their own financial burdens. They also establish a precedent for holding responsible parties and redevelopment beneficiaries accountable. In addition to imposing fees required to implement LUCs, local governments can institute fines and other penalties for noncompliance with LUC provisions.

[7] For a list of federal revenue sources that can be used to fund LUCs or offset their costs, see Chapter 3.

Chapter 3

Profiles of Peer Exchange Communities

Chautauqua County, New York

Geography:
Chautauqua County, the westernmost county in New York, is bordered to the northwest by Lake Erie and to the south, by the state of Pennsylvania.

Population:
139,750

Area:
1,069 square miles

Brownfields:
45 sites

Chautauqua County, New York

Overview

The character of Chautauqua County is shaped by its varied terrain, economy, and demographics. Glaciation carved the basin for Lake Erie and the low-lying plains along its shores, but left behind Chautauqua Lake and the more hilly topography inward from its shoreline. In addition to timber production , the county hosts a range of agricultural enterprises, including dairy, livestock, fruit, vegetable, and nursery crop cultivation. Because it forms part of the eastern shore of Lake Erie, the county also has several small-scale port facilities. It is conveniently situated between the larger ports of Buffalo, New York, and Erie, Pennsylvania. Chautauqua County is also located within a 500-mile radius of numerous U.S. and Canadian manufacturing hubs, including New York City, Syracuse, Toronto, Montreal, Pittsburgh, Philadelphia, Cleveland, Cincinnati, and Detroit. Manufacturing plants, mining and natural gas facilities, power plants, and textile mills operate in several communities in the county. Extensive rail service (Norfolk Southern, CSX, and the Western New York and Pennsylvania Railroad) and access to highways (Interstates 86 and 90) support industrial operations.

The economy and demographics of Chautauqua County reflect a blend of rural and urban influences. More than one-third of the land area is invested in agricultural pursuits, and 16 percent of the local population is employed in those ventures. More than two-thirds of the population lives in urban settings, such as the industrial centers of Jamestown and Dunkirk. These residents are employed in nonagricultural industries. In the 1920s, Chautauqua County's workforce exceeded 17,000 in more than 463 manufacturing facilities, including furniture assembly, textile production, locomotive and military assembly, and metal foundries. Currently, the average personal income of wage earners is $18,793. The county has lost approximately 3,500 jobs and 200 employers since the 1950s. Between 1990 and 1999, the local population decreased by 4,500 residents.

As a result of this exodus of jobs and residents, efforts to develop Chautauqua County are now focused on the development of industrial parks and the reclamation and reuse of failed industrial and commercial facilities. State-funded Enterprise Zones have been created. They are designated geographic areas where special incentives are offered to encourage economic development, business investment, and job creation. The zones allow for numerous property and sales tax exemptions and other benefits for economic development in Chautauqua County. Within these zones, poverty and unemployment rates reach 30 percent and 14 percent, respectively.

Today Chautauqua County wants to build on its agricultural and industrial past and maintain its rural character. The county is well known for the historical Chautauqua Institution, which continues to serve as a seasonal gathering place for progressive, intellectual thinkers and visitors. In addition to the cleanup and redevelopment of idle and contaminated properties, the county hopes to reverse years of industrial decline by promoting economic development at existing and potential industrial parks. Finally, local officials see land use controls as an essential part of their efforts to blend community and economic revitalization with environmental and public health protection.

Brownfields Program

In 1999, Chautauqua County partnered with the New York State Department of Environmental Conservation (NYSDEC) to redevelop the Chautauqua Worsted Mill/HBSA facility. This brownfields redevelopment occurred through the state voluntary cleanup program. The 100-year-old property, abandoned for more than fifteen years, posed a significant threat to public health. It had become a haven for trespassing and other illegal or unsafe activities. Environmental concerns at the site included underground pits containing toluene-soaked rags and other solvents that had leached into a storm sewer. Assessments also turned up asbestos and polychlorinated biphenyls. Redevelopment called for complete demolition and removal of on-site facilities. In addition to working with NYSDEC, the county collaborated with the U.S. Environmental Protection Agency (EPA), the county's Industrial Development Agency, and the Village of Falconer to assess and clean up the site. It was redeveloped into a 160,000 square foot industrial facility operated by Dowcraft Corporation, a manufacturer of metal office furniture. The redevelopment project also created 100 new full time jobs in the county. Since 1997, Chautauqua County has acquired and redeveloped numerous tax delinquent commercial, industrial, and residential properties (including a manufacturing facility in a residential area), restored degraded riverfront areas into county parks, and cleaned up a tire dump containing more that 200,000 scrap tires. The tires were recycled to be used as subgrade material in road improvement projects.

Currently, brownfields redevelopment activities are overseen by the Department of Public Facilities. They include forty five properties and two New York State Empire Zones, the Greater Jamestown and the Dunkirk/Sheridan. Both of these zones were recognized as target areas in an EPA Brownfields Assessment Demonstration Pilot in 2001. The $200,000 grant was used to inventory potential redevelopment sites, develop a procedure for evaluating and prioritizing such sites, conduct environmental site assessments, and perform community outreach. Day-to-day activities are administered by a single program coordinator; these activities include an annual tax delinquent property review, environmental site assessments and cleanups, and state and federal grant applications. Additionally, the program coordinator acts as the liaison for the county to all state and regional meetings related to the cleanup of brownfields and other contaminated properties.

New Dowcraft Corporation Manufacturing Facility, Chautauqua County, NY.

Redevelopment projects are selected by a process that identifies and inventories all potential redevelopment sites. A preliminary assessment is made of challenges and opportunities. Selected sites undergo phase I and II environmental site assessments and are then characterized and planned according to potential end uses. Through county-wide surveys, press releases, Internet postings, public information meetings, fact sheets, and document repositories, the county

End-Use Characterization and Planning

After phase I and II environmental site assessments, the brownfields targeted for redevelopment in Chautauqua County, New York, undergo end-use characterization and planning. etermines the best-fit cleanup and redevelopment for a specific property. Following are the steps in the end-use planning process:

- Develop and analyze remedial alternatives;
- Evaluate zoning and adjacent land uses;
- Evaluate existing infrastructure and utility availability;
- Solicit community input;
- Work with industrial development agencies and interested developers; and
- Identify potential funding sources.

solicits community input in cleanup and redevelopment activities.

Redevelopment Initiatives

Chautauqua County's primary redevelopment goals are (1) to increase employment opportunities through site remediation, redevelopment, and other activities and (2) to balance industrial development and environmental protection. Furthermore, the county is interested in using land use controls to help it attain these goals. Properties that Chautauqua County is currently targeting for cleanup and redevelopment, possibly with the application of LUCs, are listed below:

Welch Foods

Welch Foods and the National Grape Cooperative operated for more than a century at this site before turning the facility over to Chautauqua Forest Products in 1989. The facility was used until 1999 for storing and repairing equipment and metal coating. In 1999, NYSDEC removed nineteen barrels of hazardous waste, and Chautauqua County acquired the property in 2000 via tax foreclosure. Environmental assessments and a site investigation/remedial alternatives report (SI/RAR) have been completed. Local officials are now searching for funding sources and interested redevelopers. The site is located in a mixed commercial-residential area and adjacent to a light manufacturing facility. A service-related, light manufacturing end use is anticipated.

Former Welch Foods site, Chautauqua, NY

Roblin Steel

Purchased by Roblin Steel in 1969, the site had been operated by the American Locomotive Company from 1900 to 1962 as a locomotive assembly facility. After Roblin Steel ceased operations in 1987, the site sat idle until 1994, when EPA removed 700 drums of hazardous waste and pollution emission control dust. In 2001, Chautauqua County obtained the property through tax foreclosure and has been working with privately commissioned professionals to perform site assessments, apply for a New York State Bond Act Grant, and develop site plans. Once the property is remediated, local officials will consider a range of end uses, including light or heavy manufacturing, distribution and warehousing, or a rail museum.

Former Roblin Steel site, Chautauqua, NY

Ruckh Motors

A car dealership and repair facility operated at the Ruckh Motors site for nearly twenty years. The property is owned now by Pine Valley Wood Products, but the county is considering using tax foreclosure to acquire it. Preliminary environmental assessments indicated the presence

Former Ruckh Motors site, Chautauqua,

of numerous underground storage tanks (USTs) as well as tires and other dumped materials. The building is in a poor structural condition. With the assistance of the New York State Department of Environmental Correction, the county has already removed 1,300 tons of contaminated soil, and it has removed numerous tanks and equipment containing hazardous and nonhazardous compounds (fuel tanks, septic tanks, and hydraulic lifts). The site is located in an agricultural-residential area near Amish farms and communities. Local officials have imagined end uses as an artisan center or agricultural cooperative facility.

C&B Dry Cleaners

Carpenter and Bacot Dry Cleaners operated from 1936 to 1999. Its property was acquired by Chautauqua County in 2001 through tax foreclosure. Environmental assessments are still under way, but preliminary contamination concerns include subsurface exposure to chlorinated solvents (specifically perclorethylene). Following asbestos abatement, county officials are planning to demolish the existing structures onsite. Located in an evolving commercial development area, the site is being considered for retail, restaurant, or other service-related end uses.

Former C&B Dry Cleaners, Chautauqua,

LUC Topics Identified

Chautauqua County's interest in land use controls stems mainly from its desire to acquire redevelopment sites and to establish a legal means of preventing property reuses that will lead to site contamination. Peer Exchange participants identified the following list of concerns:

- Deed restrictions relating to brownfields cleanup and redevelopment
- Design and implementation of land use controls
- Long-term maintenance of land use controls
- Enforcement of land use controls

State Statutory Authority

Land use controls are not mentioned by name in the New York State Consolidated Laws, but they are authorized under sections of Chapter 50 (Real Property) of the Consolidated Laws. Specifically, Article 9, "Recording Instruments Affecting Real Property," Article 12, "Registering Title to Real Property," and Article 14, "Property Condition Disclosure in the Sale of Residential Real Property" contain clauses and language that outline the recordation and implementation of conveyances, covenants, easements, and liens, as well as the role of the state in such actions.

Furthermore, Chapter 81 (Real Property Actions and Proceedings) of the Consolidated Laws - specifically, Article 2, "General Provisions Governing Real Property Actions," and Article 20, "Enforcement of Covenants and Easements; Recovery of Damages for Breach of Covenant or Injury to Easement," - describes provisions that govern the transfer of real property and related title and deed restrictions.

Although not authorized to do so by state statute, the New York State Department of Environmental Conservation administers a voluntary cleanup program under departmental policy (6 N.Y.C.R.R. Part 375, Subpart 375-4), adopted in 1994 and revised in 1997. The program's cleanup standards are flexible, and they relate to American Society for Testing and Materials standards for groundwater and surface water contamination. Typically, the remediation standards, negotiated on a site-specific basis, depend on factors such as the amount and nature of the contaminants present, the potential for contaminants to migrate into groundwater or surface water reserves, and the potential threat to human health and the environment.

