

**Brownfields Redevelopment in Rural Massachusetts:  
Understanding the Obstacles & Identifying Opportunities for Success**

by

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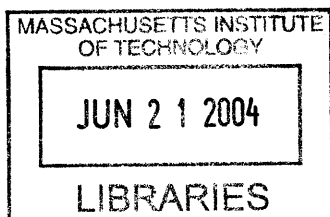
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## **ABSTRACT**

Remediating and redeveloping contaminated properties represents a mounting national concern. Commonly referred to as brownfields, these contaminated and often vacant or underused, properties present significant environmental and public health risks. Once cleaned, these properties create jobs, stimulate the tax base, preserve open space and sensitive natural resources, and protect public health. As the nation's population grows, we consume more acres per capita than ever before; as a result, the amount of unspoiled land available for development decreases. However, in rural areas the abundance of untouched land provides no incentive to redevelop brownfields. Private developers and public agencies use brownfields redevelopment as a tool for managing urban growth. In contrast, rural brownfields sites lay abandoned while valuable open space is consumed by new development. Understanding why rural brownfields are not developed more frequently is the purpose of this thesis. What are the barriers encountered by rural Massachusetts communities when cleaning or redeveloping contaminated property? Furthermore, what are the elements that have allowed some rural communities to see success in cleanup or redevelopment?

The Commonwealth of Massachusetts acts as the microcosm from which the proposed study will examine the ability of rural communities to inventory, assess, remediate, and reuse contaminated property. A case study approach was chosen to provide a means of comparing three distinct communities and their experiences. A close investigation of these three communities and the brownfields projects within them identifies the existence of brownfields in rural areas, captures the unique obstacles faced by a range of rural community types, and provides insight into how some communities overcame obstacles in the cleanup and redevelopment of rural brownfields. I argue that as a result of inherent rural characteristics, a distinct urban advantage over rural communities exists in the administration of the Massachusetts Brownfields Program. This advantage results primarily from a strained economy, limited municipal capacity, and sparse brownfields experience in rural communities. In conclusion, the thesis provides capacity-building recommendations for rural communities to encourage participation in brownfields programs.

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Title: Lecturer in Environmental Policy and Planning



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## 1.0 INTRODUCTION

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Remediating and redeveloping contaminated properties represents a mounting national concern. Commonly referred to as **brownfields**, these contaminated and often vacant or underused properties present significant environmental and public health risks. Once cleaned, these properties create jobs, stimulate the tax base, preserve open space and sensitive natural resources, and protect public health. As the nation's population grows, we consume more acres per capita than ever before; as a result, the amount of unspoiled land available for development decreases. Private developers and public agencies use brownfields redevelopment as a tool for managing urban growth. However, in rural areas the abundance of untouched land provides no incentive to redevelop brownfields. Rural brownfields sites lay abandoned while valuable open space is consumed by new development. Understanding why rural brownfields are not developed more frequently is the purpose of this thesis. What are the barriers encountered by rural Massachusetts communities when cleaning or redeveloping contaminated property? Furthermore, what are the elements that have allowed some communities to see success? I argue that a distinct urban advantage over rural communities exists in the administration of the Massachusetts Brownfields Program. This advantage results primarily from better municipal capacity and brownfields experience in densely populated urban communities.

A brownfield is defined by the Environmental Protection Agency as "Real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant." Brownfields are a bitter reminder of the nation's rich industrial past. Technological innovation and foreign competition forced the downsizing or elimination of the manufacturing, mining, chemical, and wood-products industries, to name a few. In their wake, companies left sites laden with hazardous wastes contributing to air, water, and soil pollution.

Nevertheless, brownfields are also a consequence of our current behaviors; recent federal legislation expanded the brownfields definition to include petroleum contamination often found at gas stations and auto repair shops.

Brownfields legislation is a product of federal Superfund legislation enacted two decades ago to clean the worst toxic waste sites. Modifications in the brownfields legislation over the years strive to facilitate the cleanup and reuse of the estimated 400,000 to 600,000 contaminated sites not listed on the National Priorities List. As a result, numerous state and federal agencies, including the Environmental Protection Agency, the Department of Environmental Protection, the Department of Housing and Urban Development, and the Department of Agriculture, have developed programs to support brownfields cleanup and reuse. In addition to addressing environmental site assessments and cleanup, these brownfields programs provide economic incentives in the form of grants and loans, technical assistance, and job training to promote positive economic reuses around contaminated properties.

The U.S. Environmental Protection Agency (EPA) distinguishes brownfields redevelopment from conventional development through the following characteristics (U.S. EPA 1999, 13):

- Real or perceived presence of hazardous materials or pollutants
- Unique combination of public and private initiatives
- Community participation in all levels of planning and decision making
- Human health, environmental and economic risk management
- Legal and regulatory requirements
- Environmental justice issues

The benefits of brownfields redevelopment include removal of public health hazards, job creation, economic development, increased land values, and growth management. However, brownfields sites are limited in redevelopment by financing, time, and risk. The process is complicated and lengthy; environmental remediation, permitting requirements and legal liability issues can double the typical development schedule. Furthermore, the assessment, cleanup and remediation phase increases development costs in the absence of a responsible party. Additionally, developers expect to find more contamination than perceived, thus leading to greater risk and liability (Hortense 2003).

Despite the limitations, brownfields redevelopment has proven successful, essential, and common in urban areas; its effectiveness as a tool for rural economic development is less tested. Brownfields are not a uniquely urban problem. Although it is without question that brownfields are located heavily in cities, there are many rural brownfields, especially in former mining towns and manufacturing communities in the Northeast and Midwest (Hinkley). Rural areas have a similar industrial past as urban areas. Likewise, rural communities are seeing their populations expand as growth in urban areas spreads beyond the porous metropolitan boundaries. Research in the past five years has begun to uncover the reasons behind why rural brownfields are not redeveloped more frequently.

Rural brownfields are unique because there is no pressure to develop them. Whereas urban brownfields are usually the only remaining developable parcels within a region, rural brownfields are surrounded by open space. Yet, by ignoring rural brownfields, we are overlooking a vital community asset. More than any urban site, redeveloping rural brownfields prevents the development and subsequent elimination of valued open space, as well as vital natural resources such as wetlands, forests, and farms. Furthermore, redeveloped rural brownfields can provide comparable economic and social benefits as urban brownfields.

Research demonstrates a number of reasons why rural brownfields are not redeveloped more frequently. The brownfields redevelopment process is complex and complicated. Open land in rural areas is cheap. Rural economies are not prime growth regions; there is far less demand for commercial and business development than in metropolitan regions. Few developers want to expend the extra time and money required to assess, clean, and reuse contaminated property. Furthermore, rural communities have limited local capacity. Many governments are volunteer-run and operate only a few hours per week. Finally, remote rural communities have strained access to metropolitan networks; these networks could provide valuable links to government agencies and necessary revitalization tools.

The Commonwealth of Massachusetts established a comprehensive brownfields program to encourage economic redevelopment on contaminated sites. The Brownfields Program allows developers or municipalities to clean contaminated sites according to a more realistic risk-based and future-use scenario, provides financial incentives and tax credits to developers who restore a contaminated site to a higher and better use, provides liability relief to non-responsible parties, and provides access to environmental insurance. Massachusetts' program has been used as a model for a number of other states, including Wisconsin, Pennsylvania, and New York. However, there is a constant call for reduced liability and increased financial and regulatory incentives to foster redevelopment, thus reducing pressure to develop on outlying or previously untouched land (Katcher 2000).

Massachusetts' brownfields literature expresses an urban bias; "cleanup and redevelopment is increasingly a key to revitalization of central cities and urban areas" (DEP Brownfields). According to 2003 Program Updates released by the Massachusetts Department of Environmental Protection, five to nine percent of more than 300 projects receiving financial assistance through the Massachusetts Brownfields Programs are located in rural communities of less than 10,000 persons; this represents twenty-two percent of Massachusetts land. Thus there is clear evidence that rural communities are not receiving a fair proportion of state funding and assistance. Key state actors acknowledge this fact, adding that urban areas are more often recipients of funding or technical assistance because they have the resources to initiate and undertake these complex projects.

The Commonwealth of Massachusetts acts as the microcosm from which the proposed study will examine the ability of rural communities to inventory, assess, remediate, and reuse contaminated property. A case study approach was chosen to provide a means of comparing three distinct communities and their experiences. A close investigation of these three communities and the brownfield projects within them identifies the existence of brownfields in rural areas, captures the unique obstacles faced by a range of rural

community types, and provides insight into how some communities may achieve success in the cleanup and redevelopment of rural brownfields.

The selected case studies meet certain demographic and brownfields criteria. The demographic criteria ensured that each community: fits the rural population indicators described in this research; is designated an Economically Distressed Area through the Massachusetts' Brownfields Program; and, represents a unique range of Massachusetts communities. Additionally, the selected case studies represent three distinct phases in the brownfields process; Middlefield is trying to initiate an assessment, Adams is in mid-cleanup, and Colrain has a completed cleanup. Through interviews, background research, and site visits, the research was designed to assess the awareness, capacity, and willingness of each community to access state and federal brownfields resources. Specifically, it evaluates the current capacity of local governments, their knowledge and understanding of brownfields redevelopment, the condition of the local economy, and the level of support provided by outside private consultants or government agencies.

Very little literature has explored rural brownfields redevelopment in the size of communities discussed in this report. The National Association of Development Organizations and the International City/County Management Association use a population of 50,000 persons as the rural threshold. The Environmental Protection Agency's rural limit is 100,000 persons. Focusing on communities of less than 10,000 persons and less than 500 persons per square mile reaches a unique core of small communities that represent rural Massachusetts.

Massachusetts' thirteen Regional Planning Agencies were questioned to hone in on projects of interest within the 351 Massachusetts communities. Conversations with administrators of the Cape Cod Commission, the Martha's Vineyard Commission, and the Nantucket Planning and Economic Development Commission led me to conclude that these regions do not have substantial brownfields activity at this time and thus eliminated 23 communities from the sample population. However eliminating from the case study

selection process does not preclude these communities from participating in the research. Early findings in conversations with these agencies support my presumption that many smaller communities are not aware of the benefits of brownfields cleanup and redevelopment policy. For example, the representative of the Nantucket Planning and Economic Development Commission was unaware that boat yards and gas stations fit the 2002 federal definition of a brownfield. In light of these findings, these three regional agencies become the audience to whom my thesis speaks.

This thesis is organized into seven chapters. After this introduction, the initial three chapters summarize the background for the thesis. Chapter 2.0 asks question, “What is Rural?” This question is essential for understanding the definition and distinctive characteristics of rural communities; these two factors provide insight into how planning and policymaking occur in rural communities. Chapter 3.0 provides an overview of the Federal and State brownfields legislative history, with specific attention to Massachusetts’ often-lauded Brownfields Programs. Chapter 4.0 builds on the previous two chapters to demonstrate the existence of brownfields in rural communities. Additionally, this chapter provides a review of recent research on rural brownfields redevelopment that is centered on the barriers rural communities face at the national level and possible solutions to these concerns. The fifth chapter outlines my methodology for the case studies. Chapter 6.0 tells the story of each of the three case studies, while Chapter 7.0 analyzes the case studies to ascertain the obstacles and opportunities provided in each case study. In conclusion, the thesis suggests local and state policy modifications to provide rural communities better access to resources and promote more equitable redevelopment at sites of all sizes.

## **2.0 RURAL BACKGROUND – WHAT IS RURAL?**

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In the United States seventy-five percent of land is considered rural, yet only twenty-one percent of the population resides in these rural areas (ERS 2003). Because of a diverse national landscape and economic circumstances, a definition of what rural is varies and can be further complicated by beliefs, history, and values. Interestingly, even Federal agencies such as the United States Census Bureau, the Department of Housing and Urban Development, and the Environmental Protection Agency disagree on which communities and which spaces should be classified as rural. As discussed below, the definition of what rural really means is critical to understanding how best to respond to rural planning needs.

One definition of rural is complicated by a communities' proximity to metropolitan regions. Outside of New England—where unincorporated areas are more prevalent and population is more dispersed—rural is measured in counties. Massachusetts' rural municipalities are located near metropolitan regions including Boston, Springfield and Worcester. Consequently, development from urban centers gradually invades these rural communities that often lack the resources to manage this growth effectively. Although Massachusetts' population is not growing, the size of a household has decreased from 4.4 to 2.3 persons in the past decade (Foy 2004). As a result, new development occurs in single-family homes on two-acre lots on vacant land. This trend contributes to the astonishing forty acres per day rate of physical development in Massachusetts (Foy 2004). With little available developable land in urban areas, new development increasingly occurs in rural communities. For many rural communities, they face the challenge of how to accommodate this impending growth, how to take care of their vital natural resources all while preserving the unique character of the community.

In terms of industry and employment, we forget that rural areas have played host to a variety of intense industrial uses. For example, logging and paper mills located in remote communities to be near their main commercial input—trees. In the past century, rural

sites have become the dumping location of metropolitan hazardous waste—including fly ash, coke, and slag (Singer 2002). Tanneries, textile mills, electroplating facilities, landfills, mines, and agriculture are only a few of the other industrial uses common in rural areas. Farming is falsely perceived as predominant economic use in rural areas; the General Accounting Office (GAO) reported that farming was a dominant economic activity in only twenty-two percent of non-metropolitan United States counties as of 1989 (GAO 1993). Furthermore, farming accounted for less than two percent of the Gross National Product in 1990 (GAO 1993, 13). Leading rural economic activities are manufacturing (forty percent) and government (thirty-one percent); mining represents 4.5 percent of non-metropolitan counties (GAO 1993).

This chapter focuses on the unique qualities of rural communities and the obstacles that impede community planning and growth management. Brownfields cleanup and redevelopment is a proven urban redevelopment tool. Rural communities can likewise use this tool to manage growth, promote economic development, and preserve public health and values. To understand how this tool is applied in rural areas, we will develop a practical definition of rural Massachusetts communities and explore the unique concerns that distinguish them from urban communities.

## **2.1 RURAL DEFINITIONS**

The term “rural” means different things to different people. To many, “rural” connotes an agricultural economy; it is described with words such as rustic, pastoral, and forested. Yet the rural community can no longer be viewed as a purely agriculturally based. Rural is often no longer as remote as it once was and can include a relatively dense town center. A review of the literature provides varied interpretations of rural. For some authors, rural implies a purely agricultural economy regardless of size, others use the percentage of undeveloped land, and still others define rural by population size and density. Even Government agencies define rural differently. Clearly, in order to begin to discuss rural communities in this thesis, a clear and consistent definition of what rural is as it applies to communities in Massachusetts is critical and is the first step in the process of analysis.

As discussed above, if we look to national definitions of what it means to be rural we find many answers. Rural communities can have populations that range from as little as 2,500 to as large as 100,000 depending on the Federal agency consulted and the location of the community relative to a given metropolitan area (Mennitto 2002, Singer 2002). In fact, nine definitions exist within the United States Office of Budget and Management, each with a different impact on funding eligibility (Novak 2002). Table 2-1 shows the discrepancy in rural population thresholds of a few federal agencies. The HUD definition of rural is the most commonly referenced definition in research on rural communities; the National Association of Development Organizations (NADO) and the International City/County Management Association (ICMA) use this threshold in rural brownfields research. Since the EPA administers most of the Federal brownfields programs, their definition may be one of the more significant classifications of rural communities. In 2003, the U.S. Census and the OMB updated their urban/rural definitions. As a result, more counties are considered urban than ever before. The increase in urban population is partially a result of actual growth in urban and into formerly non-urban areas, but it is also a factor of the modified definition.