City of Louisville-Jefferson County, Kentucky

Geography:
The merged Louisville-Jefferson County Metro area is located in north-central Kentucky on the Ohio River

Population:
693,000

Area:
385 square miles

Brownfields:
Estimated 5,000 acres

City of Louisville-Jefferson County, Kentucky

Overview

Louisville, Kentucky, a city on the banks of the Ohio River, has been shaped by more than two centuries of history. At the time of its founding, Louisville was regarded as part of the "Inland Empire," a growing number of cities that rivaled the eastern seaboard communities of Baltimore, Boston, New York, and Philadelphia. Throughout the nineteenth century, riverboat traffic and trade, as well as the Portland Canal (built to bypass one of the sets of waterfalls on the Ohio River) established Louisville as a major commercial hub. Following the Civil War, Louisville continued to grow in population. By the turn of the twentieth century, it was one of the twenty largest cities in the country and a leader in trade and manufacturing in the "New South" and the entire nation.

Like many American communities, Louisville experienced a boom era during World War II and then a steady decline in its industrial base over the next half-century. The percentage of persons employed in industrial jobs in the city dropped from 40 percent in the 1960s to 20 percent by the 1980s. In addition, distressed areas in Louisville's urban-industrial core suffered a 20 percent decrease in population; residents that remained in urban neighborhoods faced poverty rates that exceeded 47 percent. Brownfields properties included former chemical, paint, fertilizer, metal plating, cigarette, and asphalt plants, as well as gas stations, auto-repair facilities, and dry cleaners. However, a rise of service industries including a UPS shipping hub and facilities at the University of Louisville created new employment and a movement toward reinvestment in downtown areas.

After receiving federal assistance in the 1990s to address urban blight through brownfields redevelopment in its disadvantaged communities, Louisville began to aggressively pursue new initiatives in economic revitalization and environmental protection. Local, state, and federal officials worked together, and citizens were engaged through the preparation of the city's Empowerment Zone application in 1996. Louisville was awarded an Enterprise Community designation.

Today, the Louisville-Jefferson County Metro Government plans to convert its idle industrial properties by attracting innovative technologies and new and expanded business enterprises. It plans to draw on the many cultural and historic resources that make the area a popular regional tourist destination as well as a good place to live. Louisville is the home of Churchill Downs and the Kentucky Derby. The Louisville Slugger baseball bat factory manufactures nearly all the bats used in Major League baseball. Implementation of a state voluntary cleanup program and proven successes in brownfields redevelopment are fostering coordination between local officials and state government counterparts. Finally, brownfields practitioners seek to integrate land use controls into their efforts to blend environmental protection with economic development in revitalization efforts.

Brownfields Program

The city of Louisville began to pursue federal assistance for brownfields redevelopment in 1995. To support their application efforts, city officials convened the Brownfields Working Group, composed of public and private stakeholders (commer-

cial and industrial realtors, community residents, bankers, local government officials, state regulators, universities, and special interest groups).

Later in 1995, the city of Louisville received a $200,000 Brownfields Assessment Demonstration Pilot grant from the U.S. Environmental Protection Agency (EPA). It also was awarded the designation of Enterprise Community (EC) by the

Louisville Extreme Park, Louisville, KY

U.S. Department of Housing and Urban Development. During the application process, community representatives identified the area of focus as eighteen of Louisville's most disadvantaged census tracts. The Brownfields Working Group not only attracted resources for brownfields redevelopment. It championed environmental justice issues in the EC and throughout metropolitan Louisville. The group helped to advocate for, and enact, the Kentucky Voluntary Environmental Remediation Program in 2001 in

Papa John's Stadium, Louisville, KY

cooperation with state regulators, legislators, environmentalists, and the Kentucky League of Cities.

Because of strong stakeholder coordination and resource leveraging, brownfields redevelopment in Louisville has been highly successful. For example, revitalization efforts at Papa John's Stadium and Waterfront Park revitalization projects earned Phoenix Awards (in 1999 and 2002, respectively) at the National Brownfields Conferences. Louisville Slugger Field, home of the Louisville Bats AAA baseball team, was included in the Phoenix Award story as another brownfields success. Slugger Field has provided an attractive sports and entertainment venue for the downtown waterfront. Originally a rail transfer station, and most recently a farm implement company, it incorporated the historic façade of the railroad building into the design of the jewel box stadium. An urban Extreme Sports Park (for skateboarding, in-line skating, and bicycling) and fourteen soccer fields on a former landfill provide public park spaces for youth and adults to enjoy athletic activities.

The former city of Louisville and Jefferson County consolidated government staff and resources in January 2003 to become the Louisville-Jefferson County Metro Government. Local officials are now attempting to build on institutional knowledge as they adapt to the new structure. The Environmental Policy Office and the Industrial Land Division of the Metropolitan Development Authority now oversee brownfields redevelopment, with the assistance of a new entity, Louisville Metro Properties. The Environmental Policy Office also provides staff to the Brownfields Working Group, coordinates with state officials to implement the voluntary cleanup law, and participates in other collaborative efforts of local and state governments. Recently, Cornerstone 2020, a new comprehensive plan for the Metro area, was adopted. It includes a revised land development code.

Redevelopment Initiatives

The Louisville-Jefferson County Metro Government's redevelopment efforts are targeting industrial and commercial properties in its downtown and industrial corridor areas, as well as

Louisville Resources

Brownfields redevelopment in Louisville, Kentucky, before and after consolidation to the Metro government in 2003, has benefited from local practitioners' ability to solicit private funding and identify technical resources. The following list describes state and federal resources leveraged for brownfields activities:

- $200,000 U.S. Environmental Protection Agency (EPA) Brownfields Assessment Demonstration Pilot. (1995)
- $75,000 to perform site assessments from the Commonwealth of Kentucky (1995)
- Designation as a U.S. Department of Housing and Urban Development Enterprise Community. (1996)
- $200,000 EPA Supplemental Funding Grant. (1998)
- $350,000 EPA Brownfields Cleanup Revolving Loan Fund Pilot. (1998) Was subsequently increased to $500,000, but was never able to be utilized.
- $120,000 from 1995 to 1997 and another $120,000 from 1998 to 2000 for technical assistance provided during two-year assignment of two EPA environmental engineers through the Intergovernmental Personnel Act.
- $350,000 EPA assessment grant for hazardous substances. (2003)

brownfields properties in or near old, residential neighborhoods. In addition to creating jobs, bringing about community and economic revitalization, and protecting public health and the environment, brownfields practitioners hope to increase the participation of the private sector in land use planning and redevelopment. The following list summarizes current and future redevelopment initiatives in the metropolitan area:

Muhammad Ali Center

The Ali Center site is located in downtown Louisville at 6th and River Road, near the riverfront and Main Street revitalization area. The historic location of a foundry and rail yards, the site most recently has been home to a seafood restaurant. A partnership with local government resulted in government providing a parking garage and garden area for the center. Once completed, the six-story center will include a boxing museum, peace education and conflict resolution areas, and athletic complexes, all dedicated to the memory of Muhammad Ali, a world-champion boxer and an advocate of peace, tolerance, and understanding among all people.

Muhammad Ali Center, Louisville, KY

Trolley Barn

Located in the city's Enterprise Community on the near west side, the Trolley Barn has a long history. Its main building dates back to the nineteenth century when it served as a storage and repair facility for public transit vehicles (mule-drawn trolleys and later electric trolleys and buses). A more recent use of the site was for a pesticide business. The city acquired the site through its Urban Renewal program. Several hot spots of PCBs were removed from the site, as were large quantities of lead paint from interior iron beams. Soils with elevated levels of lead and other metals from the museum site are to be removed to an adjacent lot and capped for parking. The facility is to be leased for an African-American Heritage Center, including a museum and community center.

Currently, the Metro government is seeking federal grant funding and other assistance to acquire sites, gain access to them, initiate Phase II environmental assessments, and pursue redevelopers who might be interested. Potential projects include the following properties:

Trolley Barn, Louisville, KY

Rhodia, Inc.

The Rhodia chemical facility is a 16.7-acre property located in the Enterprise Community in West Louisville in an old area of light and heavy industry. In the 1950s, the local government situated a federally subsidized housing cluster across the street from the industrial site. The plant, in operation from 1919 to 1993, manufactured chemicals ranging from paint and varnish to solvents and epoxys. The facility is considered the "Birthplace of Epoxy." After cleanup and redevelopment of the facility, local officials foresee industrial reuse that can bring new jobs, ancillary support jobs, needed tax revenue, and a bit of green space to the neighborhood.

Philip Morris

In 2002, the former Philip Morris cigarette manufacturing plant, which closed in 1999, conveyed to the Metro government eighteen acres in an otherwise robust commercial/industrial zone within the Enterprise Community. Phase I environmental assessments have identified aboveground storage tanks that once contained corn syrup, glue and plasticizer, glycerin, and fuel oil - compounds used in cigarette manufacturing. Additionally, local officials are aware of the presence of lead and asbestos in remaining buildings and PCBs in electrical equipment and machinery. Redevelopment plans include the construction of commercial and industrial operations that will match existing operations in the area (retail stores and light manufacturing).

Exmet of Kentucky

The 3.3-acre Exmet facility is located in the Enterprise Community, East Louisville, adjacent to a CSX rail line and near a decommissioned municipal waste incinerator. Exmet of Kentucky operated for approximately one year as a handler of fertilizer products. Cleanup focused on large concentrations of zinc oxide (4,000 tons) and corrosive solutions that included lead, cadmium, selenium, and mercury (12,000 gallons), as well as tanks that were used to store sulphuric acid. The State of Kentucky removed the chemicals and demolished buildings on the site. Title to the site was encumbered by multiple liens, but it now resides with Metro's Land Bank Authority. Local officials anticipate reusing the property for industrial activities that match existing operations in the surrounding area.

Technology Park of Greater Louisville (former Naval Ordnance Facility)

Technology Park is a 142-acre urban industrial park with about 1.5 million square feet of buildings. The former Louisville Naval Ordnance Station is located in the near South End of the Metro area. Title to the site is to be transferred from the U.S. Navy to the Louisville-Jefferson County Redevelopment Authority (Redevelopment Authority) imminently. The site is currently under lease to the Redevelopment Authority, which was formed in 1996 to oversee the park and keep as many Navy operations and jobs in Louisville as possible through privatization. Upon transfer of the title to the Redevelopment Authority, the entire facility will be under lease to Titan, a private development company selected to manage the redevelopment of the site. The Redevelopment Authority spent millions of dollars on remediating and renovating buildings for private use. The average building project takes about a year. Remediation remains to be done, and land use controls are needed. The site has prepared a Land Use Control Implementation Plan, which the Commonwealth of Kentucky has accepted, although a corrective measures study is still under way.