**Table 2-1: Commonly used definitions of rural in the U.S.<sup>1</sup>**

Agency or Organization	Population Threshold
U.S. Census Bureau	<p>According to the Census, rural areas comprise open country and settlements with <b>fewer than 2,500 residents</b>.</p> <p>Furthermore, the U.S. census defines rural as all territory, population or housing units located outside of the following definition, “Urban is all territory, population, and housing units located within an Urbanized Area (UA) or an Urban Cluster (UC).” These consist of:</p> <ul style="list-style-type: none"> <li>• A core population density of 1,000 people per square mile</li> <li>• Adjoining territory with a population density of 500 people per square mile</li> </ul>
U.S. Office of Budget and Management	<p>Rural is all areas that do not meet the standards set for Metropolitan and Micropolitan Statistical Areas below or, <b>less than 10,000</b>:</p> <ul style="list-style-type: none"> <li>• Metropolitan Statistical Areas - urbanized area of 50,000 persons or more*</li> <li>• Micropolitan Statistical Areas - urban cluster between 10,000 and 50,000 persons*</li> <li>• New England City and Town Areas (NETCA) - where the same thresholds are used and applied at the town or city level instead of the county</li> </ul> <p>*Plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.</p>
U.S. Department of Agriculture	<p>The USDA uses nine rural-urban continuum codes to distinguish communities by degree of urbanization or proximity to metro areas. Their rural-specific codes include:</p> <p>8 - <b>Completely rural or less than 2,500 urban population</b>, adjacent to a metro area</p> <p>9 - <b>Completely rural or less than 2,500 urban population</b>, not adjacent to a metro area</p>
U.S. Department of Housing and Urban Development	<b>Less than 50,000 persons</b>
U.S. Environmental Protection Agency	<b>Less than 100,000 persons</b>

Table 2-1 indicates that agency definitions can be confusing. These agencies use different methods to call out the urban/rural dichotomy. For example, the ‘urban/rural’ and ‘metro/nonmetro’ terminology is not interchangeable; urban/rural represents a population count based on the decennial census whereas metro/nonmetro evaluates social and economic data at the county level (ERS 2003). The Economic Research Service

<sup>1</sup> Data for this table was accessed in the following sources:  
 “Census 2000 Urban and Rural Classification” accessed at [http://www.census.gov/geo/www/ua/ua\\_2k.html](http://www.census.gov/geo/www/ua/ua_2k.html)  
 “OMB Bulletin No. 03-04” (2003) accessed at [http://www.whitehouse.gov/omb/bulletins/b03-04\\_attach.pdf](http://www.whitehouse.gov/omb/bulletins/b03-04_attach.pdf)  
 “Measuring Rurality: What is Rural?” (2003) Economic Research Services accessed at <http://www.ers.usda.gov/Briefing/Rurality/WhatisRural/>

(ERS) report argues that those who discuss ‘rural’ America most often refer to conditions in nonmetro areas. However, these differing terminologies do include many of the same communities. Of the 59.1 million rural residents in 2000, forty-nine percent lived in nonmetro counties (ERS 2003). Further confusion arises from the separate model for New England communities created by the U.S. Census. Initiated because New England municipalities identify themselves at a town and city level instead of the county, the New England data set cannot be compared directly with non-New England statistics.

Clearly, this array of definitions serves the purposes of the respective agencies. But, do the myriad of definitions in fact serve the rural communities? I would argue that they do not. For example, U.S. Census and OMB statistics indicate that no part of Massachusetts is considered rural. The small size of the state and the close proximity of these seemingly rural towns to large urban centers cause these towns to be misclassified as part of their urban neighbors. Residents of North Granby, Connecticut expressed irritation when the new U.S. Census definitions designated the town as urban; locals have always considered the town ‘rustic’ (Swift 2003). Furthermore, many Massachusetts towns contain densely settled clusters; the census counts these urban clusters regardless of the acknowledged political boundaries in Massachusetts (ERS 2003). Although Massachusetts may not be ‘as rural’ as sparsely populated counties in the Midwest and South, some Massachusetts communities most certainly identify themselves as rural. This research considers ‘Rural Massachusetts’ to include communities with a population less than 10,000 persons and population density less than 500 persons per square mile; Chapter 5.0 explains the derivation of this definition. The following sections of this chapter elaborate on generalized qualities that contribute to the rural character.

## **2.2 RURAL CHARACTERISTICS**

As part of understanding rural communities, it is important to get a sense not only of how rural areas are defined, but also to get a flavor of what these communities look and feel like. Key features of rural life include extent of physical space, detachment from

metropolitan areas, smaller populations located far from each other, and a lack of access to services and amenities such as major transportation networks, government agencies, and commercial centers providing jobs. Despite the proximity of communities in Massachusetts, few non-rural policymakers understand the character and issues of rural areas. The following section discusses the complex systems of rural communities that set them apart from urban or even suburban areas.

### **2.2.1 A Typology of the Rural Economy**

Rural typology is another way to understand the singular qualities of rural communities across the country. This typology is distinct from rural definitions because it characterizes communities according to economic function. According to Lapping, Daniels, and Keller, identifying whether or not a community is rural depends on three explanatory typologies: geographic location, dominant economic activity, and social characteristics (1989). The interplay of these typologies has strong implications in planning and policymaking in rural areas.

“Geographic location” distinguishes rural communities by their proximity to metropolitan regions. Communities on the “rural-urban fringe” are those bordering metropolitan areas (Lapping, Daniels, and Keller 1989). A likely result of urban sprawl, these communities are fast growing in population and physical development. Residents in the rural-urban fringe are close enough to the metropolitan center to commute for employment.

Furthermore, their location adjacent to urban centers provides superior access to political and cultural resources than accessible to more remote communities. Despite efforts to maintain a significant degree of open space and rural qualities, towns surrounding metropolitan regions are more likely to yield agricultural and resource-based industries, open space, and a quiet way of life to urban influences (Lapping, Daniels, and Keller 1989). Communities outside the rural-urban fringe are more isolated from city and state resources. Residents in these remote rural communities operate home-based businesses, and commute to neighboring towns and small cities; still, a few drive long distances to work in metropolitan centers.

Lapping, Daniels, and Keller break down their “dominant economic activity” category into agricultural, government, manufacturing, mining, poverty, retirement, and rural recreation (1989). Their typologies reflect closely the typology designed by the Economic Research Services (ERS) of the USDA. The ERS categorizes U.S. counties into six non-overlapping economic types: farming-dependent, mining-dependent, manufacturing-dependent, government-dependent, services dependent, and non-specialized counties. Five additional overlapping policy typologies reflect social distinctions in rural communities as opposed to economic purpose; these include retirement-destination, federal lands, commuting, persistent poverty, and transfer dependent counties (ERS 2003). In a more recent attempt, Michael Holton of the Center for Rural America (CRFA) catalogs economic activity into six distinct purposes; three of these, academic communities, area trade-centers, and exurbs, supplement and update the Lapping and ERS categorizations (Holton 2004).

The following list provides a summary of the economic typologies created by those three studies. The typology contributes to understanding of the economic motivators in rural communities throughout the nation.

- Academic Communities: These are communities whose primary employers are boarding schools, colleges, universities, research labs, and corporate training facilities. The educational base provides the community’s asset.
- Agricultural: Concentrated in the Great Plains and Midwest, where twenty percent of personal income or employment depends on farming or ranching, these areas have suffered economically and in population from a declining domestic farm economy and significant young adult out-migration (Lapping, Daniels, and Keller 1989).
- Area Trade-Centers: These are areas generally located far enough away from an urban district but large enough to have economic generators so that their business climate still flourishes (Holton 2004).
- Exurbs: Also referred to as bedroom communities, exurbs are rural areas located close enough to urban regions for people who work in urban centers to buy cheaper land and commute (Holton 2004).

- Government Centers: The presence of county seats and or areas that house military bases, federal and state agencies, prisons, or other nonprofit agencies greatly enhances the economic base of these communities (Holton 2004). One-quarter of all personal income comes from government jobs.
- Manufacturing: The largest non-metropolitan employer in 1989 at twenty-six percent of the national workforce, manufacturing communities have seen their market share decrease in recent years because of foreign competition. Located mainly in the Southeast, manufacturing communities tend to have the highest populations among non-metropolitan counties and are more urbanized (Lapping, Daniels, and Keller 1989).
- Mining: Found mostly in the Rocky Mountain West, Kentucky and West Virginia, Mining areas tend to be remote and experience high population fluctuations due to the condition of the mining economy (Lapping, Daniels, and Keller 1989).
- Poverty: These communities have an average per capita income in the bottom twenty percent of all U.S. counties. They tend to be concentrated in the Southeast and Appalachian states. Obviously, poverty communities have a lower percentage of workforce participation (Lapping, Daniels, and Keller 1989).
- Recreation Centers: These communities have a clear advantage or natural asset that provides an attraction for others to visit such as historic locations or scenic vistas (Holton 2004). Lapping et al attribute the success of these areas to urban second homeowners who tend to locate near recreational or particularly remote places (Lapping, Daniels, and Keller 1989).
- Retirement Centers: Representing one-fifth of all counties nationally, these areas feature a disproportionate population of people fifty-five and over. This dramatic in-migration equated for large population increases in these counties (Holton 2004 and Lapping, Daniels, and Keller 1989).

While not representing all communities specifically, this classification is important because it shows the great diversity of rural living. These typologies coincide with the resources available to rural communities. For example, government and academic communities have greater tie-in to financial and technical assistance, recreation communities are usually state assets, whereas poverty communities have meager local resources but may receive a larger share of Federal and/or State assistance.

## **2.2.2 Rural Economic Concerns**

Economic activity in rural communities is rooted in specific cultural or economic factors. For example, the availability of certain natural resources made it more likely for mills to open shop along the major rivers of Massachusetts. Today many communities remain socially and economically tied to their historical economic drivers; however, adaptation has been essential owing to changing economic conditions. Original economic uses are either no longer in operation or significantly less productive than in the past. According to Holton, “Rural capital flows primarily to only thirty-three to forty percent of all rural counties in the United States” (Holton 2004).

The majority of rural communities are struggling to maintain economic stability. With the great loss of industrial and manufacturing facilities in the Northeast, communities have lost significant tax base, jobs, and often community benefactors. Single industrial or manufacturing operations were once the social center and the sole employer in many rural communities in the United States. In addition to providing jobs and a substantial tax base, industrial operations provided social services or monetary contributions to the town, increased the population through employment, and attracted visitors.

Over time, the rural economic landscape has changed drastically. In the 1980’s manufacturing in rural areas represented twenty-six percent of the nation’s jobs compared with twenty-two percent in urban areas (Lapping, Daniels, and Keller 1989). Turning back on substantial progress in the 1970’s, the decade leading up to the 1990-91 recession saw unemployment and poverty increase, per capita income and earnings decrease below urban levels, and population fall in rural United States (Ghelfi 1993). Farm jobs have experienced a significant loss in the past two decades owing primarily to technological advances, which enable large-scale farming instead of small-family farms. Although the Northeast is not known as a farming-dependent economy, a similar fate has fallen on the manufacturing sector in Western Massachusetts (Majchrowicz 1993). In response to global competition, many factories consolidated their operations, closing more remote facilities to cut costs specifically in transportation and operation. As a result

of depressed economies and low populations, rural communities have a smaller tax base on which to provide regular public services and engage in municipal planning.

To complicate financial difficulties, rural communities struggle to garner non-municipal support. Federal deregulation of the lending industry and the growing consolidation of local banks into larger national conglomerates significantly reduce the lending opportunities for small communities (Sullivan 1993). Banks are reluctant to justify new loans. For small business development, the physical presence of the lending institution in the community at question is a mandate (Sullivan 1993). Rural and small communities have few investors outside of traditional lending institutions; financing for both essential public services and economic development is difficult without a local bank or willing private investor.

### **2.2.3 Rural Environmental Values**

Blessed by a wealth of natural resources, rural communities may value environmental preservation more than their urban counterparts. According to Yaro, the commanding environmental planning needs of rural communities are (Yaro 1987):

1. Preserve natural resources or resource-based activities
2. Provide open space for public use and recreation
3. Remediate contaminated sites
4. Guide the location and rate of development

Yaro argues that preserving the natural landscape is the dominant desire of most rural communities whether they are located on the rural-urban fringe or in more remote rural communities (Yaro 1987). It is this agrarian character and the associated values of rural life—including long views, pristine landscape, access to nature, and quiet—that bring people to rural communities in the first place. Once there, whether they are long-term residents or new transplants, rural residents are reluctant to impinge on this rural character (Sweetser 2002). As a result, deep conflict lies in simultaneously managing growth in these communities while preserving the rural character.

Protection of public health through remediation of environmental contamination, whether it be water, air, soil, or noise is another predominant environmental concern in rural communities. Historically, it is believed that rural areas are healthier, the air more pure, and the water more clean. It is common for the elderly or infirm to move from densely settled urban centers to rural areas, taking advantage of an environment free of air and noise pollution. Similarly, the Clean Air Fund has sent inner city children from densely populated cities to rural or small suburban communities to both teach them about others as well as to provide them with a taste of “healthier” living.

Despite the perception of a pristine and healthful rural community, rural and urban areas face many similar environmental problems. The more common environmental impacts in rural areas include polluted groundwater, overfilled solid waste disposal sites, loss of open space, air pollution because of traffic congestion, and soil and water pollution from industrial waste (Singer 2002). Common industrial uses in rural communities contribute to water and soil pollution that goes unrecognized. Runoff off from pesticides, herbicides, and animal waste are a common groundwater contaminant in agricultural communities (Singer 2002). Tanneries and paper mills released inorganic solvents and bleaching agents into the soil and water. Midwest mines left large scars in the land and traces of heavy metal in the soil (Singer 2002). Note that many of these environmental issues are not unlike those experienced in urban areas. However, the scale of environmental impact in relation to community size is a major difference between urban and rural contaminated sites. The cleanup and reuse of one rural site has a dramatic impact on the rural economy and community spirit.

### **2.3 PLANNING IN RURAL AMERICA**

“Can rural areas still provide what makes them rural and appealing? Such as clean air, water, open space and low crime”  
(Lapping, Daniels, and Keller 1989).

Can rural communities maintain their character while accommodating growth? Rural communities in Massachusetts are either facing increased growth or trying to control

what happened in previous decades. Both situations call for strategic planning and efficient use of resources. Fifteen years ago Lapping, Daniels, and Keller argued that planning in small-towns is necessary to foster a sustainable community because it encourages self-reliance, economic development, and environmental protection (Lapping, Daniels, and Keller 1989). Their research indicated a substantial gap between urban and rural policy that needed to be closed. Research by the National Association of Development Organizations and the International City/County Management Association argue this gap is not yet closed.