LUCs Topics Identified

The Louisville-Jefferson County Metro Government has significant experience working with land use controls in redevelopment efforts. They were used extensively in the cleanup and construction of Papa John's Stadium, Waterfront Park, and Louisville Slugger Field. For the stadium, the stadium itself caps a good deal of contamination left in place, and the asphalt parking lot caps the remainder. Monitoring wells continue to operate on that site. At the park, contamination was covered with a geo-textile fabric and capped with up to 12 feet of clean soils. Portions of the park are capped with a concrete plaza. The ballfield also acts as a cap to contamination left in place, and its parking lot contains berms of lightly contaminated soils covered with asphalt.

As benefits of the recently enacted voluntary cleanup program are realized, local officials believe LUCs will be essential to future, statewide redevelopment efforts. Nonetheless, local government officials are concerned about communication and coordination issues that transcend the jurisdictional lines of the local, state, and federal levels of government. Local and state officials are also concerned about the ability to develop and maintain (and transfer dated information into) a sophisticated LUC recording and tracking system. Additionally, Peer Exchange participants identified the following list of concerns:

- Intergovernmental communication and coordination across jurisdictional lines
- Bridging local planning and real estate authority with state and federal regulatory statutes
- Land use planning and zoning requirements in state of Kentucky
- Design and implementation
- Long-term maintenance
- Funding
- Enforcement
- Tracking and data management

State Statutory Authority

Kentucky is a common law, race-notice state with respect to real property law.

Chapter 100 of the Kentucky Revised Statutes, enacted 1931, provides enabling authority for local zoning.

Since 1980, Kentucky law (KRS 224.01-400) has provided for risk-based corrective action as part of emergency response legislation. Historically, the Kentucky Department of Environmental Protection has historically used restrictive covenants and various forms of deed notification in connection with risk-based cleanups where residual contamination remained on-site.

The Kentucky Voluntary Environmental Remediation Act (VERA), enacted in 2001, created a voluntary cleanup program, but the program has yet to be implemented. All of the required regulations have not been completed by the Kentucky Natural Resources and Environmental Protection Cabinet. VERA does not specifically mention land use controls. Additional legislation may be required to provide authority to the Cabinet to design, implement, and oversee such controls.

Chapter 4

The Chautauqua County and Louisville-Jefferson County Peer Exchange

Overview

The Chautauqua County and City of Louisville-Jefferson County Peer Exchange matched representatives from both communities who were interested in incorporating land use controls (LUCs) into local strategies to redevelop brownfields. Both communities were selected because of their existing brownfields program, general knowledge of LUCs, and potential for community and economic revitalization. By matching participants who worked at the county government level, the ICMA Research Team hoped to promote discussions of peers with similar perspectives. At the same time, the differences between the two communities (for example, rural and urban characteristics, demographics) were viewed as opportunities to establish meaningful exchanges by local government officials and stakeholders facing similar issues.

Chautauqua County is in a rural region of western New York on the shore of Lake Erie. Although located within several hundred miles of major port cities in the United States and Canada, the county is part of the Appalachian Region. It has a rural profile with several industrial centers. Operating with very limited financial and staff resources, Chautauqua County's brownfields program has partnered effectively with state and federal agencies to redevelop several sites. The properties were acquired through tax foreclosure. In a program with limited funding and institutional knowledge, participants were interested in how LUCs could benefit foreclosure and redevelopment strategies.

The city of Louisville and Jefferson County encompass one of the major metropolitan areas in the Commonwealth of Kentucky. Linked to the Ohio River, the city and county want to incorporate the expansive waterfront and historic buildings and districts into downtown revitalization plans. Encouraged by proven successes in using LUCs on several large commercial projects, such as a college football stadium complex, local officials sought a formal strategy and program for using land use controls in brownfields redevelopment. They also were interested in discussing how to improve coordination among stakeholders, especially state and federal government officials.

In Chautauqua County and Louisville-Jefferson County, both local governments are engaging in a unique and proactive approach to property redevelopment and LUC design, implementation, and management. Through their own voluntary efforts, and with a full understanding of financial and liability concerns, these local governments in many cases were acquiring or redeveloping (or helping redevelop) properties. Accordingly, both communities were interested in learning about the roles that land use controls could play in the process to ease their own concerns surrounding cleanup and redevelopment and to attract investors and developers to local revitalization initiatives. While other local governments may not be in the same position as the

local governments of Chautauqua County and Louisville-Jefferson County with regard to the use of LUCs, the cleanup and redevelopment of brownfields and other contaminated properties remains a viable strategy for revitalizing communities. By understanding the valuable role that land use controls can play, all local governments can improve property redevelopment options and the community, economic, and environmental quality of life in their jurisdictions.

Participants in the Peer Exchange in May, 2003, included local government representatives from Chautauqua County, New York, Louisville-Jefferson County, Kentucky, and Phoenix, Arizona, (brought in as an expert to share information with Chautauqua County and Louisville-Jefferson County), as well as state representatives from the Commonwealth of Kentucky and public and private sector participants with significant experience in designing, implementing, and maintaining land use controls. The following list provides the name and affiliations of all participants:

- Bonnie Biemer, Environmental Policy Office, Louisville-Jefferson County Metro Government
- Fred Nett, Environmental Policy Office, Louisville-Jefferson County Metro Government
- Mike Kmetz, Environmental Policy Office, Louisville-Jefferson County Metro Government
- Bruce Seigle, Municipal Sewer District, Louisville-Jefferson County Metro Government
- Ted Sauer, Louisville-Jefferson County Redevelopment Authority
- Mike Ballard, Louisville-Jefferson County Redevelopment Authority
- Anthony Hatton, Kentucky Department of Environmental Protection, Division of Waste Management
- Cheryl Ruth, Department of Public Facilities, Chautauqua County
- Donn Stoltzfus, Office of Environmental Programs, City of Phoenix
- Michael Sowinski, Environmental Information Systems, DPRA Inc.
- Joseph Schilling, Community and Economic Development Program, ICMA
- Thomas Groeneveld, Brownfields Program, ICMA

In response to the specific concerns of Peer Exchange participants, the ICMA Research Team organized discussions on the land use control themes discussed in Chapter 2:

Design and implementation;

Stakeholder coordination;

Information management;

Enforcement; and

Funding.

Synopses of those discussions, including the questions addressed, comments offered by participants, and ideas for next steps are presented in this chapter.

Design and Implementation

Designing and implementing effective land use controls can be a daunting challenge for local governments. Crafting legal terminology and protocols, anticipating future risks and land use changes, and comprehending complex scientific principles related to contamination measurement and dispersal are only a few of the issues that complicate the process. In addition to various design alternatives, local governments must consider the durability of LUCs in order to ensure that human health and the environment will be protected in the future. The long-term effectiveness of LUCs is contingent upon two critical factors. The first is the physical maintenance of all implemented controls. Local governments must monitor and maintain the integrity of the physical barriers put in place to protect the public from residual contamination. The second factor is the institutional maintenance of land use controls. Local officials need to consider the overall structure and performance of their staff and operating procedures so that the location and nature of LUCs are recorded and communicated. Officials also need to establish points of contact for notification if a control is breached.

Peer Exchange participants covered many of these issues in their discussion of the design and implementation of land use controls. Local governmental officials considered two key questions:

- What are the fundamentals of crafting effective land use controls?
- How can strategies be developed that ensure the long-term feasibility and flexibility of land use controls?

In answering these questions, Peer Exchange participants discussed the fundamentals of the design and implementation of LUCs, how to select and design the right controls, and ways to make land use controls more attractive to hesitant elected officials and property developers.

Fundamentals of Design and Implementation

The fundamentals of designing and implementing effective land use controls are likely to elicit differing opinions among stakeholders. For example, common issues of debate include who needs to be involved in the design and implementation process, when those stakeholders need to be involved, who will monitor and enforce the controls, and how funding resources will be raised and perpetuated to ensure long-term maintenance. In addition to these considerations (discussed in detail later in this chapter), Peer Exchange participants identified seven fundamentals that all local governments, as potential regulating authorities or implementing parties of such controls, should understand:[8]

Basis of legal authority: Local officials must be familiar with state and federal statutes governing LUCs before designing them. This will help ensure that local controls comply with the law and are viable. By investigating relevant state and federal policies, officials gain an awareness of examples of legal language and structure that apply to LUC design and implementation.

Transferability: Land use controls must be designed to "run with the land" to ensure that future property owners, operators, or residents are beholden to land use restrictions. Those who design and implement LUCs should establish the transferability of liability as well as responsibility for maintaining controls.

Resources: Consideration of the funding and staff resources required to implement and maintain LUCs well into the future is another critical factor in the initial design of controls. Anticipating the future availability of revenue and staffing - or the need to develop means to increase either component - is important. By thinking through these issues, local officials can better determine what controls are most appropriate or whether LUCs will be feasible at all. Comparing the "life-cycle" costs of implementing and maintaining LUCs (running in perpetuity or for a designated time period), to the costs of cleaning a site to unrestricted use standards is an essential yet often overlooked step. The goal is to project the future funding requirements LUCs may impose on local governments.

Standard measurements: Recognizing the appropriate standards to determine "safe" levels of residual contamination, as well as the extent to which controls should create buffers to protect human health and the environment, may be the most important responsibility of local governments, regardless of their specific role (regulator, property owner, or redeveloper). Local officials must understand the specific details and larger implications of human health and environmental standards upheld by LUCs. Most standards are typically preset by state and federal statutes, and they are based on standards for remediation of soil, groundwater, and surface water contamination published by the American Society of Testing and Materials.

Risks: When designing LUCs, local governments must consider (a) the risks to human health and the environment posed by the site and (b) the specific risk to be mitigated by controls. The former refers to the environmental and public health risks that could occur if a LUC fails; the latter refers to how to address the specific source and exposure pathways of such risks and what mechanism will best mitigate against potential harm. Because they are inherently linked, both considerations are important in the design and implementation of effective land use controls.

[8] In many cases, local governments are not party to the selection and design of land use controls because those decisions are often made by property owners and state regulators. However, as local governments take on enforcement roles or acquire properties themselves to facilitate redevelopment, they will benefit from a familiarity with the general principles of LUC design and implementation.

Using existing tools: Particularly in communities facing economic hardships, local officials must maximize (or innovate new uses of) existing legal mechanisms, hardware and software infrastructure, and staff expertise when designing and implementing land use controls. Although the legal language and structure of actual LUCs may not leave room for creative approaches, the ability to stretch municipal resources or synthesize existing programs to meet new LUCs-related challenges may require innovative solutions.

Defining the scope of notice: "Who needs to know?" and "How much do they need to know?" The answers to these common questions affect the level of access to potentially sensitive environmental and legal information. When designing and implementing land use controls, and overall maintenance plans and programs, local officials must consider the level of access available to persons inside and outside of government, as well as how that information will be managed.

How to Select and Design the Controls

Selecting the controls that are best suited to document the residual contamination and use restrictions at a given property will ultimately determine the effectiveness of the controls themselves, as well as the feasibility of incorporating LUCs into comprehensive cleanup and redevelopment strategies. Land use controls not only must be suited to the needs of the current property owner, they must be suited also to the anticipated use of the property after cleanup and redevelopment. The right combination of controls means creating reasonable controls that are best-suited to encourage redevelopment while safeguarding public health and the environment. Additionally, by implementing multiple LUCs or "layering" LUCs, local governments can create overlap and redundancy in the mechanisms that help to prevent exposure to contaminants.

Types of Controls

Following are different kinds of LUCs (discussed in Chapter 2) for local governments to consider in the cleanup and redevelopment process:

- Private/proprietary controls: Based in real property law, these LUCs can include legal mechanisms, such as easements and covenants, placed in the chain of title to a property.
- Public/governmental controls: Usually implemented and enforced by a state or local government, these LUCs can include zoning restrictions, ordinances, statutes, building permits, or other provisions that restrict land or resource use at a property.
- Enforceable agreements: Restrictive agreements that are binding on signatories but do not transfer with a property transaction.

Advantages of Blending Public and Private Controls

Peer Exchange participants agreed that blending public and private controls creates an ideal implementation scenario. From the private standpoint, property owners and operators are empowered by their voluntary commitment to monitor and maintain LUCs. From the public standpoint, an unbiased institution is charged with monitoring activities as well as deciding the necessary course of action should the private parties fail to uphold their responsibilities. The following hypothetical case illustrates such a public-private LUC arrangement:

A private property owner agrees to construct and maintain an engineered cap. He prevents onsite digging in specified areas, and hydrates the cap to ensure its long-term viability. He also records data from various monitoring stations within the cap. A local public works department is charged with the responsibility of recording the LUC, performing regular inspections of the property, the cap, and activities related to subsequent redevelopment. In addition, the public works department monitors applications for permits and variances that apply to the property to ensure that any controls are not affected by future activities. The public entity is required to notify appropriate authorities (typically of a higher jurisdiction, such as state or federal environmental regulators) if the LUC is compromised and results in a threat to public health and the environment, requiring an immediate cleanup or enforcement action.

The key to this approach is coordination among appropriate public and private stakeholders early on and throughout the design, imple-

mentation, and maintenance process. Finally, by establishing relationships with state and federal regulators, and understanding the statutory requirements that govern local land use, hazardous waste cleanup and containment, environmental remediation, and real property redevelopment, local decision makers will be more likely to select the best-suited land use controls at any given property.

Guiding Reuse with Land Use

Peer Exchange participants discussed the possibility of creating land use controls that would prevent property reuse that might produce environmental contamination — the very reason environmental remediation and land use restrictions were imposed in the first place. Participants engaged in a lively discussion of the positive and negative ramifications of a policy (designated "zoning by covenant") that would dictate private property reuse. Participants acknowledged the benefits of an approach that could decrease the potential for "re-contamination" of a remediated and redeveloped property. They objected, however, to an approach that seemingly prejudged a potential property developer or operator according to zoning categories. In other words, the suspicion that an industrial operator is more likely to create contamination on a property - by nature of site operations and materials used - than another type of operator could be described as a biased opinion. Participants also discussed that while "zoning by covenant" practices are acceptable in private-to-private land transactions and agreements, they would not be included in the existing spectrum of LUCs. These issues fall under the jurisdiction of real property law as established in a particular state or territory.

How to Design More Attractive Controls

Creating interest in redeveloping properties with real or perceived contamination is challenging; attempting to revitalize properties with known residual contamination requires an entirely different set of liability, political, and safety considerations. To address the liability concerns of potential developers and investors, and to win support from other elected and appointed officials and the general public, local governments must market land use controls as a positive way to streamline the cleanup and redevelopment of contaminated properties. Redevelopment practitioners should weigh the long-term costs of maintaining LUCs against the expenses required to clean properties to unrestricted use standards. Another hurdle can be working with property owners who do not want to sign a permanent recordation of on-site contamination due to concerns about future liabilities.

Following Voluntary Cleanup Programs

Peer Exchange participants agreed that state voluntary cleanup programs (VCPs) provide an excellent starting point for the negotiation of land transactions complicated by particularly challenging environmental considerations. In most cases, VCPs create liability assurances and financial incentives for property owners who are not responsible for on-site contamination after specified remediation requirements are met. Land use controls are often part of voluntary cleanup actions and may be recorded in state documents and covenants (including No Further Action letters, Certificates of Completion, and Covenants not to Sue). Redevelopment practitioners, if they are familiar with state VCP programs may be able to steer interested and reluctant property owners toward such options. In other cases, local officials may be able to work with VCP administrators when the program is being designed, implemented, or modified. For example, the Louisville-Jefferson County Brownfields Committee worked closely with the Natural Resources and Environmental Protection Cabinet (NREPC) and other regulatory agencies to develop and help implement the Voluntary Environmental Remediation Act, which established the voluntary cleanup program in the Commonwealth of Kentucky. In theory, local-state collaboration could translate to LUCs so that liability assurances and financial incentives to all potentially involved parties are upheld.

Voluntary Cleanup Programs

Voluntary cleanup programs (VCPs) allow voluntary parties, such as site owners or developers, to approach state governments and initiate environmental cleanups on their own. These programs are cooperative in nature. They provide incentives to voluntary parties rather than rely on enforcement orders to accomplish remediation.

Incentives to participate differ from state to state, but VCPs have a number of common features. Incentives typically include 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. Additionally, land use controls can be implemented (or may be required) as part of remediation plans, records of decision, and state-endorsed liability assurances.

The assurances are often issued as a No Further Action certificate or Certificates of Completion. They acknowledge that contaminated properties have been treated to levels consistent with VCP standards-usually based on the future uses of that particular site. In other cases, legal contracts in the forms of Covenants Not to Sue are issued to protect site owners and developers against future liabilities should unanticipated environmental hazards be discovered.

Increasing the Marketability of LUCs

Participants discussed ways to make land use controls more palatable to private and public sector representatives who may normally steer clear of legal and political thickets. Some participants suggested softening terms such as "restriction" or "control" in favor of "opportunities" or "agreements." By whatever means (increased communication, simple explanations of LUCs and revitalization initiatives, or increased stakeholder involvement and coordination), local officials should market the cleanup and redevelopment process in an open and positive light to gain momentum and achieve success.

Stakeholder Coordination

Stakeholders in cleaning up and redeveloping brownfields have differing interests, agendas, and ideologies. Local, state, regional, and federal agencies, as well as private sector development and lending corporations, special interest organizations, community groups, and the general public comprise the cast of players. All of these stakeholders have vested (and often conflicting) interests in the community. If they make compromises during the negotiation process, a strategy tailored to satisfy the entire community can be worked out. Efforts to derive a system for designing, implementing, and maintaining land use controls must meld the interests of all contributing stakeholders or at least culminate in the most representative course of action. Stakeholder coordination also decreases single-minded approaches and identifies gaps where redevelopment practitioners can work together to solve problems in a proactive manner.

Redevelopment practitioners must consider these questions related to coordination of stakeholders:

- Who needs to be included in the design, implementation, and long-term maintenance of land use controls?
- How can stakeholders be brought together to accomplish those goals?
- What is necessary to establish a long term LUC strategy versus day-to-day responsibilities?

In response to these questions, Peer Exchange participants discussed lateral coordination of local government partners, vertical coordination between local, state, and federal government partners, and the involvement of the private sector and general public in the design, implementation, and maintenance of land use controls.

Lateral Coordination

Lateral coordination refers to intragovernmental coordination: local government departments work together to achieve consensus-based management. The design, implementation, and maintenance of land use controls, like other initiatives, present opportunities for collaboration by depart-

ments of local government. Because of their environmental, public health, and liability ramifications, land use controls can be intimidating and controversial components of local land use and revitalization efforts. On the other hand, LUCs present innovative means to put idle properties back into productive use while protecting public health and the environment — objectives of every local government.

Communicating in Local Departments

Peer Exchange participants acknowledged the need for effective communication across local government departments for everyday operations and especially when tackling new programs and initiatives, such as land use controls. The first step in this process is convening the appropriate members of various departments. In addition to Brownfields Program staff (or those involved in brownfields issues in the absence of a formal program), Peer Exchange participants suggested inviting members of the Planning, Permitting and Inspecting, Recording, Public Works, Waste Removal, Economic Development, and Redevelopment departments and authorities. Involving representatives from these local departments and possibly others at the beginning of LUC planning can be a means of soliciting valuable feedback on how to design appropriate controls as well as implement and maintain them. If necessary, task forces like the Louisville-Jefferson County Brownfields Working Group can be created to discuss and weigh such decisions. The ability to harness creative tension among agencies with different stances can go a long way toward developing land use controls that reflect the goals of the local government as a whole. Participants also stressed that internal outreach efforts can take the pressure off of a single department or (in the case of small local governments like Chautauqua County) a single staff member who may be investigating the implementation of LUCs in revitalization efforts. Teleconferencing, Web casts, and meetings facilitated by professionals can foster meaningful dialogue among local government stakeholders.

Soliciting Endorsement

Soliciting endorsement for incorporating LUCs into revitalization initiatives requires the same coordinated efforts as good internal communications. Often elected and appointed officials and other local government decision makers are skeptical of land use controls because of assumed liability, human health, and environmental risks. The ability to effectively communicate the financial and logistical advantages of LUCs helps to create buy-in from pivotal local government authorities. Peer Exchange participants stressed that all materials and communications must be concise, specific, and easily understood. Abstract conceptual models of long-term plans work less well. In addition, participants suggested that finding a "pilot" project property or examples of successes from other communities can help to sway the opinion of reluctant decision makers. Such a pilot should be one that can be successfully remediated and redeveloped using land use controls. Both

Former Chautauqua Worsted Mill/HBSA Facility, Falconer, NY.

Chautauqua County and Louisville-Jefferson County have realized redevelopment successes in their communities with pilot projects. Examples include the Chautauqua Worsted Mill/HBSA facility (which required extensive coordination with the New York State Department of Environmental Conservation) and Papa John's Louisville Cardinal Stadium (which included substantial use of LUCs). Local officials must capitalize on pilot projects to capture momentum for the implementation of land use controls and larger revitalization goals.

LUCs as a Catalyst for Redevelopment Success

Papa John's Louisville Cardinal Stadium at the University of Louisville stands atop what was a ninety-two-acre railroad yard. The railyard presented many environmental and financial obstacles to large-scale redevelopment. Instead of removing several million gallons of diesel fuel and other suspended petroleum products in the soil, Louisville-Jefferson County officials chose to tackle those challenges by designing and implementing land use controls. The stadium itself caps a good deal of contamination left in place by the railyards, and the asphalt parking lot caps the remainder. Monitoring wells continue to operate on that site.