Historically, governmental efforts to assist rural people and places has stemmed from two values – equity and efficiency. According to Bonnett, the equity rationales for rural policy included (Bonnett 1993):

1. government has historically promoted rural development thus should continue to do so
2. government is morally obliged to ensure that all citizens have access to essential services
3. government is morally obliged to improve rural-urban equity by giving special attention to rural areas
4. government owes rural areas for disparities created by past policies and programs

The economic rationale for rural policy is that the absence of certain goods and services in rural America leads to inefficient use of rural resources and thus creates a drag on the national economy (Rowley 1993). Given the economic limitations of most rural communities, the equity argument becomes more significant in developing federal and state policy to benefit rural communities.

Rural areas do have characteristics useful for leveraging sustainable economic development. First, rural communities possess unique cultural and natural resources, which often drive economic development. Second, rural and small communities have strong local connections. Lapping, Daniels, and Keller argue that rural communities are more successful when education and compromise are employed rather than a heavy-handed bureaucratic approach (Lapping, Daniels, and Keller 1989). With limited

resources locally and infrequent access to state and regional resources, rural communities will be most successful when working together. Third, rural communities want to preserve the character of their land and the values associated with rural living. The literature indicates that the strengths of rural communities, most importantly the ability to work cooperatively, and their deep respect for nature allow them to overcome the lack of resources to manage growth and create development that is sustainable and appropriate to their community.

There is no one answer for rural policy and planning. As shown in the preceding discussion, rural areas are quite different from urban communities and likewise quite different from each other. “The Federal rural development agenda is built on the principle that local residents are the best judges of which rural development strategies are best for their communities” (Ghelfi 1993). Rural areas cannot use urban solutions to solve their problems because many of the obstacles to economic development are unique to their communities. Likewise, one standard approach will not work for all rural communities. Reducing the economic disadvantage requires creative steps by all levels of government to address the varied needs of rural communities.



### **3.0 BROWNFIELDS BACKGROUND**

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Decades of industrial activity scattered the national landscape with contaminated and abandoned or underused property. The presence of contamination poses a significant barrier to the reuse of such sites. Three factors imposing the greatest impediments to the cleanup and reuse of any contaminated site are fear of liability, rising cleanup costs, and a longer development timeframe. Private parties are often reluctant to take ownership of properties without a clear understanding of the level of contamination and an assurance of liability relief for damage or injury occurring on the site. Likewise, lenders are reluctant to provide financing for such sites out of fear that legal and environmental obstacles make it difficult for borrowers to repay the loans. As a result, many developers take the easy way out by building on undeveloped or “pristine” sites; these sites are most often located in rural and suburban communities. This development pattern poses two significant problems: (1) it encourages the spread of development into undeveloped areas, and (2) it causes vacant and underused properties to falter, contributing to economic and social decay. For these reasons, Federal and State policy developed over the past twenty years attempts to facilitate remediation on contaminated sites, or brownfields.

#### **3.1 BROWNFIELDS HISTORY**

The U.S. Environmental Protection Agency defines brownfields as “abandoned, idled, or underused industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination” (U.S. EPA, Ryan 1998). Between 400,000 and 600,000 brownfields sites reportedly exist in the United States. Prior use of these sites varies; they were once former gas stations, dry cleaners, abandoned rail yards, coal plants, or shuttered steel mills. Common perception holds that the majority of brownfields sites reside in urban areas. It is true, urban brownfields are a major policy issue across the United States because of the dense clusters of industrial activity and the resulting economic and physical blight. However, brownfields are also prevalent in rural areas in the form of abandoned mines, waste dumps, gas stations, and a range of other industrial uses mimicking those found in urban America.

State agencies and nonprofit research agencies have been advocates and significant contributors to furthering the brownfields agenda. Pushing for reforms to help recycle brownfields back into productive use, the United States Conference of Mayors argue revitalizing brownfields sites promotes better health, increases property and neighborhood value, creates jobs, and increases tax revenues (Ryan 1998). Their 1998 report entitled “Recycling America’s Land” identified potential for an additional \$205 million to \$500 million in revenue and 236,000 in jobs upon the return of brownfields to productive use (Ryan 1998). The National Governors Association reported in 2000 that the economic benefits to brownfields redevelopment can be ten to one hundred dollars for every one dollar of state spending (NGA 2000). Additional value in brownfields revitalization includes curbing sprawl and its side effects, reducing air pollution, and preventing loss of open space (MA Brownfields Program).

Federal initiatives also stress the need for reusing contaminated property. In 2001, Former EPA Administrator Christie Todd Whitman commented on the Federal government’s brownfields perspective:

”Reclaiming brownfields is an effective way to help revitalize and reinvigorate those neighborhoods where they are located while, at the same time, prevent the spread of sprawl and its attendant problems.” (U.S. EPA)

Whitman also reported that every one acre of brownfields sites redeveloped preserves 4.5 acres of open space. This fact is particularly poignant in rural communities where landscape preservation is a priority.

Federal support for brownfields programs comes from an array of federal agencies and non-federal brownfields organizations. In 1997, EPA created the Brownfields National Partnership Action Agenda to formalize federal commitments. Updated in 2002, the Agenda has twenty-one agencies working on over 100 commitments to cooperatively prevent, clean and reuse brownfields (“Brownfield Basics”). Efforts to remediate

contaminated sites have been a Federal concern for nearly thirty years, and its history is discussed below.

### **3.2 OVERVIEW OF FEDERAL POLICY**

Over twenty-one federal agencies support assessment, cleanup, and redevelopment of contaminated sites; however, the dominant federal agency has been the Environmental Protection Agency (EPA). Prior to 1976's Resource Conservation and Recovery Act (RCRA) there were few controls on the release of toxics into the air, ground, and water. As recognition of the impact of toxic chemicals on public health and the environment, RCRA enabled EPA to monitor hazardous material production, operation, transport, and disposal as a pollution prevention mechanism (Bloomer 2002). What RCRA did not address was existing contamination. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, led the Federal regulation of cleanup at existing toxic sites by imposing a strict cleanup standard. CERCLA's ratification was largely in response to the national disaster at Love Canal, NY where an entire community was sickened by toxic chemicals in the soil. Commonly referred to as 'Superfund' because of the trust fund created for the cleanup of abandoned hazardous waste sites, CERCLA legislation was enacted primarily to halt industry's uncontrolled discharge of pollutants into the environment by making owners fully responsible for the cost of cleanup (Ryan 1998).

The term Superfund also applies to the list of sites placed on a National Priorities List (NPL) under CERCLA. Placed on the list because of extensive contamination and the subsequent public health threat, these sites receive funding priority for cleanup. Carrying high risk, the CERCLA cleanup standards are prohibitively stringent and expensive. As a result, property owners engaged in a race to the bottom, doing little if anything to remediate contamination and thus contributing to further abandonment of highly contaminated property (Day, Ryan 1998). This abandonment of contaminated industrial sites left a trail of neglect in many communities. Critics of the Federal program argue that only a small fraction of sites were cleaned in the first fifteen years and excessive

spending on the legal and regulatory aspects of the cleanup detracted from actual cleanups (Portman 1998). Beginning in 2004 the Superfund is supported by general tax revenues; the fund has decreased by 1/3 since 1993 and by \$8 million from 2003 (Lee 2004). Lee indicates that decreased tax appropriation led the government to significantly slow designations of Superfund or priority cleanup sites to prevent having a list of highly contaminated and unfunded cleanups (2004). In response to Superfund criticism, the U.S. Conference of Mayors pushed for legislative reform to encourage the productive reuse of all contaminated and abandoned properties, not only the extreme cases listed on the NPL.

The EPA and other federal agencies realize that providing incentives to remediate sites is far more productive than blacklisting contaminated sites and prohibiting access to necessary funding. However, significant obstacles remained to cleaning up the less contaminated properties, referred to as brownfields. The greatest concern of potentially responsible parties (PRPs) and lenders lies with liability; regardless of involvement, each owner in the properties' history may be held responsible for remedial costs associated to natural resource damage (Bloomer 2002). Today, liability continues to be a significant hurdle for all contaminated properties.

In response to the obstacles, federal brownfields policy has undergone reform in the past ten years. A May 1995 Federal guideline allows the level of cleanup to be determined based on future use of the site; this brownfields tool streamlines the redevelopment process but draws concern because some contamination may remain under paved caps or in restricted portions of a site. 1996's Asset Conservation, Lender Liability and Deposit Insurance Protection Act reduces lender liability when financing sites, which frees non-managing lenders from liability upon discovery of contamination after site acquisition. 1997's Taxpayer Relief Act added tax incentives to spur development (Ryan 1998). In the Federal government's most recent policy effort, on January 11, 2002 President Bush signed into law the Small Business Liability Relief and Brownfields Revitalization Act. The Act achieves a number of things (Bloomer 2002):

1. Removes liability concerns for prospective developers of brownfields sites
2. Removes responsibility for past pollution from prospective developers and contiguous property owners
3. Removes responsibility from small business owners with minimal involvement in site contamination
4. Increases funding for state and local agencies and increases the flexibility in funding use

The 2002 Act also expands the definition of a Brownfield to include sites contaminated with petroleum and lands scarred by mining activity (Ryan 2003). Despite these recent liability reducing Acts, liability at the Federal level is stricter than State policy and still seen as a significant impediment to redevelopment.

The EPA provides the greatest amount of brownfields resources at the federal level. Building on the success of the 1993 Site Assessment Pilot Program, the EPA initiated the Brownfields Action Agenda in 1995 to provide additional incentives for brownfields redevelopment. This effectively continued the pilot programs and created specific suggestions as to how states and local jurisdictions could implement the EPA's Brownfields Economic Redevelopment Initiative (BERI) (Bloomer 2002). BERI provides financial and technical assistance through each phase of a brownfields process: community engagement, assessment, inventory, cleanup, and reuse. Since 1993, the EPA has operated pilot programs to compensate for shortcomings in federal policy. According to Ryan, a goal of the EPA's pilot program is to illustrate that a small amount of federal money directed at brownfields can leverage major private investment in redevelopment efforts (Ryan 1998). The EPA reports that the first 157 Pilot projects leveraged more than one billion dollars of private investments in brownfields sites in the first three years (Ryan 1998). The EPA's pilot programs include:

- Brownfield Assessment Demonstration Pilots
- Brownfields Cleanup Revolving Loan Fund Pilots
- Brownfield Job Training and Development Pilots
- Showcase Communities

In addition to the EPA programs, other agencies have contributed to federal brownfields policy. In 1998, the U.S. Department of Housing and Urban Development launched the

\$25 million Brownfields Economic Development Initiative (BEDI) as a financing mechanism for both cleanup and redevelopment of brownfields properties (Ryan 1998). The program requires the community to put up state-awarded Community Development Block Grant (CDBG) funds as collateral in order to receive the support. Although successful in urban areas, the BEDI program is quite difficult for rural areas because persuading States to put up the collateral can be difficult and time consuming (K. Novak, personal communication March 8, 2004). According to Novak, the Economic Development Administration (EDA) has been a significant contributor to redevelopment of contaminated sites, investing over \$325 million in three hundred sites since 1992. Over time, the attention towards contaminated property has evolved from purely preventive to a proactive strategy for returning abandoned, underused, and dirty sites to productive use.

### **3.3 MASSACHUSETTS' BROWNFIELDS POLICY**

While the past ten years has seen gradual change in Federal brownfields programming, many states have engaged in parallel reform efforts. Innovative state policy fills holes in the government programs through instituting revolutionary voluntary cleanup programs, professionalizing the cleanup process, and reducing owner liability concerns.

“States have taken a lead role in the redevelopment of lightly contaminated sites. Many States have developed programs, tailored to sites and conditions specific to their State, which promote a voluntary approach to site remediation” (the EPA SMLRA legislation).

From a pool of \$50 million, the EPA supports federal efforts by providing state governments with funding to support their programs (K. Novak, personal communication March 8, 2004). In 2004, Massachusetts received \$1.4 million from the EPA mainly to support the Voluntary Cleanup Program; the Commonwealth uses these funds to hire contractors (C. Finneran, personal communication January 9, 2004).

Aware of criticism surrounding CERCLA, in the mid-1990s states such as New Jersey, Wisconsin, and Massachusetts began to develop less stringent, use-based cleanup

regulations and provide economic incentives for cleanup and redevelopment. Massachusetts was the first state to institute an environmental insurance program. This program provides access to reasonably priced environmental insurance to protect an eligible party when and if additional contamination is discovered. By reducing the risk in brownfields redevelopment and as one of the first to privatize cleanups, Massachusetts' program is a model for other state brownfields programs (Commonwealth of Massachusetts 2002).

### **3.3.1 Massachusetts' Hazardous Waste Site Policy History**

MGL Chapter 21E the Massachusetts Oil and Hazardous Material Release Prevention and Response Act (Chapter 21E) resembled Federal Superfund legislation; characterized by similar inactivity, it also contained strict liability provisions which obstructed site cleanups. Less than one-quarter of the sites were cleaned over seven years (Portman 1998). Chapter 21E imposed 'strict, joint and several liability' on any present owner or operator of contaminated property, regardless of who was at fault (Kaplan). Owners were reluctant to take on brownfields redevelopment for fear of potential and unforeseen costs related to assessment, cleanup, damage to natural resources, and property damage. Making the effort more difficult, lenders were extremely reluctant to provide financing because of liability concerns.

1993's Massachusetts Contingency Plan (MCP) aimed to improve on Chapter 21E regulation; it did so by increasing site cleanups five-fold and streamlining the cleanup process through privatization (Portman, 1998, Abelson 2000). Massachusetts was one of the first states to privatize the regulations that governed response actions taken on releases of oil and hazardous material. Privatization of the assessment and cleanup process provides significant benefits by allowing licensed professionals to undertake DEP's otherwise unmanageable list of properties. The MCP is designed to provide clear rules about reporting obligations on contaminated sites, provide a flexible cleanup standard, and allow future use to determine the level of site cleanup (Abelson 2002).

Since its inception, the Commonwealth of Massachusetts has continued to evolve its Brownfields policy to encourage redevelopment of contaminated sites beyond the cleanup.

### **3.3.2 The Massachusetts Brownfields Act**

With the overarching goal of ensuring environmental cleanup and promoting the redevelopment of contaminated property, Chapter 206 of the Acts of 1998 created the Massachusetts Brownfields Act (the Act) to complement the MCP. The Massachusetts Brownfields Program is based on two “cornerstones” (Abelson 2002):

1. The ‘privatized’ regulatory scheme requiring a Licensed Site Professional (LSP) to oversee and undertake all assessment and cleanup activities. The LSP streamlines the site cleanup process by removing DEP oversight from each project.
2. The Massachusetts Brownfields Act, which provides a package of liability protections and financial incentives designed to encourage innocent prospective purchasers, tenants, and lenders to develop previously contaminated sites.

The intent of the Brownfields Act is to attract developers back to abandoned and underused sites while ensuring that environmental standards remain protective (Brownfields Program). The resources provided in the Act are conditional on a commitment to cleanup and redevelopment; key provisions of the act include (Chapter 206 of the Acts of 1998, Kaplan):

- Innocent person liability exemptions under 21E
- Activity and use limitations
- Contribution protection
- Covenant Not to Sue agreements (CNTS)
- Brownfields Redevelopment Access to Capital (BRAC)
- Brownfields Redevelopment Fund (BRF)
- Brownfields Tax Credit Program

Forty-five million dollars was initially allocated to the Commonwealth to administer the BRAC and the BRF. Financial incentives in grants and loans for site assessment and cleanup, and tax credits for redevelopment help spur private sector cleanups of brownfields.

In order to be eligible for assistance through BRAC or BRF, a community must be an economically distressed area (EDA) or the site of a former manufactured gas plant. An EDA is an area or municipality that has been designated as an economic target area or that would otherwise meet the criteria for such designation as determined by the Massachusetts Department of Economic Development. There are 191 EDAs currently designated. In order to qualify as an economic target area, the community must show an economic hardship through factors such as difficulty retaining or creating jobs (M. Burkart, personal communication March 16, 2004). The BRF targets specifically projects that will have a significant economic impact, including job creation and neighborhood revitalization (Commonwealth of Massachusetts 2002). Neither the CNTS nor the Tax Credit Program excludes any communities; however, the CNTS does prioritize program participation based on level of poverty.

The Act also created the Office of Brownfields Revitalization (OBR) under the auspices of the Governor. Intended to serve as the ombudsman for the Brownfields Program, working closely with other Commonwealth departments including housing and community development, environmental protection, economic development, public health, and the Massachusetts Development Finance Agency (MassDevelopment), the OBR closed in November 2002. Interagency coordination has reportedly increased since the closure of the OBR primarily through monthly meetings of the Brownfields Working Group (C. Finneran, personal communication January 9, 2004); however, the office's function as a point-of-contact is sorely missed in communities with no prior brownfields experience.

### **3.4 MEASURE OF PROGRESS**

The Massachusetts Brownfields Program allows developers or municipalities to clean contaminated sites according to a more realistic risk-based and future-use scenario,

provides financial incentives and tax credits to developers who restore a contaminated site to a higher and better use, provides liability relief to non-responsible parties, and provides access to environmental insurance to reduce the fear of future contamination. Recognized as a national model for site cleanup privatization, the MCP won a Council of State Governments Innovations Award (Abelson 2002). Despite the accolades, there is a constant call for increased financial and regulatory incentives to foster redevelopment and tackle the growing list of stagnant contaminated property (Katcher 2000, Commonwealth of Massachusetts 2002).

In Massachusetts and many other states, brownfields redevelopment is regarded as a significant economic development tool, addressing many common community issues including downtown revitalization, sprawl prevention, existing infrastructure corridor reuse, and farmland, open space and natural resource preservation (Commonwealth of Massachusetts 2002). The Brownfields Redevelopment Fund in particular is reported to have a substantial economic impact in “historically underused areas” by accelerating the number of properties undergoing site assessment and remediation (Commonwealth of Massachusetts 2002). In the 2002 *Brownfields Report Update*, a document required by statute, the Commonwealth of Massachusetts reported that since the program began operation in 1998/1999, 570 projects received funding and/or direct assistance and seventy-six projects are in the pipeline.<sup>2</sup>

Following the fourteen-fold increase in site clean ups after the Commonwealth privatized its Waste Clean Up Program in 1993, the 1998 regulatory changes reflect a steady level of brownfields clean up and/or redevelopment activity (Commonwealth of Massachusetts 2002). Table 3.1 shows a breakdown of the financial commitment of the BRF.

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<sup>2</sup> Depending on length of set-up and legislative approval, some programs began operation in 1998 while others began in 1999.

**Table 3-1: Financial Breakdown of Brownfields Redevelopment Fund Program**

Type of Funding	Number of Projects	Amount Expended
Site Assessments under Management	198	\$6,778,014
Site Assessments Leads Pipeline	68	\$2,320,250
Remediation Loans	23	\$6,639,600
Remediation Leads Pipeline	8	\$1,760,000
<b>TOTAL:</b>	<b>297</b>	<b>\$8,399,600</b>

The *Brownfields Report Update* reports two lingering shortcomings in the Massachusetts program. The first is providing resources to parties who choose not to use loans as sources of capital. Currently, the benefits of the Massachusetts Brownfields Program are only available to those using conventional loan financing. This precludes some cities and towns who may fund major projects such as these through general funds, grants, or private funds. The second shortcoming is that significant portions of the program are only available to Economically Distressed Areas (EDAs). An argument can be made for opening the program to all communities; restricting the benefits to just over half the Massachusetts communities may still induce development on pristine land in the non-EDA communities. Both shortcomings relate to accessing a wider range of participants in the program. Although the redevelopment mandate is for all communities, some are inherently omitted from valuable Commonwealth resources because they do not fit the economically distressed criteria. Other communities simply do not have the capacity or the knowledge to partake in this valuable resource.

Outreach relating to the Massachusetts Brownfields Programs could be stronger. In total, 133 communities received marketing information related to the Brownfields program; this number represents less than 40 percent of Massachusetts communities. Interviews indicate that the DEP<sup>3</sup> and the EPA have conducted regional introductory sessions to brownfields policy. Research for this thesis indicates that smaller communities might only receive marketing information on brownfields policy upon request. Abelson (et al)

<sup>3</sup> In light of the closure of the Office of Brownfield Redevelopment and because of their role in Waste Site Cleanup—the first phase of the brownfields process—DEP acts as the first point of contact for brownfields inquiries.

argued in 2002, “if a site did not have significant contamination issues or a sufficiently high political profile, then getting the DEP’s attention was very difficult.” Although DEP endeavors to be proactive in assessment and cleanup activities, it is impossible to reach each community individually. According to Catherine Finneran, “Ideally we envision ourselves reaching out to communities. A lot of times we end up in the communities that have a lot of money from the EPA and who have the largest risk and less so in some of the smaller communities. Nonetheless, we have requests from developers in small communities.” (C. Finneran, personal communication January 9, 2004). Once aware of a community’s interest to participate, DEP does not discriminate its technical assistance provision based on community size or income. However, the nature of the program makes it difficult for smaller, rural, or less experienced communities to participate in the program.

## 4.0 RURAL BROWNFIELDS

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Rural communities are uniquely disadvantaged in brownfields redevelopment. Although community resources are a significant hurdle, the self-help nature of State and Federal programs and current emphasis to reinforce the urban core contribute to this perceived rural disadvantage. “Cleanup and redevelopment is increasingly a key to revitalization of **central cities and urban areas**”<sup>4</sup> (DEP Brownfields Website). This statement, taken from literature on Department of Environmental Protection’s (DEP) website, suggests an urban bias in the Massachusetts Brownfields policy. Furthermore, Massachusetts Brownfields Program records reinforce a predisposition to urban projects. Of the 312 site assessment grants awarded, only nine percent of the projects have been in communities of less than 10,000.<sup>5</sup> Similarly, nine percent of the thirty-four projects receiving remediation loans are rural communities. The BRAC program has seen less than five percent of its projects in rural communities in its five-year history. These statistics provide clear evidence that rural communities are not receiving a fair proportion of state funding and assistance. Key state actors acknowledge this fact, adding that urban areas are more often recipients of funding or technical assistance because they have the resources to initiate and undertake these complex projects and not because of an implicit policy statement favoring urban areas.

This research shows no further evidence of an urban bias written in Commonwealth policy; however, I argue that a distinct urban advantage over rural communities exists in the administration of the Massachusetts Brownfields Program. This advantage results primarily from better municipal capacity and brownfields experience in densely populated urban communities. Drawing on the introductions to both brownfields and rural planning in the previous chapters, this chapter demonstrates the existence of brownfields in rural communities, directly compares the barriers to brownfields

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<sup>4</sup> Emphasis added

<sup>5</sup> Data provided by the Department of Environmental Protection (1/2004). The Commonwealth does not track tax credits and technical assistance.

redevelopment at the urban and rural level, and illustrates the importance of brownfields redevelopment in rural planning.

#### **4.1 RURAL BROWNFIELDS**

“Abandoned properties are common in rural and small metropolitan communities and they have adverse impacts on the community and local economy. Not only are they a potential health hazard, they are a drain on the local economy, inhibit tourism, discourage business relocation and are potential crime scenes.” (NADO 2003a)

Without a doubt, rural brownfield sites exist across the nation. Since 1998, the National Association of Development Organizations (NADO) has published five reports on rural brownfields with financial support by both the Environmental Protection Agency (EPA) and the Economic Development Agency (EDA). In its most recent publications, NADO has explored the obstacles to rural brownfields redevelopment in nearly thirty rural and small communities across the country. In 2001, the International City/County Management Association (ICMA) published “Small Spaces, Special Places: Coordination of Rural Brownfields Redevelopment,” a review of rural brownfields projects. Case studies from across the nation highlight the obstacles to reuse and provide innovative redevelopment solutions to contamination from lead ore, coal and brass mines, slag dumps, agricultural by-products, textile mills, and fly ash. The continuous study of rural brownfields by reputable national organizations indicates that the issue resonates nationally.

The nature of contamination at these rural brownfields is unique and broad depending on geographic location. Pennsylvania and other central states contain former mining establishments, which leached heavy metals into groundwater and destroyed the physical landscape. Eastern states from Maine to Georgia are particularly troubled by former textile and logging mills, where inorganic solvents, bleaching products, and hazardous wastes remain. In agriculture economies, pesticides and animal wastes linger in surface and groundwater. Recently assessed rural brownfields in Oregon include a gasification

plant, a landfill, an auto dealership, and eight petroleum sites located at small stores (Robertson 2003). In Massachusetts, the culprits include textile mills, ports, and gas stations, among many other polluting uses.

It is impossible to provide a precise number of contaminated properties in Massachusetts because the Commonwealth does not currently inventory contaminated property. However, DEP records indicate that between 300 and 500 properties received brownfields financial and/or technical assistance from 1999 until 2003.<sup>6</sup> The EPA reports seventy-six brownfields cleanup sites in Massachusetts that have received EPA assistance.<sup>7</sup> In 1996, EPA estimated 10,000 contaminated properties in New England (EPA Region 1 1996). Identification of brownfields sites has continued to increase in Massachusetts communities as municipalities and Regional Planning Agencies (RPAs) become aware of the economic and environmental benefits of reusing contaminated property. Nevertheless, no inventory has distinguished between urban and rural sites at the federal or state level.

#### **4.2 URBAN ADVANTAGE OR RURAL DISADVANTAGE**

Traditionally, brownfields redevelopment occurs in urban areas where the problems are more visible and thus deemed more prevalent. Singer refers to urban brownfields as a “necessary choice” (Singer 2002). In 1998 the City of Lowell’s economic development officer acknowledged the importance of brownfield properties for his city; “we have no virgin land left to develop...our tax base is constrained, and the only way we’re going to expand it is to build on existing land” (Ryan 1998). More contaminated properties exist per mile in urban areas. Larger populations and potentially larger sites indicate a high level of risk if sites remain contaminated. Urban sites are also prime redevelopment

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<sup>6</sup> Data collected through September 2003 for site assessment and remediation loans through the Brownfields Redevelopment Fund (BRF) and through December 2003 for the Brownfields Redevelopment Access to Capital (BRAC) program. The data was obtained from C. Finneran at the DEP Bureau of Waste Site Cleanup in January 2004.

<sup>7</sup> “Waste Site Cleanup and Reuse in New England” a searchable database of EPA Region 1. Last accessed at <http://www.epa.gov/region1/brownfields/index.html> on April 19, 2004.

locations because of the population densities, proximity of infrastructure, and wealth of social organizations providing assistance. Perhaps the strongest argument for redevelopment of contaminated property in urban areas is the lack of otherwise available land; rarely do urban centers contain clean, vacant land available for development.

Nevertheless, brownfields are not a uniquely urban problem. Rural communities suffer a disadvantage when redeveloping brownfields for the reasons opposite those that create the urban advantage. Rural communities have an abundance of undeveloped land on which it is both easier and less expensive to develop. With few legislative connections, rural communities have minimal visibility at the state level. Furthermore, limited local experience and capacity severely limits the cleanup and redevelopment resources available to rural communities.

Research shows that rural areas face barriers to cleanup and redevelopment beyond those typically faced by urban communities. The NADO and the ICMA have conducted six studies of rural brownfields redevelopment. The ICMA defines rural communities as “cities, villages, townships, Native American reservations, and unincorporated municipalities with populations under 50,000” (Singer 2002, 1). The NADO research uses a similar definition. This standard is larger than Massachusetts’ rural community size. Furthermore, none of the case studies are located in Massachusetts. Nevertheless, a review of the barriers and keys to success identified in prior research is necessary to introduce the urban/rural dichotomy as a national concern.

The NADO findings from the 1999 report “Reclaiming Rural America’s Brownfields” indicate that little has changed in the past five years. The NADO report noted an absence of adequate training and outreach surrounding brownfields in rural areas, an inadequate provision of funding and/or technical assistance to rural communities for brownfields redevelopment, a lack of local resources, and a lack of knowledge surrounding brownfields redevelopment in rural communities (NADO 1999). The section that follows contains a broad discussion of the difference between urban and rural brownfields,

including the unique rural obstacles, as identified through the NADO and the ICMA research. Specific factors that delay or prohibit the productive reuse of rural brownfields include a lack of local resources and capacity, limited information exchange, complex and expensive environmental cleanups, an abundance of undeveloped rural land, infrastructure needs, and a poor fiscal climate. The section concludes with an overview of key success factors to the redevelopment of rural brownfields highlighted in the NADO and the ICMA research and an argument for the merits of reusing rural brownfields.

#### **4.2.1 Unique Environmental Concerns**

Cleanup of contaminated land in rural areas is complicated for two reasons. First, administrative and technical staff is rarely prepared for the complex inventories, assessments, and cleanups required for contaminated property. Second, on site remediation is more difficult and expensive because the skilled labor and tools are not easily accessible. Rural locations are generally located further from the expertise and resources necessary to expedite cleanups (NADO 2001). As a result, costs of rural brownfield redevelopment skyrocket.

#### **4.2.2 Limited Local Capacity**

Brownfield sites are by nature under-populated; even in urban areas brownfields are usually abandoned or underused properties (Singer 2002). However, in rural communities the entire population is small and dispersed. Representing twenty-three percent of communities and twenty-eight percent of the landmass, rural communities account for only four percent of the Massachusetts population (MassGIS, 2000 U.S. Census). In order to benefit from economies of scale and assist larger numbers of people, government by nature provides more support to dense populations. Furthermore, the limited rural population translates into a smaller and less diverse work force with few opportunities to build skills and a decreased market for business development (Singer

2002). The limited local business culture results in fewer tax dollars to support public investments, making brownfields—or any major public effort—quite difficult.

Rural brownfields projects are complicated further by a lack of local administrative and professional staff. Urban areas by nature deliver more services to a larger number of people; they have larger staffs by default and can afford to dedicate staff to specialized tasks. On the other hand, rural staff is spread thin. Singer refers to rural government employees as the “jacks of all trades but masters of none” (Singer 2002, 5). Interviews with small town government staff confirm the expression; with limited staff performing a wide range of duties, rural administrators, economic development officers, or planners cannot afford to be expert at any one task. Limited time and resources impede local staff from establishing networks with other communities, developers, or regional agencies. For example, many town offices in Massachusetts open for as little as six hours per week; these hours are often at night and on weekends because local staff is volunteer.