In addition to creating a catalyst for redevelopment success (producing millions of dollars in annual revenues for the university and the city), the project provided jobs, a home for football administration and practice facilities, and an entertainment venue for students and residents. It gave alumni and the community a sense of pride in what before was only a brownfields property. The project earned national recognition in 1999 with a Phoenix Award at the National Brownfields Conference.

Managing Program Tasks

Coordination is essential not only for establishing strategies to implement land use controls but also for managing the day-to-day activities required to maintain them. Peer Exchange participants acknowledged the importance of involving appropriate staff members in the earliest phases of design and implementation involving LUCs. Additionally, the general education required to make others aware of how LUCs will be recorded and tracked, what new hardware and software may be used, and what local staff should do when confronted with a procedure, such as a permit application, for example, for a property subject to land use controls, must be coordinated to ensure effective management of LUCs.

Vertical Coordination

As noted earlier, the coordination of stakeholders can be lateral (intergovernmental coordination). Vertical coordination refers to the collaborative efforts of state and federal counterparts (the regulatory experts and compliance and enforcement officials) to ensure that land use controls comply with governing statutes and established enforcement procedures. By engaging state and federal officials or modeling LUC documents and programs after existing legislation, redevelopment practitioners can prevent legal discrepancies that would require future modification. Vertical coordination enhances the establishment of LUC authority in local jurisdictions. It also can help to establish relationships between local land use regulators and environmental enforcement authorities at the state and federal levels. Moreover, it is improves the likelihood of continued collaboration if breaches or inconsistencies in land uses arise in the future. By researching state and federal regulations, stakeholders can open the door to funding and technical assistance opportunities.

Peer Exchange participants suggested inviting state officials to participate in LUC task forces. In this case, state environmental regulators, state attorneys, natural resource authorities, and economic development agencies would be coordinating their efforts. In Chautauqua County, local officials communicate with specific site managers who answer to NYSDEC regarding land use, cleanup, and redevelopment decisions. Incorporating these and other means of coordination during planning and implementation can contribute to effective land use controls.

Participants also stressed that providing specific feedback to state authorities on existing policies and procedures can enhance LUC design and implementation efforts. In rural Chautauqua County, face-to-face meetings with state officials and written correspondence with them provide valuable opportunities to educate these officials about local concerns. Effective lobbying can lead to the revision of state policies governing assessment and reporting requirements. In fact, standardized forms for environmental assessment and reporting forms to include land use controls could be modified to include land use controls. This, in turn, could enhance local and state efforts to

Finding a Program Champion

An invaluable asset to revitalization initiatives, (including the design, implementation, maintenance of land use controls), is a staff member or noteworthy citizen who can coordinate stakeholders and create enthusiasm for brownfields redevelopment throughout the community. Such a person is often referred to as a program champion. He or she assembles the necessary components of community revitalization and delegates responsibilities to appropriate stakeholders. As a result, efforts to incorporate LUCs into revitalization initiatives draw upon the support of the community, which gains ownership of the project.

A program champion who coordinates the multiple aspects of redevelopment (cleanup, public health, infrastructure, education, community and economic development, and LUC design, implementation, and maintenance) is able to realize better results than someone who assumes coordination will happen on its own. Local agencies and groups have different expertise and different resources to share. Coordination requires effective communication and logistical planning. In addition to organizational skills, the program champion must possess the personal qualities of a leader to whom others can look for inspiration in achieving the goals of community redevelopment and maintenance of land use controls over time. He or she must be able to rally support for the program's overall vision and maintain the morale of redevelopment stakeholders. Federal, state, regional, and local revitalization programs with the greatest success often point to one individual or a small group of individuals who champion and coordinate efforts.

inventory properties that carry LUCs or could be targeted to include LUCs. Finally, participants agreed that federal leverage could be used if local-state conversations lapsed or negotiations reached an impasse. With increased emphasis on LUCs as part of remedy selections - stemming from CERCLA and bolstered by funding provisions in the Brownfields Law - federal agencies have new opportunities to collaborate with state employees and local officials.

Coordination of Nongovernmental Stakeholders

Private sector entities and the general public, in addition to governmental agencies, can promote the use of LUCs in community revitalization efforts. Although these partners are not essential to designing, implementing, and maintaining land use controls, insights gleaned from nongovernmental stakeholders can create benefits in the enforcement and funding of LUCs and reduce misperceptions of the cleanup and revitalization process. For example, many community members may see the implementation of land use controls as risky and even exoneration for parties who caused or contributed to environmental contamination. By effectively reaching out to community members and communicating both the risks and advantages to their use in the redevelopment process, local practitioners are able to accomplish community, economic, and environmental revitalization goals.

By including nongovernmental stakeholders when designing and implementing land use controls, local officials can better gauge community views about the redevelopment of brownfields and other contaminated properties. The participation of business leaders, developers, and community groups in task forces was seen as one means of accomplishing input and buy-in. Peer Exchange participants also suggested that community meetings can be organized to explain how LUCs will work and to solicit feedback on how such mechanisms will be received by the public. These kinds of outreach efforts not only spark interest in redeveloping brownfields and other contaminated properties. They also present opportunities for discussion of ways to fund LUCs and tailor them to the needs of developers and community affected by their implementation. For example, input from citizens about redevelopment influenced the design of the Grand Lawn for the riverfront park and Extreme Sports park in Louisville-Jefferson County. Peer Exchange participants anticipated that similar benefits could be attained from community-wide discussions of where and how LUCs could be implemented.

Educating the Public

Community members needed to understand what land use controls are in place in their community and why they are in place. Meetings with nongovernmental stakeholders can create a general awareness of how land use controls operate and the reasons they must be adhered to on a daily basis. Massachusetts statutes, for example, require that information about Activity and Use Limitations be made available to local officials (including the Chief Municipal Officer, the Board of Health, and Zoning and Building Inspection officials) and the general public within thirty days of issuance.[9] Postings at restricted properties can accomplish this, but information also can be made available to concerned citizens through the Internet, through queries to local government officials, and in other ways. For example, Louisville-Jefferson County uses the "Before You Dig" program to provide community members with a hotline to contact before excavating.

Peer Exchange participants discussed these numerous methods of educating nongovernmental stakeholders about land use controls. Community outreach efforts also can empower community members to informally monitor activities at restricted properties in their midst and to report suspicious activities and violations to proper authorities. A guidance issued by the Department of Environmental Protection (DEP) in the Commonwealth of Massachusetts recommends implementation and management strategies, agreements, and documentation for properties subject to LUCs. Although not required to do so by the Massachusetts Contingency Plan, property managers and DEP (on sites that are privately monitored) are urged to enter into a contract that describes the nature and location of

Developing a Land Use Control Implementation Plan

Land use controls (LUCs) are a growing component of contaminated site cleanups in the United States. Because the cleanup of brownfields and Superfund sites to the level of unrestricted use is rare, controls ensure that future land uses remain consistent with residual contamination levels. The roles and responsibilities for implementing LUCs are documented in a land use control implementation plan (LUCIPs). These plans help to facilitate communication between parties involved in the long-term stewardship of a property or a collection of properties.

Specifically, a LUCIP serves as a bridge between state environmental regulations and local land use policies and practices. The LUCIP formalizes the jurisdictional scope, legal authority, and roles and responsibilities of the local government, state government, and other stakeholders in the long-term implementation and management of land use controls. It also establishes accountability among all parties consenting to the plan. By helping to achieve these objectives, a land use control implementation plan:

- Protects human health and the environment by minimizing exposure risks;
- Protects cleanup remedies and engineering controls; and
- Promotes economic development and community revitalization by ensuring the protectiveness of LUCs at contaminated properties.
- The LUCIP also has other functions. It can:
- Delineate a property's land use controls, including their planned duration, factors that could trigger modifications, and notification requirements;
- Identify roles and responsibilities for implementing, monitoring, reporting, and overseeing land use controls;
- Estimate the life-cycle costs and clarifies cost considerations;
- Define communication strategies and protocols among parties to the LUCIP;
- Establish approaches for data management; and
- Involve community members, beyond those with maintenance, monitoring, reporting, or oversight roles.

Stakeholder Coordination: First Steps

- Organize stakeholder meetings
- Designate committees and task forces
- Frame arguments effectively, using simple terminology and concepts rather than abstract ideals
- Emphasize more "friendly" terminology when promoting the program: "stewardship," "responsibility," "innovation," rather than "restrictions" and "controls"
- Create incentives for partners: "win-win" potential, public exposure, and awards
- Use grant application process as tool for vertical communication and coordination
- Develop formal and informal agreements among stakeholders
- Highlight existing tools that can be adapted
- Develop pilot communities
- Create list of sites with land use controls to demonstrate need for discussion

controls, how to maintain them, and how to provide adequate protection for employees and maintenance workers at the site.[10] Although ultimate responsibility for enforcement and notification is held by local governments - and state and federal partners - engaging the public to assist in the LUC monitoring process can improve local coordination and enforcement capabilities.

Information Management

An essential factor in ensuring the long-term effectiveness of land use controls is information management. Information must be recorded and tracked regarding (1) where controls are implemented geographically, (2) what contaminants that are present, and (3) what activities are restricted by the controls. Organizing a system that can readily disseminate this information to the right staff members and other authorities on a day-to-day basis (or in the case of a breach is vitally important. At the same time, local governments must balance the need to fulfill public information obligations need regarding LUCs-related data and information and the need to protect the privacy of parties beholden to controls. Finally, with geographic information systems (GIS) and other emerging technologies, local governments have the means to geographically identify and graphically record and map land use controls. This may require additional staff expertise and training, however, as well as the purchase of new hardware and software or the modification of existing systems.

Local government officials, as they consider how to record, track, and manage information related to land use controls, must consider the following questions:

- What technologies and approaches are available to record, track, and share LUC information to ensure long-term maintenance and usability of information?
- What existing and emerging technologies can enhance the process?
- How can those approaches and technologies be purchased or adapted by local governments to fit their needs?

In answering these questions, Peer Exchange participants discussed strategies for recording and tracking land use controls, developing and maintaining databases, incorporating mapping technologies, and providing staff education and training to effectively manage such information.

Recording and Tracking Controls

Land use controls, if they are not recorded and tracked, will not be viable in the long term. Unless properly maintained, the controls can figuratively and literally end up in a file cabinet. In addition to making sure that the controls are recorded properly and kept in the appropriate local government office (often the County Clerk or Recorder), local officials must track LUCs through various procedures and transactions (for example, the issuance of permits, title and deed transfers). By developing checks for LUCs when processing and reviewing land use-related applications, local governments can ensure that restrictions on prop-

[9] Massachusetts Contingency Plan {310 CMR 40.1403 (7) (a)}.