Rural governments have little flexibility in resources and services provided. Few small communities have more than three employees in town government let alone a staff dedicated to planning and economic development. The limited staff must provide general services to the town; this leaves little time and resources for more intensive activities. Furthermore, small town government officials and volunteers are generalists; their job requires them to cover a large range of issues that would be represented by one position in a larger municipal government. Finally, rural governments cannot provide a diverse set of services. Rural communities have to make choices about which policies and programs to support. These choices often depend on the availability and accessibility of outside assistance. The amount of coordination and specialization involved in brownfields redevelopment makes it quite difficult for a local government staff to master. Grant-writers and project managers have become essential components to brownfields redevelopment; however, rural communities do not have the internal staff to fill this need. Furthermore, many grant programs specifically prohibit spending the award on

administrative needs; therefore, the town must find additional funds to fulfill grant administration (K. McCabe, personal communication March 16, 2004).

Most rural communities lack a strong political network. A small or nonexistent local government challenges the access to federal or state programs. Although nocturnal planning activities can be more accessible to working local residents and less formal, the limited hours inhibit the rural official's ability to work with state and regional officials keeping traditional hours. Similarly, with few representatives in higher government, rural governments have less lobbying or political pressure than urban areas. Rural areas often have only one representative covering a large physical area. Sweetser argues that the range of issues across distinct municipalities in one legislative region makes it unlikely that all interests can or will be represented by elected officials (Sweetser 2002). Unless a strong advocate lives in or near a rural community, the needs of that community may go unspoken.

From this lack of resources and access comes the perception that state and federal government is urban-centric and thus ignores rural communities. Sweetser argues that applying an urban approach to planning in small communities expresses a lack of understanding and ambivalence towards the history and assets in these communities (Sweetser 2002). As a result, rural communities have grown to mistrust non-local intervention. Through the rural residents' strong belief in property rights comes an innate concern for environmental protection. Respecting these beliefs, Sweetser argues that local governments are more likely to apply innovative techniques, including stricter environmental protection measures than state governments (Sweetser 2002).

NADO studies found that many rural residents are unaware of what a brownfields site is and how it can be cleaned and reused (NADO 2001, NADO 2004, Singer 2002). A 2004 NADO survey indicates general confusion in rural and small communities between brownfield and Superfund sites, sustainable development tools and strategies, and funding applications and options (Singer 2002). This lack of knowledge results from

poor communication networks; the dispersed population leads to little regional interaction. The public health dangers of contaminated properties are often not evident to the general public or local government; thus, brownfields are not top community priorities. Furthermore, the NADO found a reluctance of local elected officials to accept the existence of contaminated sites (NADO 2001). Poor knowledge surrounding brownfields in rural areas leads to corporate reluctance and unwillingness of lending institutions to participate in redevelopment (NADO 2001, Singer 2002). This lack of appropriate information promotes the perception that brownfields assessments and cleanups are expensive, risky, and time consuming. The result is community reluctance to take action.

#### **4.2.3 Abundance of “Available” Land**

The market for land is a significant driver of brownfields redevelopment in urban areas. Because of the proximity to jobs, service providers, competing organizations, and access to financial and technical resources, developers are more likely to overlook the liability concerns at an urban site. Urban land inevitably provides greater financial return than rural brownfields sites because of lower land values as compared to neighboring sites. Conversely, rural areas exhibit a surplus of land “available” for development. Property values are undeniably low in rural areas because of the wealth of developable land. Subsequently, there is less urgency and no incentive to remediate a rural contaminated site instead of developing on a greenfield (Singer 2002).

Singer also found that the location of brownfields sites in urban areas facilitates redevelopment better than rural areas (Singer 2002). Urban zoning concentrates industrial uses in one area. This land use control consolidates similar industrial uses as well as the transportation and utility infrastructure on which these uses depend. As a result, Singer argues it may be easier for urban areas to take an area-wide approach to remediation (Singer 2002). Certainly, the redevelopment of co-located parcels provides an opportunity for a large and visible project to gain community support. Rural communities lack this density of sites. Uses unique to rural communities such as farms,

paper mills, and mines might be isolated from the town center in a location that complicates reuse of the site. In this case, communities might prefer to forgo economic gain in order to restore an isolated site to recreational or open space. Alternatively, rural brownfields may be a lone centrally located site where reuse promotes downtown vitality. Regardless of the specific scenario, rural brownfields reuse requires thoughtful long-term planning to ensure public benefit.

#### **4.2.4 Physical Infrastructure Needs Impede Economic Growth**

Rural areas do not have the fiscal resources to make the necessary and ongoing infrastructure changes associated with economic growth. Road, water, and sewer needs remain for the next generation to address. Singer argues that small communities do not have the large-scale and long-term plans to monitor infrastructure improvements (Singer 2002). Infrastructure is not easily upgraded to accommodate new uses that might arrive on a brownfield site. According to Rowley, “EPA estimates that seventy-five percent of needed improvement in wastewater facilities is located in rural communities with populations less than 10,000.” (Rowley 1993, 1). Poor roads and inadequate provision of clean water severely impedes the ability of small towns to attract new users. Furthermore, when communities do receive substantial funding for revitalization, providing this necessary infrastructure takes priority over brownfields reuse.

#### **4.2.5 Poor Fiscal Climate**

Brownfields projects are inherently expensive in any location because of time, the need for experts, and complicated remediation procedures. Rural communities can be without the necessary fiscal infrastructure to see a redevelopment through for a range of reasons including lower tax base, less corporate support, lack of lending institutions, increased dependence on local governments for redevelopment, lack of administrative staff for grant-writing and managing loans, and lack of federal programs addressing rural areas (Singer 2002). Tax base and administrative staff were discussed above in Section 4.2.2.

Inevitably, the lack of administrative capacity and financial resources prevents rural communities from competing with urban areas.

Funding is traditionally awarded in proportion to the density of municipal and regional population; inherently urban areas receive more financial assistance and/or incentives than rural communities (Singer 2002). The United States Department of Agriculture (USDA) established Rural Enterprise Zones (EZ) and Empowerment Communities (EC) as a parallel to the Department of Housing and Urban Development (HUD) programs for urban redevelopment to address this imbalance. However, rural regions receive \$40,000,000 while urban areas receive \$100,000,000 (Singer 2002). Furthermore, USDA provides only loans whose repayment period exceeds the development process; in contrast, HUD awards grants to urban areas.

Most rural communities lack the resources to offer tax increment financing, tax abatements or widespread infrastructure improvements on their own (Singer 2002). More urban-focused programs, such as the Community Development Block Grant (CDBG) are harder for rural areas to tap because they are only eligible to cities over 100,000 (McCabe, personal communication 2004, Singer 2002). Thus, the only avenue for rural areas to receive CDBG funds is when the state or regional government acts as a funding agent. Singer argues the rural program is also more competitive (Singer 2002). The 2002 Federal Brownfields Law requires a twenty percent local match for grants and does not cover indirect and administrative costs (NADO 2003b). As mentioned earlier, the significant hurdle is the lack of paid staff capable of applying for and managing these loans and grants.

#### **4.2.6 Keys to Successful Reuse of Rural Brownfields**

Rural communities must have accurate information (Singer 2002, NADO). NADO reports a lack of understanding in communities, government, lending institutions, and the business sector; each of these is a participant in the brownfields process (NADO 1999). Rural communities must be aware of the existence of brownfields and the public health

implications of these sites. Additionally, rural governments must be aware of financial and technical resources provided by state and federal agencies. In 1999, NADO reported that federal agencies were not reaching rural areas through existing programs and that federal agencies were slow in responding to requests for information (NADO 1999). Interviews from Massachusetts support that finding today.

Both the NADO and the ICMA findings indicate that enhancing the coordination of federal and regional efforts facilitates brownfields redevelopment. In a 2003 report, NADO found that regionally managed sites had significant advantages, including the following (NADO 2003a):

- greater consistency in project leadership
- added local leadership
- greater ability to leverage funds
- enhanced opportunities for cluster industry development
- increased cost-effectiveness of grant administration
- increased accessibility to regional comprehensive plans for insertion of brownfields projects
- greater community involvement in site selection and redevelopment planning
- increased frequency in collaboration among local entities and community groups

NADO studied rural areas that had incorporated brownfields redevelopment into Department of Transportation (DOT) transportation improvement programs (TIPs), Metropolitan Planning Organizations (MPOs) documents, and Economic Development Administration (EDA) comprehensive economic development strategies (CEDs). Involvement in these regional plans leverages additional resources for rural communities and promotes long-term planning (NADO 2003a). Regional coordination creates a framework and experience upon which municipalities can approach future brownfields sites. Regional coordination promotes better linkages between local and federal or state governments. Finally, regional agencies can provide or supplement the administrative support that is lacking in most rural communities.

Federal and state agencies must level the playing field between urban and rural communities. To do so requires an effort by all parties. Rural communities must

participate in the U.S. Census to better voice their needs (Singer 2002). Conversely, federal and state agencies should provide more thorough community outreach and create technical and financial resources to address the rural barriers (Singer 2002). English and Rice suggest “one-stop shopping” access to brownfields information at the state level, a state working group to ensure coordination among public agencies, municipal governments, and private corporations, and at a minimum a comprehensive listing of available resources (English and Rice 1997). Better access and knowledge of state resources provides rural communities with an improved advantage. Furthermore, accurate reporting of rural needs aids government in addressing rural problems.

### **4.3 SIGNIFICANCE OF RURAL BROWNFIELDS REDEVELOPMENT**

National surveys show that most Americans would prefer to live in the country or a small town (Lapping, Daniels, and Keller 1989). Rural connotes a way of life that Americans value. Natural resources draw people to rural areas for tourism, recreation, or living. Lapping, Daniels and Keller argued in 1989 to close the gap between rural and urban planning and give people the opportunity to get on the same level of knowledge, resources, and expertise. “Planning in small-towns is necessary to foster a sustainable community; it encourages self-reliance, economic development, and environmental protection.” (Lapping, Daniels, and Keller 1989, 18)

Redeveloping brownfields in rural communities can provide similar economic, environmental, and social benefits gained by urban communities. The significant economic benefits include jobs, an increased tax base, public health, and open space retention. The NADO research indicates that job creation is a key motivator for rural brownfields redevelopment (NADO 2003a). Protecting public health is the primary environmental benefit; however, preserving open space is an important side effect of brownfields reuse in rural communities. Facilitating reuse of developed parcels instead reduces the incentive to develop on untouched land.

Social benefits in rural communities include building community capacity and renewing a physical and social center. These benefits to brownfields redevelopment are not exclusively urban or rural; however, a project of equal size that might contribute to the vitality of an urban neighborhood could have a significant impact on the economy and social fabric of a small town (Singer 2002). The ICMA and NADO case studies indicate that one brownfield site is enough to revitalize a town center. Many rural communities lack a town center; reinforcing the physical center has social benefits within the community as well as economic and health benefits. In 2003, NADO reported that focusing on centrally located properties encouraged community participation and support for the project; the location of these projects increased the public health risk during remediation but their reuse filled a community void (NADO 2003a).

Given the current penchant towards smart growth principles and urban revitalization in the Commonwealth and nationally, it might be asked why it is even necessary to promote growth in non-urban areas. Massachusetts' rural communities are particularly susceptible to urban expansion because of their proximity to metropolitan regions. No Massachusetts town is more than a three-hour drive from Boston. As growth moves outward from Boston and other smaller Massachusetts cities, rural areas are becoming less remote. In light of this movement, growth management will be a concern of every Massachusetts' community; rural communities are especially concerned about preserving character and natural resources. Unmitigated development can lead to incompatible uses, which further affect the environment and the economy by increasing infrastructure needs, government expenses, taxes, and the potential for environmental hazards (Mennitto 2000, Singer 2002). Furthermore, rural communities are where the urban population goes to vacation, they are retirement communities, and they are where one goes to commune with nature. I argue that rural communities are thus highly valued aspects of society.

Brownfields redevelopment is a proven tool for revitalizing communities and neighborhoods. Just as in urban projects, rural brownfields redevelopments can create short- and long-term jobs, generate tax revenue, improve infrastructure, and revitalize

neighborhoods. Facilitating the redevelopment of brownfields and infill properties on a broad scale achieves a number of goals by: (1) removing the inclination to develop on greenfields; (2) addressing the perceived or actual public health concerns related to contaminated property; and (3) refueling the economic base of a community. These goals are as applicable to rural communities as they are to suburban and urban areas. However, typical federal and state policy favors redevelopment on urban brownfield sites by specifically targeting urban areas, designing programs that are less applicable to non-urban communities, or simply failing to draw in small communities with limited resources.

## 5.0 METHODOLOGY

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The questions posed in this research were explored using interviews at the state, regional, and local level and supported by three comparative case studies of rural communities in Massachusetts. A close investigation of these three communities and the brownfield projects within them identifies the existence of brownfields in rural areas, captures the unique obstacles faced by a range of rural community types, and provides insight into how some communities may achieve success in the cleanup and redevelopment of rural brownfields. This research focuses less on the specific project than on the community itself and how its members have or have not mobilized around the brownfields dilemma. Thus, data gathered in the case studies and interviews addresses the process of cleaning and redeveloping a contaminated site including community involvement, site assessment, identification, cleanup, and redevelopment (referred to in this report as the brownfields process). The intent is to identify at which point in this often lengthy and complicated process the communities faced hurdles and how these hurdles were overcome.

### 5.1 CASE STUDY SELECTION

A case study approach provides a means of comparing a range of rural communities in Massachusetts on their ability to navigate the brownfields process. I used a selective sampling approach. Case studies were selected in two rounds. First, the communities were narrowed based on demographic analysis; they must fit the following three categories:

#### Demographic Criteria

- D1. These communities must fit the rural definition as defined by this research and described below
- D2. The case studies must be classified as Economically Distressed Areas (EDA) as defined in Chapter 3<sup>8</sup>
- D3. The case studies will be selected from three unique and different Massachusetts communities

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<sup>8</sup> Ultimately, one selected community did not meet Demographic Criteria #3; however, their eligibility as an EDA is reportedly under debate with the Commonwealth of Massachusetts.

After meeting the demographic requirements, the second category for case study selection relates to the degree of brownfields activity in the community. The preferred case study sample would have one community meeting each of the three brownfields criteria outlined below:

Brownfields Criteria

- B1. Be a community with a completed redevelopment project (or near completion if need be)
- B2. Be a community that has attempted but struggled with brownfields cleanup and/or redevelopment
- B3. Be a community that contains contaminated sites but has taken no action to clean or redevelop

Using these two categories of criteria to narrow down the population of Massachusetts rural communities enabled me to purposively select three communities with potential to serve as compelling and descriptive case studies for the purpose of this research. The specific criteria are elaborated below.

### **5.1.1 Population**

MacDougall and Campbell argue that population is easier to perceive; it is easy to see and helps determine what people envision as rural (MacDougall and Campbell 1995). As a common and familiar measure of demographic data, population is an appropriate measure for indicating the size of a community. Furthermore, the discussion of rural definitions in Chapter 2.0 indicates that population size is the most common rural indicator used by Federal agencies. Although 50,000 is the commonly used U.S. Census and Department of Housing and Urban Development (HUD) population limit for rural areas, it has no relevance in Massachusetts where only seven percent of the 351 Massachusetts municipalities exceed 50,000 in population (2000 U.S. Census). The Massachusetts Rural Development Council (MRDC) identified 10,000 persons as an appropriate maximum population threshold for rural communities in the Commonwealth (MacDougall and Campbell 1995). According to the 2000 U.S. Census, fifty-one percent (178) of Massachusetts municipalities have populations less than 10,000 (see Figure 5-1: Massachusetts Population).

### 5.1.2 Population Density

Population density is a requisite indicator of rural because not all municipalities are the same physical area. The range of physical community size in Massachusetts is quite large; Plymouth is nearly 100 square miles and Nahant is just greater than one square mile. Despite the fact that Nahant meets the population size limit with 3,600 persons, its population density is 2,200 persons per square mile; hence it is clearly not a rural community. Including the density of population per square mile as an indicator sets municipalities of different sizes on equal footing for comparison (Sweetser 2002). Some argue that population density alone is misleading largely because rural pockets can be found in metropolitan areas and conversely urban-like dense settlement may be found in rural areas (Lapping, Daniels and Keller 1989, Sweetser 2002). MacDougall and Campbell suggest that the “challenge is to find a threshold sufficient to include as rural those with small centers and relatively large outlying populations yet small enough to exclude physically smaller towns” (MacDougall and Campbell 1995). Neither population nor population density are perfect indicators. They cannot distinguish a large community with a large area of open space and a densely settled center from a small sparsely populated community. Although not perfect, these indicators are the easiest to comprehend.

Another organization studying rural life in Massachusetts, the Center for Rural Massachusetts (CRM), uses a population density of less than 500 persons per square mile as an appropriate indicator of rural. The U.S. Census defines an “urbanized area” as greater than 1,000 persons per square mile and “adjacent areas” as those with population densities less than 500 persons per square mile. Five hundred persons per square mile is the equivalent of one person per ever 1.25 acres<sup>9</sup> (MacDougall & Campbell 1995). Using 2000 U.S. Census data, fifty percent (174) of Massachusetts municipalities have population densities less than 500 persons per square mile (see Figure 5-2: Massachusetts Population Density). The slight variation of municipalities meeting both population and

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<sup>9</sup> Six hundred forty persons per square mile is the equivalent of one person per acre (MacDougall & Campbell 1995).

population density indicates that these indicators are accurate at capturing a set of rural communities, at least in Massachusetts. Forty-four percent (154) Massachusetts communities meet both the population and population density definition.

### **5.1.3 Kind of Community**

To further clarify the definition of rural in Massachusetts, the third indicator is the Kind of Community (KOC) code developed by the Massachusetts Department of Education in 1985 and used by various Commonwealth agencies such the Department of Revenue in comparative analysis. The KOC is based on fifteen criteria including population, income, property values, percent of commercial property, demographics, and percent population change (Sweetser 2002, Koller 2002). Merging these indicators ensures inclusion of most of the typical rural communities and excludes the small, but densely settled communities that are actually urban. Twenty-three percent or eighty communities are considered rural using the KOC codes. Derived from fifteen demographic and economic criteria, the KOC codes are a more astute indication of rural.

The seven categories of communities are considered to be a fair division of Massachusetts municipalities and capture more precise differences in communities (see Figure 5-3: Massachusetts Kind of Community Codes). KOC 5 ‘Rural Economic Center’ and KOC 6 ‘Small Rural Communities’ apply to this research. Other categories such as KOC 3 ‘Growth Communities’ and KOC 7 ‘Resort/Retirement and Artisan’ may also include municipalities meeting the two population indicators described above but have unique economic characteristics that I have chosen to exclude from this research. For example, KOC 7 includes many Cape and Island towns as well as some Western communities that draw substantial revenue from tourist dollars and a higher land value, not common to traditional rural communities. Of the communities less than 10,000 in population and less than 500 in population density, twenty-three percent (80) are KOC 5 and 6 communities (MassGIS, U.S. Census). These seventy-nine communities are the sample population from which I draw my case studies (see Figure 5-4: Massachusetts Rural Communities and Figure 5-5 for a listing of the rural communities).

#### **5.1.4 Economically Distressed Areas**

In addition to being rural, the selected communities must also fit the Commonwealth's definition of an Economically Distressed Area (EDA). An EDA is defined as an area or municipality that has been designated as an economic target area or that would otherwise meet the criteria for such designation as determined by the Massachusetts Department of Economic Development (Commonwealth of Massachusetts 2002). The reason for using this criterion is to limit the selected case studies to those communities eligible for Commonwealth funding. EDAs are eligible for all Commonwealth funding, technical assistance and tax credits while non-EDAs may only be eligible for a few programs, such as the Covenant Not to Sue Program administered by the Office of the Attorney General. In total, 191 of the 351 Massachusetts municipalities are qualified as EDAs. Of the seventy-nine rural communities, forty-nine (62%) are also classified as an EDA.

#### **5.1.5 Unique Community**

In order to maintain a broad representation of Commonwealth communities, the final demographic criterion ensures that each community is unique from the others selected. The three case studies meet this criterion geographically, regionally and in population size. Although each of the three communities is located in Western Massachusetts and more than 100 driving miles from Boston, they are separated from each other by approximately thirty miles. Furthermore, the communities selected represent three different counties and three different Regional Agencies, Franklin Regional Council of Governments (FRCOG), Berkshire Regional Planning Council (BRPC), and the Pioneer Valley Planning Commission (PVPC).<sup>10</sup> In terms of population, the communities represent a broad range of population sizes from 582 to 9,000 persons and densities ranging from eighteen to 395 persons per square mile. Largely due to its small population, one community experienced rapid growth in the last decade, with a

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<sup>10</sup> Beginning in 1997, Middlesex, Berkshire, Essex, Hampden and Worcester county governments were abolished. Franklin County adopted a regional Council of Governments and Bristol, Dukes, Nantucket, Norfolk, Plymouth and Suffolk county governments remain substantially unchanged. The Regional Planning Agencies have replaced some of the duties of that governmental structure that would be inefficient for individual municipalities, including economic development, transportation, public health, and the environment..

population increase of thirty-eight percent (2000 U.S. Census, MassGIS). Another saw a population that neared 14,000 at the turn of the 20<sup>th</sup> century, decline by seven percent in each of the past two decades (D. Cesan, personal communication March 27, 2004, 2000 U.S. Census, MassGIS). Consequently, there are enough distinctions in community characteristics to provide a balanced comparison.

#### **5.1.6 Degree of Brownfields Activity**

The final case studies were purposively selected from the rural communities meeting the above criteria by the degree of brownfields activity. The ideal selection of communities represented a broad spectrum of redevelopment: (1) complete, (2) in progress, (3) no activity. However, the final selection of case studies did not fall so easily into these three categories. Playing heavily into the case selection was the ability to select communities able and willing to participate in the study. This inherent bias affected this stage of case study selection.

Although I am certain they exist, I did not select a community with a completed brownfields redevelopment project. A significant obstacle to finding a completed redevelopment is the relatively young brownfields programs in Massachusetts in combination with the length of time required in the brownfields process. As discussed elsewhere in this paper, much of the early funding and/or technical assistance at both the federal and state level has been dedicated to larger cities than those involved in this research. Nevertheless, the communities selected still represent a range of development. Two communities have identified multiple brownfield sites. Of these two communities, cleanup is at or near completion at one site; another is stuck early in the brownfields process. These two communities provide an interesting look at how different factors prohibit or facilitate the brownfields process within the same municipal structure. The third community falls into the 'No Activity' category. They have not moved far in the brownfields process but have a dedicated few trying to get it moving.

## **5.2 CASE STUDY EVALUATION**

This thesis does not measure quality and thus will not attempt to say whether a project is a good or bad result. The research compares rural communities for their awareness, capacity, and willingness to access state resources for brownfields cleanup and redevelopment. Specifically it evaluates the current capacity of local government, looking closely at the number and hours of staff dedicated to community development, their level of knowledge, the operational system of the Town Hall, and the level of technical support secured from the Regional Planning Agency. As part of my research, I discovered that many rural communities rely on Federal EPA monies, provided through Regional Planning Agency grants; thus, I cannot exclude the significant role of Federal funding in these projects.

There were no pre-determined evaluative criteria used to analyze these case studies. Interviews and research led to the development of a catalogue detailing the barriers faced by the communities in the brownfields process and the elements that enabled success.

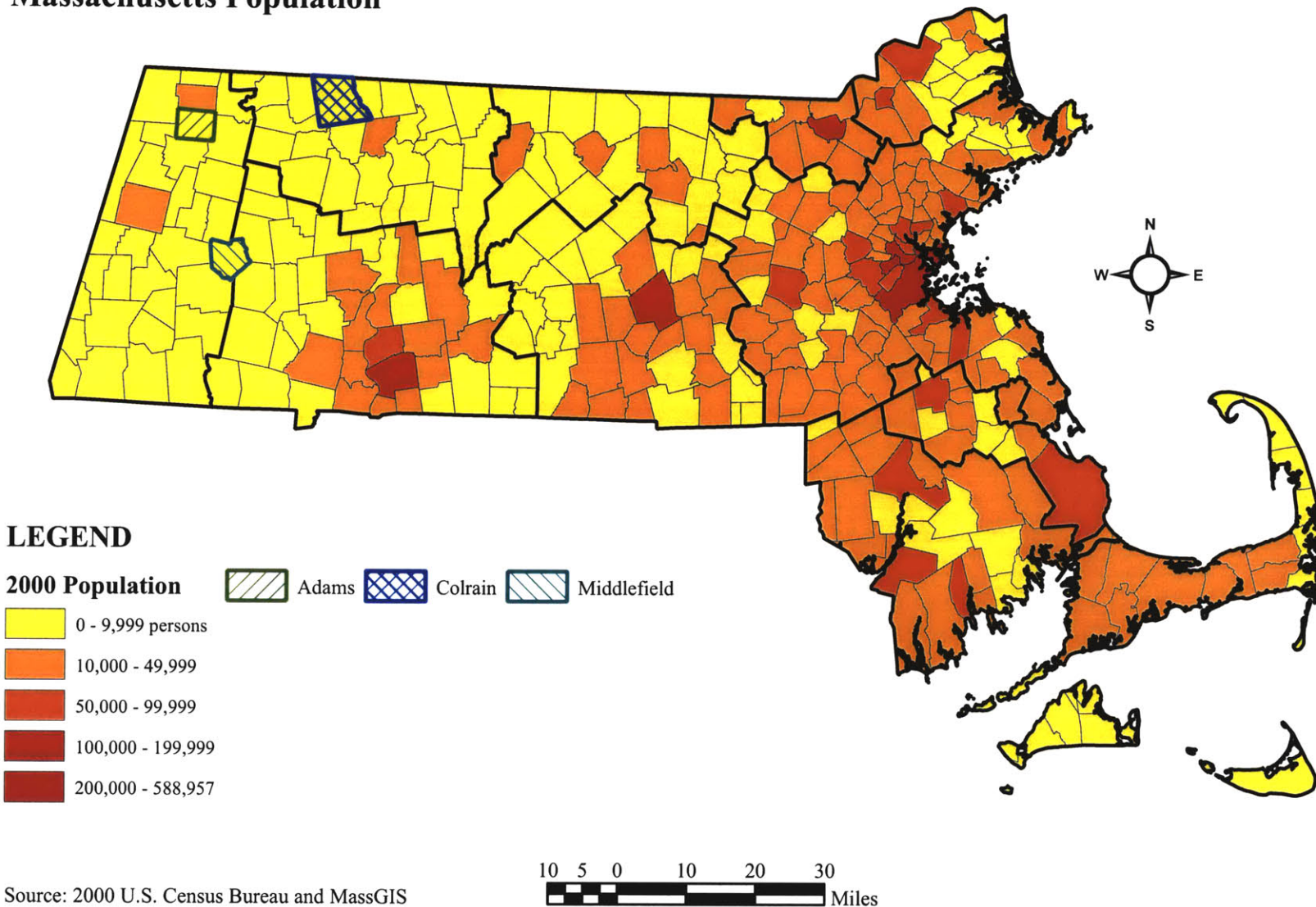
## **5.3 INTERVIEWS**

Both as part of the case study research and for further background research on Massachusetts rural brownfields redevelopment, interviews were conducted at the local, regional, state, and federal government level. These interviews included government employees, private developers, planning consultants, researchers, and community development organizations. The main thrust of the interview was to get at the barriers faced by each community or locale when attempting to remediate and redevelop a contaminated site. I also gauged familiarity with the incentives offered through the Massachusetts Brownfields Program as well as the intent or willingness to consider brownfields redevelopment. The interviews surrounding the case study projects provide significant background information on the project sites including level of contamination, financial capacity, redevelopment goals, and most importantly process. The intent of these interviews is to measure the access to state resources, estimate the difficulties or

hurdles faced at each brownfield site, and identify which resources may have been lacking or which ones were in place.

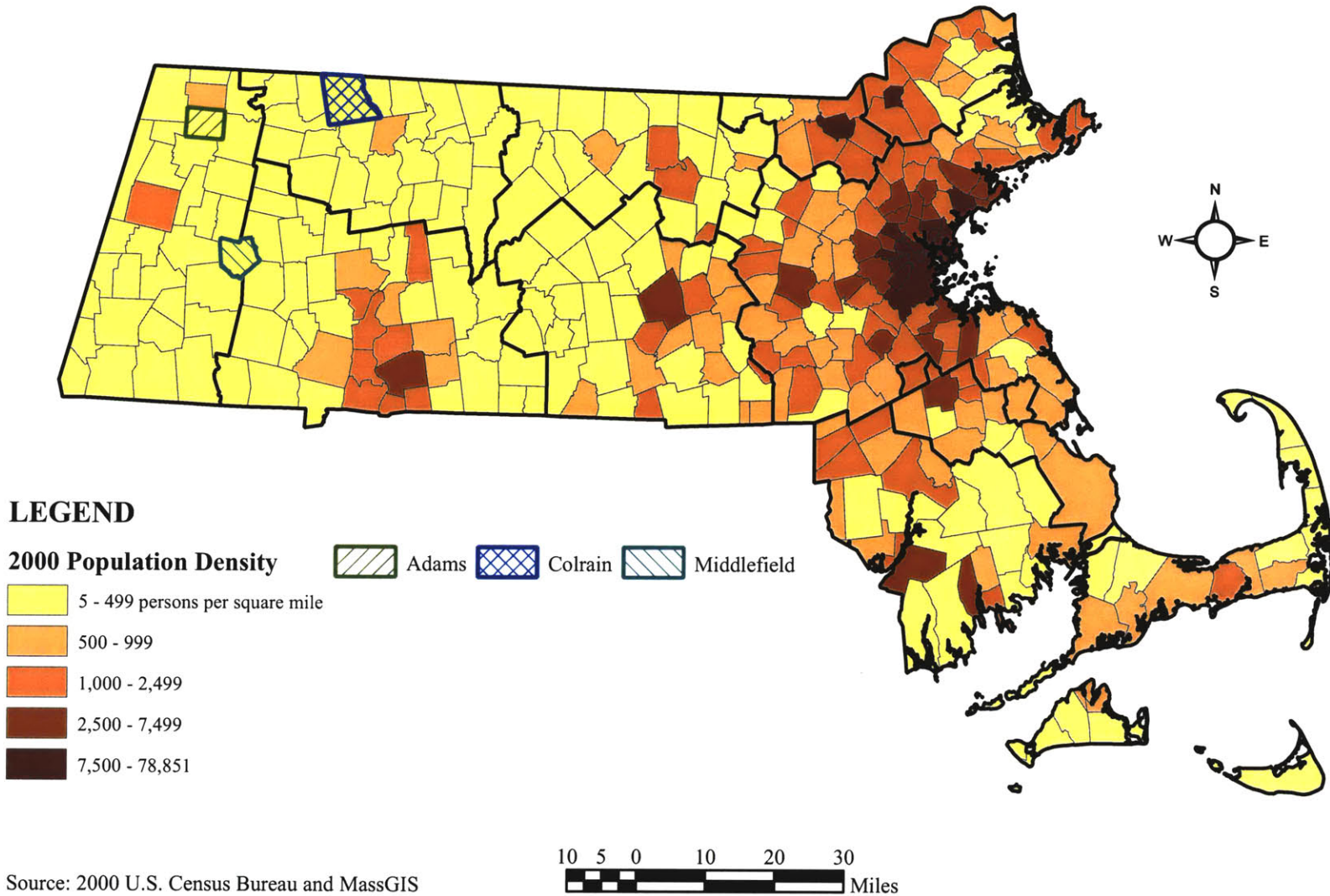
A specific set of questions was not used in the interview process. The vast range of interviewees called for a different line of questioning for federal agents or nationally based researchers than for those more closely affiliated with Massachusetts. A less restricted line of questioning responds to the unique expertise of each interviewee. Nevertheless, a general set of questions was used to guide the discussion and prepare the interviewee in advance if requested.