[10] Massachusetts Department of Environmental Protection Guidance on Implementing Activity and Use Limitations {WSC 99-300, § 6.6}

erties are not breached by future activities that could compromise human health and the environment. These checks alert a staff member handling the transaction to suspend the activity or to provide an appropriate point of contact for local and/or state authorities.

Revising Forms and Dissemination Procedures

Peer exchange participants suggested that the first step to improve LUC recording and tracking is to modify existing forms. Land use control checklists or sections could be added to permit or zoning variance application forms or environmental assessment forms. Applicants and reviewers, to complete the paperwork, would then be forced to determine whether or not a property was subject to land use controls. In so doing, staff members not necessarily linked to LUC planning and implementation would participate in the maintenance process and help to ensure that controls are not threatened or breached by redevelopment activities. Additionally, revising such forms helps to make the application and review process more thorough, thus minimizing future harm to public health and the environment.

Developing or updating procedures for sharing information among local and state governments can also aid in the recording and tracking of LUCs. In most cases, states are required to provide a copy of LUC documents to local governments. For example, the Arizona Department of Environmental Quality (ADEQ) provides a copy of a Declaration of Environmental Use Restriction (DEUR) to a local land use jurisdiction. (The DEUR is recorded with the County Recorder and the property owner.) After receiving the DEUR, a local government has no further obligations related to land use restrictions. Nonetheless, by integrating communication, recording, and tracking requirements, local and state authorities are able to keep one another informed of land use decisions and restrictions.

Creating "Flags" and Points of Contact

Peer Exchange participants suggested that providing "flags" to demarcate properties subject to LUCs, as well as instructions for how to proceed and who to contact when LUCs are encountered, can improve the application and review process for permits, variances, and other municipal requests. Theoretically, when a "flagged" property is discovered, the review process would stop, and staff members would be instructed where and to whom to direct inquiries. Regardless of the point of contact, such a system can help to reduce the stress of staff members by alleviating the need to make judgments that are confusing or intimidat-

LUCs in Arizona

The state of Arizona uses a restrictive covenant that runs with the chain of title for a property — the Declaration of Environmental Use Restriction (DEUR) — if corrective action includes cleanup to uses other than residential use or if corrective action incorporates an institutional or engineering control. Like many land use controls, the DEUR is administered by the state's environmental regulatory agency, the Arizona Department of Environmental Control (ADEQ). The Declaration must include a legal description of the area to be restricted, the nature of the contamination, a discussion of restricted activities, and other pertinent information. In addition, the DEUR:

- Establishes enforceability provisions to be executed by ADEQ, as well as the authority to track, inspect, and replace engineering controls as necessary;
- Requires an initial fee to be paid into a permanent fund to cover administration expenses (subsequent fees may be collected in site-specific cases, and civil penalties may be pursued by ADEQ);
- Requires property owners of DEUR sites to provide annual reports to ADEQ;
- Requires property owners of sites subject to engineering control plans to notify ADEQ prior to the sale or transfer of property (purchasers are required to comply with existing plans);
- Requires ADEQ to provide a copy of any approved DEUR to a local land use jurisdiction, without obligating such a local jurisdiction to new responsibilities.

ing. By properly arming staff members with information and delegating some responsibilities regarding local application and review processes, local officials are able to encourage an effective hierarchy for recognizing and maintaining land use controls.

Developing and Maintaining Databases

Developing and maintaining databases to record and track controls is the process of converting municipal application processes and related information into an electronic format. Once written records are converted to electronic files, the information can more easily be entered, stored, accessed, and manipulated. As a result, the planning and monitoring of land uses at affected properties greatly benefits.

Decisions must be made concerning the design of the electronic platform for such information, the parameters that may need to be added to accommodate LUC-related information, and the process for converting existing data and forms to the new system. Mirroring or linking to statewide property databases and inventories provides an effective model for database design and can facilitate communication between local and state governments. Local officials may consider how information related to LUCs will be shared, such as whether a property is privately or publicly owned, where public easements are located, where transportation or utility infrastructure is or was located, and whether or not a property falls under federal (CERCLA or RCRA) jurisdiction. Additionally, the database needs to be set up for long-term information archiving. It must be possible not only to store considerable amounts of information but also to update and modify it in response to future recording and tracking needs or technology upgrades. To maintain the database, local governments must train staff on new or updated procedures, as well as how to react and who to contact when a "flagged" property is encountered. Finally, staff members must decide how information will be shared and what levels of access to information to give different staff members and the general public.

The Platform Design and Data Conversion

Creating the actual database to store LUCs data is typically a matter of purchasing or upgrading software and achieving staff commitments to set up data parameters and enter existing records. Current information resources include property listings, environmental site assessments, and various permit and use applications. In addition to underscoring the need for more comprehensive forms for such processes, Peer Exchange participants mentioned the benefits of developing a LUCs database - or a subsidiary component to another data platform. In short, a database offers a way to consolidate new and existing environmental data. In addition to benefiting the recording, tracking, and monitoring of LUCs, such a database can effectively consolidate information and streamline daily governmental operations. Almost certainly, developing a LUCs database would require additional spending by a local government for purchasing and upgrading equipment, hiring software and programming contractors, and training (or hiring) staff members for new data entry and maintenance responsibilities.

Access Issues

Determining access privileges to LUC-related data is a particularly sensitive issue because of real property and liability implications for property owners and site operators. For this reason, local officials must first decide what relative levels of access staff members will have to such information and whether or not (or how) to make such information available to the public. Participants recognized that hierarchies similar those created for recognizing and delegating decision-making responsibilities during the review process could resolve such access issues. An emerging approach to controlling access to databases is to centralize information and create different "portals" whereby users gain access to information in relation to their decision-making authority. By creating a similar hierarchy of access among database administrators and staff members ultimately

[11] California Health and Safety Code {6.5 H.S.C. 11 § 25220 (d) and (e)}.

[12] California Health and Safety Code {6.5 H.S.C. 11 § 25220 (f)}.

responsible for land use decisions, local officials can adequately protect and appropriately share information.

When determining public access to LUC-related information, local governments must consider the privacy rights of property owners with properties subject to LUCs and the rights of affected community members. Residents have a right to know what public health and environmental hazards are in their neighborhoods. In California, for example, the California Department of Toxic Substances Control (DTSC) is required to provide notice of Land Use Covenant Agreements to the planning and building departments of cities, counties, or regional councils of governments affected by restrictions.[11] Additionally, DTSC maintains a public, online list of recorded land use restrictions and their locations.[12]

The provision of public information via the Internet is an emerging practice at all levels of government. Of particular concern to Peer Exchange participants was the liability and fiduciary nature of LUCs-related data and the possible compromise of personal privacy rights of property owners. This problem is addressed by municipalities in different ways. In the city of Phoenix general information on redevelopment programs, such as brownfields redevelopment and local land use controls, is posted on the Brownfields Land Recycling Program section of the city's Web site.[13] Users are also provided with contact information for appropriate staff members. From them users can receive limited information on a property-specific basis regarding the environmental conditions of properties (except specific information pertaining to LUCs). It was mentioned that the Arizona Department of Environmental Quality maintains an inventory of properties subject to LUCs that included the property owner as well as the type and extent of contamination. As a result, information sharing at the local level provides public access with minimal restrictions to LUCs-related data in the community. However, interaction with an experienced staff member (or online or written personal queries) is necessary to obtain more specific information.

Incorporating Mapping Technologies

Critical data related to land use controls and the properties to which they apply can be presented in a graphical format as well as recorded in an electronic database. Mapping technologies can greatly increase the ease with which LUCs are tracked. Geographic Information System (GIS) technologies provide mapping data and layered perspectives of for example, LUC-related and other environmental, demographic, and public works data. This information can be used to geographically locate LUCs, make decisions regarding the redevelopment of such properties, and plan comprehensive revitalization, monitoring, and enforcement initiatives. Local governments should consider upgrading existing equipment or purchasing new equipment to tackle electronic mapping capabilities. Additionally, the costs of training or hiring new staff members must be considered. Finally, creating the ability to share access to such technical and private information, while ensuring that only authorized users have access, is important to designing and maintaining mapping technologies.

Peer Exchange participants agreed that the ability to visually represent and geographically map the location of LUCs could help local governments win support for future redevelopment projects. Capabilities that can couple various sets of data with LUCs-related data can help prevent incompatible land uses and promote a better understanding of LUCs by staff members, decision makers, and the general public. In response to concerns raised about the resources required to develop such a program, participants from Louisville-Jefferson County mentioned that the Louisville-Jefferson County Information Consortium (LOJIC) database could be modified to accommodate LUCs data in addition to the existing environmental and public works information.

Enforcement

Enforcing land use controls is a thorny issue that continues to challenge redevelopment practition-

[13] For more information, visit http://phoenix.gov/BROWNFLD/brownfld.html.

The Louisville-Jefferson County Information Consortium

The Louisville-Jefferson County Information Consortium (LOJIC) represents a multi-agency effort to build and maintain comprehensive geographic information system (GIS) applications to serve Louisville and Jefferson County, Kentucky. Participants in the Consortium include the City of Louisville, Jefferson County, Louisville and Jefferson County Metropolitan Sewer District (MSD), the Property Valuation Administrator (PVA), and the Louisville Water Company. Development and implementation efforts are administered by twelve staff members, costs are shared among all participating local agencies.

LOJIC emerged from an MSD-commissioned study in 1985 to determine the feasibility and cost-effectiveness of developing comprehensive GIS technology for Jefferson County. The feasibility study focused on mapping and related data needs of various organizations; a conceptual computer system design; system costs and benefits; and methods of financing and cost allocation. As a result of the feasibility study, MSD took the lead in implementing the Consortium and solicited participation from local public agencies and utilities as early as possible. Formal lease/purchase agreements now exist between MSD, City of Louisville, Jefferson County, PVA, and the Louisville Water Company as full partners in the development of the Louisville-Jefferson County Information Consortium.

The LOJIC Wide Area Network connections include:

- MSD (Planning/Development, Stormwater Management, Engineering Records, Industrial Waste, Revenue, Customer Service, Information Technology);
- City of Louisville (Public Works, Maintenance, Solid Waste Management, Inspections/Permits/Licenses, City Police, City Fire Department, Health Department, Metro Parks, Development Authority);
- Jefferson County (Public Works, Planning Commission, Code Enforcement, Board of Elections, County Police, Air Pollution Control, Health Department, Disaster & Emergency Services); and
- PVA (Property Mapping, Residential/Commercial Assessment) and the Louisville Water Company.

The development and implementation of LOJIC has progressed and gained momentum as a source of reliable geographic information for all of Jefferson County. More importantly, LOJIC is an excellent example of cooperation, communication, and coordination among public agencies and utilities in an attempt to develop a shared GIS to the benefit of the community as a whole.