**Figure 5 - 1:  
Massachusetts Population**





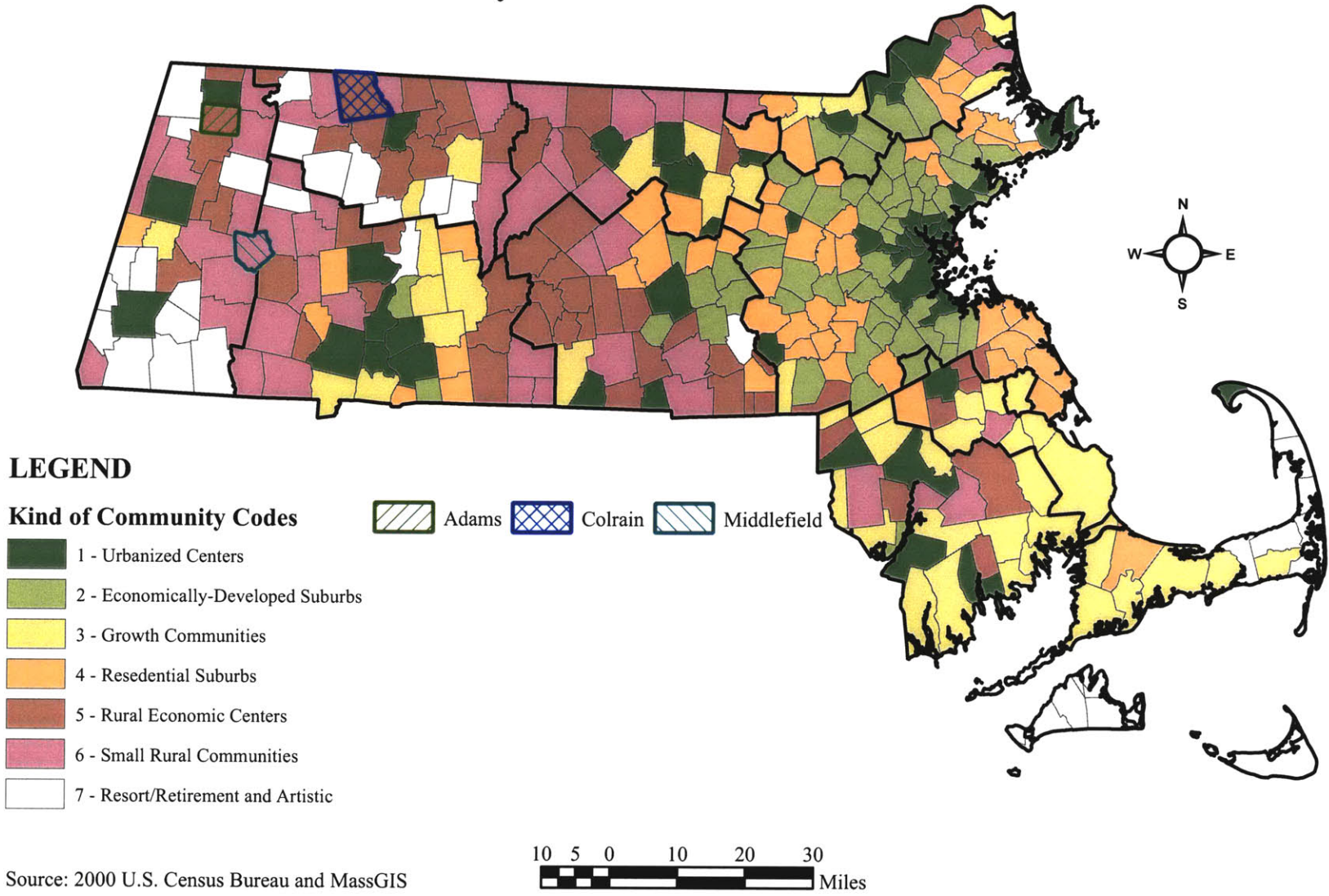
**Figure 5 - 2:  
Massachusetts Population Density**



Source: 2000 U.S. Census Bureau and MassGIS



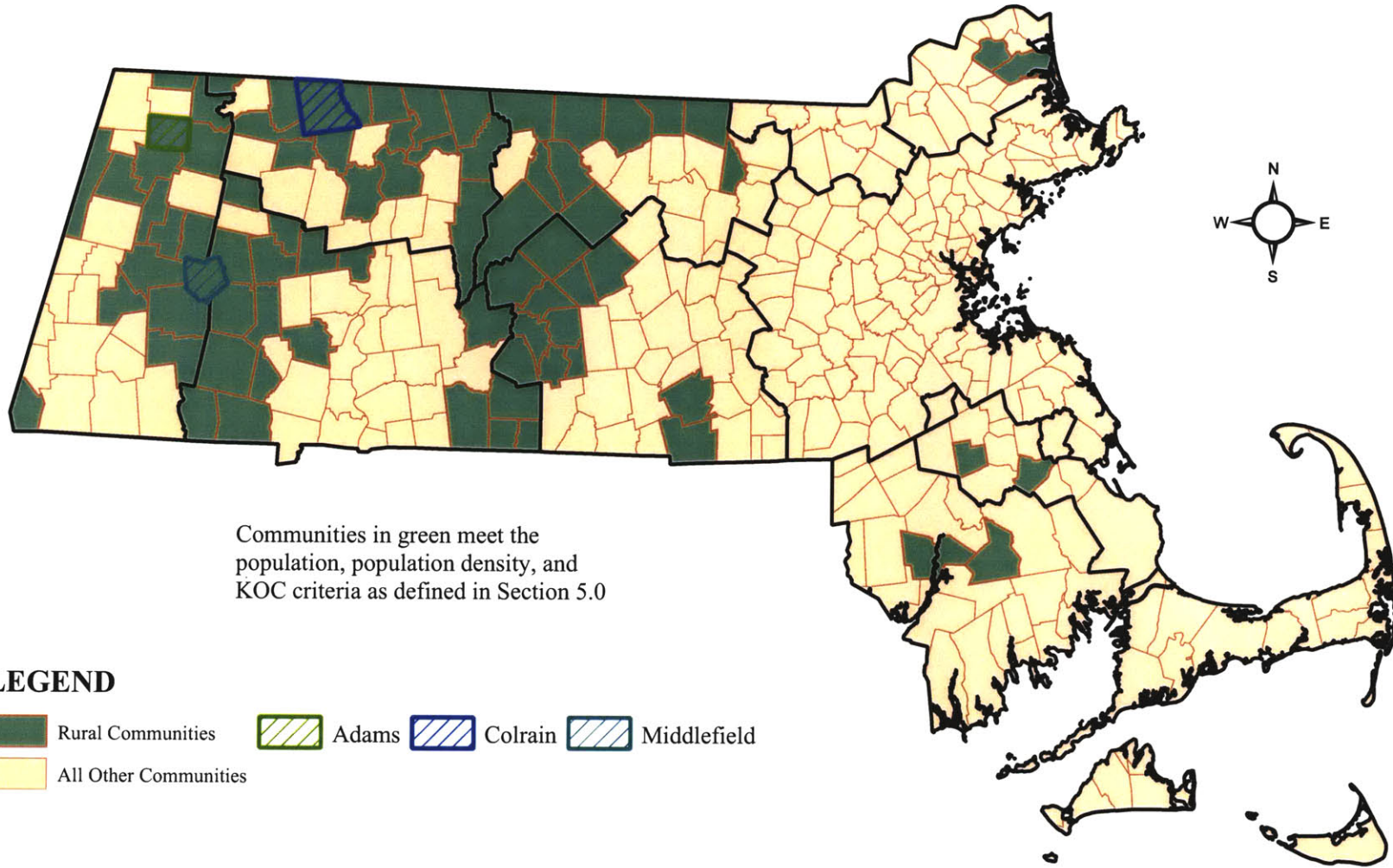
**Figure 5 - 3:  
Massachusetts Kind of Community Codes**



Source: 2000 U.S. Census Bureau and MassGIS



**Figure 5 - 4:  
Massachusetts Rural Communities**



Communities in green meet the population, population density, and KOC criteria as defined in Section 5.0

**LEGEND**

- Rural Communities
- Adams
- Colrain
- Middlefield
- All Other Communities

Source: 2000 U.S. Census Bureau and MassGIS





Table 5-1: List of Rural Municipalities in Massachusetts

Town	EDA	2000 Population	Population Density	1980-1990 Percent Change	1990-2000 Percent Change	KOC	EQV per Capita
Adams	1	8,809	384	-7%	-7%	5	\$36,724.00
Ashburnham	1	5,546	143	23%	2%	6	\$53,974.00
Ashby	0	2,845	120	6%	5%	6	\$56,002.00
Barre	1	5,113	114	7%	12%	5	\$43,335.00
Becket	1	1,755	38	0%	19%	6	\$134,530.00
Berkley	1	5,749	348	33%	36%	6	\$59,626.00
Bernardston	1	2,155	92	15%	5%	5	\$53,082.00
Blandford	0	1,214	23	6%	2%	6	\$67,080.00
Brimfield	1	3,339	96	22%	11%	6	\$60,230.00
Brookfield	1	3,051	197	17%	3%	5	\$42,386.00
Buckland	1	1,991	102	3%	3%	5	\$52,657.00
Charlemont	1	1,358	52	4%	9%	6	\$52,266.00
Cheshire	1	3,410	126	5%	-2%	5	\$44,923.00
Chester	1	1,308	36	8%	2%	5	\$53,778.00
Chesterfield	0	1,201	39	-9%	15%	6	\$59,708.00
Clarksburg	0	1,686	132	-1%	-3%	5	\$40,627.00
Colrain	1	1,813	42	12%	3%	5	\$51,631.00
Dalton	1	6,892	316	7%	-4%	5	\$51,046.00
Deerfield	1	4,750	147	11%	-5%	5	\$77,920.00
Dighton	1	6,175	276	5%	10%	5	\$63,200.00
Douglas	1	7,045	194	22%	30%	6	\$59,182.00
East Brookfield	0	2,097	213	8%	3%	5	\$55,602.00
Erving	1	1,467	106	-4%	7%	5	\$410,752.00
Florida	1	676	28	8%	-9%	6	\$180,195.00
Gill	1	1,363	97	24%	-14%	5	\$55,687.00
Goshen	0	921	53	13%	11%	6	\$75,784.00
Granville	0	1,521	36	8%	8%	6	\$66,614.00
Halifax	0	7,480	464	10%	15%	6	\$57,542.00
Hancock	0	721	20	3%	15%	6	\$134,534.00
Hardwick	1	2,622	68	5%	10%	5	\$50,070.00
Hatfield	0	3,249	203	2%	2%	5	\$89,384.00
Heath	1	805	32	34%	12%	6	\$59,355.00
Hinsdale	1	1,872	90	17%	-4%	5	\$66,641.00
Holland	1	2,407	194	38%	10%	6	\$65,074.00
Hubbardston	1	3,909	95	48%	40%	6	\$53,994.00
Huntington	0	2,174	82	7%	9%	6	\$48,507.00
Lakeville	0	9,821	328	20%	26%	6	\$74,624.00
Lanesborough	0	2,990	103	-4%	-1%	6	\$79,157.00
Lee	1	5,985	227	-4%	2%	5	\$79,676.00
Leyden	1	772	43	25%	17%	6	\$56,608.00
Middlefield	1	542	22	-1%	38%	6	\$64,725.00

Table 5-1: List of Rural Municipalities in Massachusetts (cont.)

Town	EDA	2000 Population	Population Density	1980-1990 Percent Change	1990-2000 Percent Change	KOC	EQV per Capita
Monroe	1	93	9	-22%	-19%	5	\$212,922.00
Monson	1	8,359	189	5%	7%	5	\$48,960.00
Montague	1	8,489	279	4%	2%	5	\$50,491.00
Mount Washington	0	130	6	35%	-4%	6	\$269,485.00
New Braintree	0	927	45	29%	5%	5	\$57,719.00
New Salem	1	929	21	3%	16%	6	\$58,461.00
Newbury	0	6,717	277	9%	19%	6	\$87,634.00
North Brookfield	1	4,683	222	13%	-1%	5	\$42,074.00
Northfield	1	2,951	86	21%	4%	5	\$72,217.00
Oakham	0	1,673	79	37%	11%	6	\$59,506.00
Orange	1	7,518	213	4%	3%	5	\$33,969.00
Otis	1	1,365	38	11%	27%	6	\$207,854.00
Peru	0	821	32	2%	5%	6	\$51,600.00
Petersham	0	1,180	22	13%	4%	6	\$68,689.00
Phillipston	1	1,621	67	49%	9%	6	\$54,807.00
Plainfield	1	589	28	32%	3%	6	\$85,423.00
Royalston	1	1,254	30	14%	9%	6	\$47,959.00
Russell	0	1,657	94	5%	4%	5	\$48,217.00
Rutland	1	6,353	180	9%	29%	6	\$49,181.00
Savoy	1	705	20	-16%	11%	6	\$58,659.00
Shelburne	1	2,058	89	1%	2%	5	\$61,342.00
Shirley	0	6,373	403	12%	4%	5	\$47,647.00
Southampton	0	5,387	191	3%	20%	6	\$59,703.00
Sutton	1	8,250	255	8%	21%	6	\$70,536.00
Templeton	1	6,799	212	8%	6%	5	\$44,326.00
Tolland	0	426	13	25%	47%	6	\$209,490.00
Townsend	0	9,198	280	5%	8%	6	\$54,355.00
Wales	1	1,737	110	18%	11%	6	\$45,310.00
Ware	1	9,707	282	6%	-1%	5	\$42,088.00
Warren	1	4,776	173	16%	8%	5	\$44,015.00
Warwick	0	750	20	24%	1%	6	\$52,268.00
Washington	0	544	14	11%	-12%	6	\$73,839.00
West Bridgewater	0	6,634	421	-1%	4%	5	\$95,778.00
West Brookfield	1	3,804	186	11%	8%	5	\$52,852.00
West Newbury	0	4,149	307	11%	21%	6	\$107,507.00
Williamsburg	0	2,427	95	3%	-3%	5	\$66,014.00
Winchendon	1	9,611	222	21%	9%	5	\$38,720.00
Worthington	0	1,270	40	9%	10%	6	\$72,761.00

## 6.0 CASE STUDY FINDINGS<sup>11</sup>

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### CASE I: MIDDLEFIELD

- NOT YET STARTED

#### A. Community Context

Middlefield is one of the most rural and most isolated communities in the Commonwealth. That it is one of the fastest growing communities in the state is primarily explained by its tiny population of 542, up thirty-eight percent from 392 a decade ago (2000 U.S. Census). The rapidly rising population indicates Middlefield is starting to face development pressure as a resort and second-home community.