Information in this sidebar was adapted from: "What is LOJIC?" Available at http://www.lojic.org/about/index.htm. July 17, 2003.

ers at the local, state, and federal levels of government. From a legal standpoint, enforcement involves a discrepancy between state and local governmental jurisdiction over land use and environmental issues. Local governments are charged with land use regulation through zoning and permitting authority, and they are familiar with contaminated sites within their communities and neighborhoods. Local officials also have the greatest familiarity with their constituents and the community's perception of revitalization efforts. State regulators and attorneys, on the other hand, are charged with executing the statutes that govern environmental protection, cleanup, and enforcement actions. These officials are often located in the state capital and they are not necessarily familiar with land use issues at the local level. As a result of these divisions of responsibility and expertise, enforcement of land use controls requires a coordinated effort by state and local officials.

These and other issues related to enforcement are addressed in the following questions:

- Are land use controls actually enforceable, and to what degree can local governments, when executing and monitoring LUCs, assume enforcement responsibilities?
- Does a local government have legal authority to "enforce" LUCs, or is it limited to "oversight"?
- How can LUCs be written to clarify enforcement roles and expectations?
- What other local powers might be enforced to help strengthen land use controls?
- What actions or breaches would "trigger" enforcement actions?

Information Management: First Steps

- Purchase or upgrade necessary hardware and software for database and mapping requirements
- Design or adapt existing databases to accommodate land use control data
- Determine roles and access privileges of administrators
- Determine access privileges of local government staff and nongovernmental parties
- Integrate County Clerk and Recorder during all phases of development and implementation

- How can enforcement be better coordinated between state and local governments?

In answering these questions Peer Exchange participants discussed establishing the necessary legal authority for LUC enforcement, assessing the internal capability of a local government to enforce controls, and ways in which local officials and state and federal regulators can work together.

Establishing Legal Authority for Enforcement of Land Use Controls

In order to establish legal authority to enforce land use controls, local governments must identify what state and federal statutes apply to contamination, land use, cleanup, and enforcement relating to the property in question. Additionally, local officials need to investigate whether or not a property is undergoing cleanup and redevelopment under state-sanctioned programs, such as a voluntary cleanup program, that may raise jurisdictional questions. General information concerning whether the local or state government maintains jurisdiction over current and future activities at the site can be discovered with legal research and preliminary environmental site assessments. For more pointed jurisdictional and legislative questions, local officials can consult appropriate state and federal regulators.

Identify Existing Powers

Peer Exchange participants discussed how existing local government land use authorities such as permitting and zoning could be used as a basis for establishing LUC enforceability. For example, restrictions placed on any redeveloped property would need to coincide with the overall zoning for a parcel or an overlay created for a designated area of land. By extending existing zoning inspection, permitting, and enforcement powers, local governments might be able to take the actions necessary to ensure that LUCs were upheld. Any dangerous or illegal activities could be restricted by including trespassing provisions in land use controls at properties undergoing planning or redevelopment. By applying trespassing (or similar) provisions at properties subject to LUCs, local governments are able to adapt existing policing duties (of building and property inspectors and police and fire department personnel) to encompass the monitoring of land use and activity restrictions. Participants considered a system whereby permits for sites subject to land use controls could be withheld, suspended, or revoked.

Determine Degree of Authority

In addition to expanding existing land use authority, local governments must collectively decide how much, if any, enforcement responsibility their staff members would be qualified to accept or feel comfortable accepting. Despite their familiarity with properties restricted by LUCs, local government officials may not wish to take on responsibilities often delegated to state and federal officials. Limited resources, lack of experience, and staffing shortages are some of the reasons. In other situations, a local government might seek to take a more active enforcement role but lack the jurisdiction to do so under state law. A good starting point for determining a local government's relative degree of enforcement authority is through early and proactive coordination with state and federal counterparts. For example, the Arizona Department of Environmental Quality retains tracking, inspection, and enforcement authority over engineering controls when necessary. However, ADEQ does not have any enforcement

authority over institutional controls. Such a situation provides an excellent opportunity for state and local governments to collaborate and determine if an agreement can be reached so that institutional controls can be enforced by the best-suited authority (presumably the local government) with jurisdiction over the LUC in question. Through such negotiations, informal or formal agreements may be devised to assign specific oversight and enforcement duties to appropriate governmental authorities.

Develop Guidelines for Reporting and Enforcing

In order to carry out enforcement actions, local governments must devise clear procedures for enforcing land use controls and reporting violations to the proper authorities when those activities are beyond their own jurisdiction. In the state of California, Land Use Covenant Agreements must be recorded in the county where the property is located.[14] Property owners are required to provide a copy of such controls to the Department of Toxic Substances Control.[15] Peer Exchange participants recommended that a clear set of "triggers" for action and a "chain of command" for notification of proper authorities inside and outside of local government. Additionally, these guidelines need to be clearly articulated to property owners, operators, and surrounding neighbors, as well as made available to the general public. Beyond general property location and activity restrictions, Massachusetts statutes require that Activity and Use Limitations contain clauses to ensure that restrictions are referenced in all future property interest instruments and that potential changes in land use are checked for consistency with specified limitations.[16] This sort of trigger and notification system would also require coordinated planning among public and private stakeholders and, possibly, the general public.

Assessing Internal Enforcement Capability

Before a local government can develop an enforcement authority, program, or collaborative agreement, staff members must first assess their internal capability to execute such actions. Time, labor, and financial resources are required to actively monitor and enforce land use controls. Staff members will also need to be trained to take on new responsibilities. Oversight of day-to-day activities may be beyond the scope of a local government's enforcement capability. An essential step in this process of assessing internal capability is to project funding estimates and secure the necessary resources for setting up and carrying out enforcement activities.[17] In other cases, local officials must consider the "willingness" of local authorities to report and act on violations of restricted activities on private property, as well as zoning judges' readiness to accept such cases.

Inventory and Synthesize Responsibilities of Local Officials

As mentioned, the ability to oversee activities (including redevelopment, subdivisions, and infrastructure improvements) on private properties is a challenging task for a local government. It can secure access authority to a single or multiple parcels affected by LUCs. But, it is unrealistic to think that all such sites can be properly overseen at all times. Nonetheless, as Peer Exchange participants stressed, it is important to start somewhere. Participants suggested that new, LUC-related inspection or policing duties could be added to existing local government responsibilities. It is unlikely that a separate agency will be created to monitor and enforce land use controls. Existing inspection agents could monitor LUC compliance when visiting (or in the vicinity of) a property or facility subject to restrictions. Such a process would require effective tracking of controls and notification of appropriate city departments and staff members. Inspectors would need information

[14] California Health and Safety Code {6.5 H.S.C. 11 § 25220 (d)}.

[15] California Health and Safety Code {6.5 H.S.C. 11 § 25220 (c)}.

[16] Massachusetts Contingency Plan {310 CMR 40.1403 (7) (h) and (i)}.

[17] Numerous issues related to funding land use control design, implementation, and management are discussed in the forthcoming section "Funding."

about what to look for (for example, digging below restricted depths, trees planted above caps). Adding responsibilities to often overextended local government officials is not a long term solution, but often occurs when financial and staff resources are limited. Additionally, participants favored the modification of mapping systems and records databases, such as the aforementioned LOJIC system, to include LUCs-related information.

The "Willingness" of Local Officials to Enforce Land Use Controls

For varied reasons (internal capacity, political climate, community sentiment), the enforcement of land use controls may not be seen as a popular or worthwhile use of local government resources. For example, communities aggressively pursuing revitalization and the accompanying boost in revenue may lack the impetus to report and enforce violations on profitable operations. Or, local authorities may be reluctant to take action against established community members and institutions. With regard to these points, participants reiterated the need for clearly designed and posted guidelines and consequences for failure to comply with land use controls. By making affected parties and the general public aware of existing LUCs and what is required to maintain them, local governments are better able to promote understanding and compliance. Moreover, spreading knowledge of land use controls, particularly to residents and businesses, promotes citizen monitoring and reporting. Incentives and public recognition for compliance with LUCs, such as safety awards, can improve self-monitoring by property owners and operators. Finally, if local governments encounter sustained resistance to enforce LUCs (internally) and to comply with set controls (externally), they can defer to state and federal authorities for assistance in ensuring compliance.

Coordinating with State and Federal Regulators

After determining their appropriate enforcement role, local officials need to coordinate with state and federal regulators to ensure that proposed actions will comply with established legislation and other environmental programs.[18] In some cases, a local government may need to develop a collaborative approach with state and federal authorities to enforce land use controls by sharing resources; in others, it may be necessary to outline formal jurisdictional and legal boundaries and responsibilities for all levels of government.

The enforcement of LUCs can be enhanced by creating awareness and accountability among appropriate local government agencies or departments. Peer Exchange participants suggested that designing new "checks" for permits, where flags for properties subject to LUCs would trigger a more extensive review process or the involvement of proper authorities, could assist the early phases of monitoring activities where controls are in place.

Second phase of redevelopment at Riverfront Park, Louisville, KY

By working with state and federal regulators, local officials can enhance enforcement capabilities in two ways. First, a cohesive working relationship, regardless of the specific delegation of enforcement responsibilities, can ensure that the overall structure of the local program complies with state and federal legislation. As previously mentioned, Louisville-Jefferson County and members of the Natural Resources and Environmental Protection Cabinet collaborated to develop the Kentucky Voluntary Environmental Remediation Act. This effort exemplifies coordination in the

[18] For a thorough discussion of intergovernmental coordination issues, see earlier sections on "Vertical Coordination".

Enforcement: First Steps

- Establish the roles of all players, including the liabilities and duties of responsible and potentially responsible parties.
- Assess the internal capacity of local government to enforce land use controls.
- Create or reorganize enforcement staff and departments.
- Address information management requirements.
- Establish trigger mechanisms with input from appropriate state and federal regulators.
- Draft enforcement language to clearly identify what is restricted: use or activity.
- Determine the remedy (notice, fine, litigation) will be the most effective.

development of enforcement and delegation responsibilities for land use controls.

Second, coordinating with state and federal partners helps to establish effective trigger mechanisms, points of contact, and steps to initiate enforcement actions. Recent amendments to Arizona statutes require the creation of a financial assurance mechanism (FAM) as part of engineering control plans. Following approval by the Arizona Department of Environmental Quality, maintenance and replacement responsibilities for engineering controls can be delegated to the FAM. The administrator of the FAM, therefore, is charged with upholding engineering controls on properties carrying such restrictions. In some cases, that administrator may be a local government; in others, officials may engage private administrators to develop institutional controls or other agreements that ensure that financial and enforcement plans remain viable and provide opportunities for local government oversight.

Funding

Similar to many local government initiatives, the design, implementation, and maintenance of land use controls requires financing in order to be successful. Recording, tracking, monitoring, enforcing, and managing information, as well as providing the training necessary to develop such capabilities, will also require long-term funding. In some cases, local governments may recognize these challenges when pursuing LUCs as a redevelopment tool; in others, state and federal legislation may require LUCs in remedial decisions and place unanticipated financial responsibilities on a local government. In either scenario, local governments must develop innovative strategies for allocating funding. They also need to create local financing mechanisms, as well as pursue state and federal grants and loans that pertain (directly or indirectly) to LUCs. In their discussions of funding issues, Peer Exchange participants addressed the following questions:

- What are the challenges of projecting and generating funding streams to ensure long-term maintenance of LUCs?
- How do the costs of land use controls compare with full cleanup costs?
- Who is responsible for covering the long-term costs?
- How should local government address and overcome long-term costs?

In answering these questions, Peer Exchange participants discussed the topics covered in this section: projecting the long-term costs of land use controls, maximizing existing resources, and developing responsibilities for responsible and benefiting parties for LUC design, implementation, and management.

Projecting Long-Term Costs

As indicated, land use controls are meant to act in perpetuity or at least until they are determined to be no longer necessary to protect human health and the environment. Accordingly, funding mechanisms must consider the entire "life-cycle" costs of LUCs. These costs include the labor required to design, implement, maintain, and enforce controls through a series of redevelopment events, as well as the technologies and equipment purchased to accomplish those duties. Additionally, redevelopment practitioners must anticipate potential litigation brought against property owners, operators, developers, and future landowners, all of who may dispute use restrictions or enforcement

actions related to LUCs. An important consideration for local officials is whether or not the costs of long-term LUC maintenance will eventually exceed the costs of site remediation to unrestricted use levels and who will cover those costs. While cost projections need to be as accurate as possible, the eventual funding system must be flexible to accommodate any unforeseen accidents or discoveries on the property in question or modifications to the controls.

Peer Exchange participants discussed public perceptions about the costs of land use controls as well as political and regulatory pressures on local governments when state authorities prefer total site cleanups, regardless of costs, to land use controls. Because of the political atmosphere in the Commonwealth of Kentucky, the Natural Resources and Environmental Protection Cabinet favors remediation of properties to unrestricted use levels over the use of LUCs at sites with residual contamination. While this stance makes sense for certain properties, such as residential areas or childcare facilities, effective demonstrations of how LUCs can aid in returning idle properties to productive use can persuade local and state decision makers of the advantages of using controls to facilitate redevelopment. For example, Papa John's Louisville Cardinal Stadium was a tremendous redevelopment success for the University of Louisville and the Louisville-Jefferson County metropolitan community as a whole. By strategically placing restrictive caps and paved surfaces over residual plumes of diesel fuel and suspended petroleum products, LUCs helped turn a former railyard into a community focal point of great economic and entertainment value.

Maximizing Resources

Local governments can stretch existing funding for land use controls in a variety of ways. Well-thought-out approaches are needed to maximize staff responsibilities and technical resources in addition to actual funds. In some local governments, this synthesis may call for staff taking on additional responsibilities; in others, existing systems and technologies can be modified or used in different ways. Collaborative efforts like those mentioned in earlier discussions of "Stakeholder Coordination," often are fruitful.

On strategy to maximize funding for land use controls is to pursue state and federal resources that can be applied directly to or offset the costs of implementing and maintaining LUCs. Under the Small Business Liability Relief and Brownfields Redevelopment Act of 2002, local governments may use up to 10 percent of U.S. Environmental Protection Agency (EPA) grant funding for developing brownfields programming to monitor and enforce institutional controls.[19] In addition, potential LUC costs can be offset by leveraging grants and loans intended for brownfields assessment and redevelopment, housing development, blight reduction, greenspace preservation, innovative and efficient building design, and environmental justice. For example, grants, loans, and technical assistance available for brownfields redevelopment through EPA, severe economic hardship or major public works development through the U.S. Department of Commerce, blight reduction and community development through the U.S. Department of Housing and Urban Development, cleaning up former energy generating and storage facilities through the U.S. Department of Energy, redeveloping former military installations through the U.S. Department of Defense, and rural community enhancement through the U.S. Department of Agriculture are means of indirectly creating funding resources for LUC design, implementation, and management by offsetting other costs of property cleanup and redevelopment. The following table provides examples of potential federal funding resources.

The Commonwealth of Kentucky has the power to authorize cost recovery actions for site remediation on a case-by-case basis. Similarly, the state of Wisconsin allows local governments that acquire contaminated properties to seek reimbursement for cleanup costs from potentially responsible property owners. Through these mechanisms, land use controls could be used to encourage property owners to partner with local governments (by proactively lessening potential

[19] Small Business Liability Relief and Brownfields Revitalization Act {42 U.S.C. 9604 § 211 (k) (4) (C) (ii)}.

Table 4.1 Selected Federal Resources for Brownfields Cleanup and Redevelopment

U.S. Department of Agriculture
Rural Empowerment Zone/Enterprise Community: To promote economic opportunity, sustainable community development, preference points to rural EZ/EC applications that include brownfields

Urban Resources Partnership Funding: Technical assistance to community-level projects for sustainable redevelopment in disadvantaged communities

U.S. Department of Commerce, Economic Development Administration
Planning Assistance for Economic Development Districts, Indian Tribes, and Redevelopment Areas: Planning grants to generate and retain jobs, and stimulate industrial and commercial growth

Public Works and Economic Development Facilities Program: Grants for infrastructure on brownfields

U.S. Department of Defense
Military base realignments and closures: the return of properties to local communities, and community assistance with site remediation and redevelopment

Technical brownfields assessment, consultation and service

U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy: Brownfields redevelopment as a strategy for sustainable development

Office of Environmental Management: Technical assistance in environmental cleanup and stabilization for brownfields efforts

U.S. Department of Housing and Urban Development
Community Renewal Program (RC/EZ/EC designations): Jointly administered with USDA, tax abatements and restructuring aimed at remediating and redeveloping brownfields sites and encouraging community development

Community Development Block Grants: Allocated through development authorities to address brownfields redevelopment issues in entitlement communities

U.S. Environmental Protection Agency
Assessment Grants: Up to $200,000 in funding to conduct brownfields assessments. Sites may include petroleum contamination.

Cleanup Grants: Funding for local governments, tribes, and nonprofit organizations that own the properties for the costs of cleanup; up to 10 percent can be used to monitor and enforce institutional controls.

future recovery actions) in property cleanup and redevelopment transactions.

Developing Responsibilities

Another way of funding LUC maintenance is develop a system that places financial obligations on persons responsible for contamination, as well as future property owners and operators. In so doing, local governments can decrease their own financial burdens and establish a precedent for holding responsible parties and those who benefit from redevelopment responsible for some of the costs.

Parties who cause contamination, and to a lesser degree property owners and operators after redevelopment, should be required to contribute to the costs of implementing and maintaining land use controls. Although all Peer Exchange participants agreed on this method of leveraging funding, there was some debate about over how to organize such revenue-generating mechanisms. One source of debate stemmed from the idea of a calculated up-front, one-time fee. For example, the Arizona Department of Environmental Quality collects an initial fee (set by rule) from parties entering Declaration of Environmental Use Restriction (DEUR) agreements (see sidebar in Information Management section of this chapter). Fees are placed in a permanent fund used to pay all reasonable and necessary ADEQ expenses

required to administer these restrictions. Participants saw that course of action as a flawed option because fees could not be reinstated should future costs exceed the initial payments. Additionally, participants felt as though a one-time fee could give the wrong impression: known or potentially responsible parties might think they could walk away from long-term responsibilities, believing a one-time payment was all that was required of them. ADEQ also requires subsequent fees to execute DEUR and other activities related to land use. For example, fees to establish financial assurance mechanisms and collected civil penalties are also used to fund DEUR administration.

Conclusions and Next Steps

This chapter has examined the five essential components of land use control management: design and implementation, stakeholder coordination, information management, enforcement, and funding. These components need to be addressed when revitalization strategies that incorporate LUCs are initially developed. Thus, before many local governments can tackle such a complicated issue, it may be useful to assess their relative institutional knowledge of and interest in land use controls. To initiate this process, local governments can research successful programs and strategies, call upon local government peers, organize internal staff meetings, engage other governmental and community stakeholders, and consult land use and legal professionals.

Researching Successes

As evidenced in earlier discussions, a number of states have enacted or are developing innovative means of designing, implementing, and managing land use controls. Although no document or program will work in all jurisdictions, local governments should study approaches that have been successful in other communities and adapt those strategies to fit their particular needs. An excellent starting point for incorporating LUCs into comprehensive revitalization plans is to research the successes of others.

Calling Upon Peers

In addition to researching existing policies, redevelopment practitioners can contact their counterparts in other local governments to discuss challenges and gain insights about an inherently complicated process. Beyond seeking out peers who have demonstrated knowledge in this field of expertise, local officials can attend conferences and seminars that discuss LUCs and related redevelopment issues. In this way they will meet experts and redevelopment practitioners who are facing similar challenges.

Educating Staff

By organizing one or several staff meetings to discuss LUCs and how they might be implemented, a local government can create interest, assuage concerns, and solicit endorsement from colleagues that will help manage programming on a daily basis. In addition to introducing new concepts, the meetings are an opportunity to hear feedback from a range of staff members and departments. This can enhance LUC design and eventual implementation and management processes from the earliest stages of development. Developing simple educational materials and interactive presentations are excellent means of encouraging attendance and meaningful dialogue.

Engaging Other Stakeholders

After approaching local government staff members, redevelopment practitioners can turn to members of state and federal governments, the private sector and the general public to share ideas and receive feedback from a range of perspectives. Such outreach efforts can be accomplished in targeted meetings or personal contacts.

Consulting Professionals

In addition to community stakeholders, local governments can enlist the expertise of legal, environmental, governmental, and policy professionals. These experts often have direct technical assistance to offer. In addition, they also may be able to provide research materials, Internet resources, or valuable leads to other communities tackling similar issues.

Using land use controls to enhance the cleanup and redevelopment of contaminated properties provides local governments with a number of challenges and opportunities. Although the use of engineering and institutional controls can help to streamline the cleanup process, they require ongoing maintenance and oversight to ensure that residual contamination is safely contained. While they can provide incentives and bring reluctant property holders and developers on board, LUCs also entail expenses (sometimes unanticipated) for local governments. Money, staff, and equipment are needed to manage land use and activity restrictions.

Land use controls promote community and economic revitalization. They are a valuable means of addressing the cleanup and redevelopment of properties that would otherwise remain unproductive and potentially hazardous. The challenge for local governments is to design, implement, and maintain those controls in a manner that balances community, economic, and environmental goals and protects public health and the environment.