Located halfway between Connecticut and Vermont, the town borders Hampden and Berkshire Counties at the western-most edge of Hampshire County and the Pioneer Valley. In 1783, the town was incorporated from the less desirable parts of four neighboring towns Becket, Chester, Peru, and Worthington; its location on a remote hilltop made it too difficult to access the four towns' respective centers. However, the 1800-foot altitude does provide excellent views of the neighboring countryside. Its small size and remote location—on the outskirts of the regional government boundaries and five miles from the nearest town center—contribute to the town's isolation.

Middlefield has little economic base. Although the center of town contains a dozen residences and the General Store structure, it lacks a viable town center in economic terms. In fact, the General Store has historically been the town's only economic contributor. Middlefield's center is purely physical; residents identify the absence of activity as a serious downfall. Once a dairy community, Middlefield lost much of its agriculture due to poor access. Agriculture is still a predominant means of employment, with small farms serving as the largest employer. Middlefield residents operate home-based businesses because of a forty-five minute drive to the nearest major artery that will then take you to a major employment center.

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<sup>11</sup> Information in this Chapter is derived from the Commonwealth of Massachusetts' Community webpages, Town websites, U.S. Census data, and interviews all of which are cited in "Works Cited".

In keeping with its agricultural background, Middlefield has hosted an annual agricultural fair for the past 146 years. Historically the town was also home to a flourishing woolen mill trade that boomed in the late 1800's; then known as Factory Village, the town's population peaked at over 1,000 people. One of the largest employers in town is a mail order business; a few local artisans and small agricultural enterprises comprise the remainder of the local industry profile.

Forty percent of Middlefield's land area is state-owned forestland, which cuts into the town's tax-base. Under the PILOT Program (Payment in Lieu of Taxes), the state is expected to pay taxes on its land; however, in this tight economic climate many communities—including Middlefield—have not received payment.<sup>12</sup> This decreased tax base can be a major economic drain for rural communities containing large areas of open space owned by the state.

Mostly volunteer, the local government operates on a six-hour per week schedule with three salaried town employees. The volunteer planning board is relatively inactive. Rooted in a reluctance to put any sort of restrictions on local property, the planning board has reportedly turned down historic district designation and has been unresponsive to requests from higher agencies to participate in grant or funding programs (M. Feldmesser, personal communication February 28, 2004).

## **B. Site History**

Like the community itself, Middlefield's brownfield site is small. However, for a community of this size the problem is large. In recent years, a key structure in the center of town was the General Store. Although the store is closed, the building now houses a 400 square foot U.S. Post Office and an apartment on the upper floor. At one time, this site contained the only local gas station. For the next year road crews repairing the main road through Middlefield will occupy the site. Although this occupation limits remedial

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<sup>12</sup> Comment made by contacts in both Middlefield and Adams

activity on the property, the Brownfields Steering Committee will continue to put the pieces in place to act once the opportunity arises.

Prior to closing, the general store served both economic and social needs of Middlefield. Aside from meeting the basic grocery needs of locals, the General Store was the sole meeting place. The social aspect is what residents indicate as the most pressing need. In a dispersed community, a central meeting place is essential for forging community relationships and meeting neighbors. A secondary goal is a store that can provide supplies such as milk and bread, to eliminate the thirty-minute drive to the nearest store.

Petroleum contamination on the site has not been cleaned or remediated due mainly to a lack of interest on the part of the owner and the town. As of October 2002, the Department of Environmental Protection (DEP) considers the site a Tier 1D<sup>13</sup> site. Despite requests by the DEP to take action on the site, the existing owners have done nothing towards cleanup. Estimated at \$100,000, the cleanup cost is significant considering the limited economic potential of the site. Whether the site and town can financially support economic activity is uncertain. Interested buyers have visited the site; however, most shy away when learning of the site complications. Any potential purchaser becomes quickly aware that the liabilities on the site are greater than the value of the building.

The store had one stable owner until the 1970s, when its use as a true general store terminated. Since the 1970s, a succession of owners have struggled—and failed—to support a business at the site. Speculation holds that the most recent owner abandoned the property, owes back property taxes to the town, and owes mortgage payments to the bank. Residents contend that the limited work schedule of Town Hall precludes the volunteer staff from taking the initiative to collect back these taxes.

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<sup>13</sup> Tier 1D is a site/release where the responsible party fails to provide a required submittal to DEP by a specified deadline (<http://www.state.ma.us/dep/bwsc/sites/statedef.htm>)

The adjacent residential structure is tied to the general store property through a shared and inadequate septic system. This connection, as well as the poor quality of the system, will influence the sale of both properties. If the owner of the residential structure disconnects the General Store from the system, there will be no septic treatment for that building. Because the septic system runs with the residence, any prospective owner of just that property (which is presumably clean) will likely not want involvement in the General Store property. This aspect simply complicates sale of the property and increases the cost of redevelopment. As an additional complication, high levels of sulphur in the surrounding soil preclude neighboring residents from using groundwater. A number of residents have formed a collective to share a water treatment system of which the store was once part. These residents have indicated they will not continue to support commercial water use on their system.

### **C. Stakeholders**

Middlefield has barely just begun the brownfields process. Organized by a group of residents, the goal is to clean and revitalize the site for public health, aesthetic, and social reasons. Prompted by lack of activity by local government and the property owners, a group of concerned citizens organized a Brownfields Steering Committee in the fall of 2003. Concerned that the site was abandoned and the building deteriorating, the grassroots Brownfields Steering Committee meets monthly to explore their options and formulate a reuse plan. During the course of my interviews, the Committee secured a pro bono lawyer to assist in setting up a nonprofit organization. As noted earlier, the 2002 Federal Brownfields Law as well as Commonwealth of Massachusetts legislation requires site ownership to engage in remediation activities. In lieu of local government willingness to participate, only as a nonprofit charitable organization can the Committee participate in brownfields remediation and redevelopment programs. Ownership enables the Committee to gain a better understanding of the level of cleanup required and the possible reuse of the site.

Middlefield residents and local officers bring limited knowledge of brownfields legislation. One Brownfields Steering Committee member is an architect who has worked on large-scale remediation projects. His knowledge and office location near Commonwealth offices in Boston have been noteworthy contributions to the Committee's progress. The Brownfields Steering Committee also enlisted the assistance of the Hilltown Community Development Corporation (CDC), who serves the economic, social, and educational needs of eleven rural communities in the Berkshire Hills. The Hilltown CDC made specific connections with the Commonwealth on the town's behalf, including providing economic data to qualify Middlefield as an EDA community. When this research began, Middlefield did not fit the Economically Distressed Area criterion required of certain state funding options. However, significant assistance by the Hilltown CDC allowed Middlefield to successfully attain EDA status.

#### **D. Policy Context**

Participants report that the bank took over the property for a short while and commissioned a soils analysis by DEP in the summer of 2003. The investigation was never finished and the property returned to the owners. Partial results from that analysis indicate kerosene and heating oils, general sewage, and trace amounts of other contaminants in the soil. Neither the bank nor the town is interested in claiming responsibility for the site. The current owners have made no progress towards cleaning the site.

### **CASE II: ADAMS**

**- NOT COMPLETED**

#### **A. Community Context**

Adams is a traditional blue-collar town; referred to as the "quintessential manufacturing community" it has been losing its economic base over time. At the turn of the century, Adams' population nearly reached 14,000; however, manufacturing job losses resulted in a significant decline. With a current total population of just over 9,000, the town just

barely meets the rural criteria. Its location in the Berkshire Valley and at the upper Northwest corner of the state strengthens its rural and remote characteristics.

The town has a high percentage of low and moderate-income residents, a high elderly population, and subsequently a high tax burden. Twenty percent of the population is over sixty-five years of age. Adams is the only case study selected for this research that is also a recognized Environmental Justice (EJ) Community by the Commonwealth.<sup>14</sup> Adams fits the EJ Policy's poverty criteria; the median household income is \$32,161 and only approximately thirty percent of its residents have median household incomes greater than \$50,000 (RFP 2002). Adams recently lost 102 jobs when a long-term and large employer relocated to new office construction in the neighboring city of North Adams.

Nevertheless, population and wealth in the area is growing due to the town's proximity to natural resources and a growing supply of cultural attractions in Western Massachusetts. Adams itself is home to Mount Greylock, the highest peak in Massachusetts and a popular recreation destination.

Adams' government is large compared to many neighboring communities. As the third largest community in the Berkshire Region, Adams actually has a Community and Economic Development Department. Consisting of four staff, the department is largely funded by USDA Community Development Block Grant (CDBG) funding because of its status as a poverty community. However, that funding must be renewed annually. Still, government resources stretch thin. Donna Cesan, Director of Community Development, equates Adams' local agenda to a community of 100,000. There are few people doing many jobs; staff does not have the time to specialize, nor can they make a large investment in a program without knowing it will be practical and beneficial. Adams also struggles with a town government that possesses little job-specific education or training.

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<sup>14</sup> Environmental Justice (EJ) communities are defined by the Massachusetts EJ Policy as neighborhoods (census blocks) meeting one of the following criteria: (1) median household income is at or below 65% of the average Massachusetts income; (2) 25% of the residents are minority; (3) 25% of residents are foreign born; or, (4) 25% of residents lack English proficiency. These locations tend to be located in densely populated urban areas. Encompassing less than 5% of Commonwealth land, these communities represent 29% of the population (Source: The Environmental Justice Policy of the EOEA)

Ms. Cesan is the only professionally trained planner in her peer communities and one of a few in Adams.

## **B. Site History**

Adams' two brownfields sites discussed in this report are the McDermid Graphics Building and the Plunkett Memorial Hospital. The McDermid Graphics Building, a former mill, shut down in spring 2002; it has been vacant for almost as long. The town worked with staff at DEP to explore the issues surrounding the site. Despite its known contamination under Chapter 21E, the Commonwealth's cleanup law, DEP did not identify the site as a priority.<sup>15</sup> Containing hazardous material, the site requires a Phase II Comprehensive Site Assessment to determine the risks posed to the community.

The town needs to secure feasibility funding to progress with cleanup and eventually revitalization. The responsible party is still solvent, present, and trying to sell the property. Although the town cannot afford to purchase the site, it remains a local redevelopment priority. Cesan referred to post-industrial properties in nearby towns that have stood decrepit and empty with no redevelopment plan as her motivation to promote cleanup and reuse in Adams.

Originally built in phases between 1917 and 1940, the Plunkett Memorial Hospital closed in 1973. After ensuing uses failed, the Town of Adams purchased the site for \$460,000 in 1987; the purchase occurred during a period of economic prosperity in Massachusetts and when Adams had a surplus of State revenue. Its location in the center of town, its historical prominence, and the potential of reuse prompted the Town's purchase. Nearly three acres were immediately divided off the seven-acre site as open space for a neighboring school, thus making the property eligible for school-building assistance and allowing the Town to "get its money's worth" for the purchase. Subsequently, the town

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<sup>15</sup> DEP recorded the McDermid building as Tier 2 site, which means permits are not required and response actions may be performed under an Licensed Site Professional (LSP). Tier 2 sites are least critical of DEP's Tier-ranking system. The LSP removes DEP oversight from the site and reduces DEP's workload, however the low priority also reduces the incentive for remediation and opportunities for assistance.

was capable of re-selling the remaining 4.4 acres and buildings to a developer for only one dollar in September 2003.

The Plunkett Hospital site is contaminated with lead, asbestos and other hazardous materials within the building. The pre-acquisition environmental site assessment found underground storage tanks (USTs) with no indication of contamination; these were removed by 1998. The building was in serious disrepair. Imminently a public health hazard, neighbors feared that local schoolchildren would find access to the vacant building and endanger themselves. MassDevelopment completed the Phase I Site Assessment to determine the type, amounts, and location of contaminants. Although MassDevelopment was prepared to provide technical and financial assistance for the cleanup, the developer abstained. The developer decided to do the cleanup without the assistance of MassDevelopment because he believes he can get better rates partially by providing local crews and services and he wanted to avoid the perceived added time and cost associated with government grants and loans. Cleanup is now expected to cost \$250,000, half as much as initial estimates. The building will be preserved and reused as high-end condominium housing once asbestos removal is complete.

### **C. Stakeholders**

The Town of Adams received a unique amount of assistance from MassDevelopment. Delayed action on a proposed development at Mount Greylock, caused then Governor Jane Swift to order MassDevelopment to provide technical assistance specifically to Adams to improve their local economy. MassDevelopment has likely afforded Adams a disproportionate amount of time and funds than would be provided to other small towns in Massachusetts. MassDevelopment launched a micro-loan program, identifying sites for development, identified local resources including developers and contractors, conducted a market analysis, managed the Request for Proposals and developer selection process at the hospital site, and helped the town apply for grants. MassDevelopment's initial analysis of the site indicated that redevelopment would not be feasible on the site.

They found a market gap in high-end housing—likely because nothing of its kind existed in Adams—which was able to entice a local developer.

#### **D. Policy Context**

Adams has other contaminated sites; of the forty-six recorded sites or releases recorded by DEP, some have seen cleanup and reuse. A small gas station site was cleaned and redeveloped as a parking lot and small neighborhood park. In the early 1980s, a burned-down, abandoned former mill was redeveloped into an industrial park on the North Adams border. Although brownfields programs were not developed at that time, the town received significant state and federal assistance for this project. A number of other vacant, large manufacturing buildings such as the McDermid Graphics Building are ripe for redevelopment.

At this point, there has been no comprehensive assessment of all the brownfields sites in Adams. When and if the Berkshire Regional Planning Council (BRPC) receives an EPA Assessment Grant, Adams hopes that it will be a beneficiary. Adams submitted a letter of recommendation in the BRPC’s application; however, the town must still apply to the BRPC for assistance, competing with other towns in the region. A Site Assessment grant will identify local priority sites in Adams and provide a base estimate of contamination. Without state or federal assistance from either DEP or EPA, the current government in Adams would not take on brownfields projects. Local officials have limited knowledge and resources to deal with the variety of complex issues involved in the brownfields process. Ms. Cesan argues that, although the town has used USDA resources in the past, the federal programs tend to be much more complicated and thus difficult to administer in a small community.

**A. Community Context**

A small community of approximately 1,750 people, Colrain is located in Northwest Massachusetts. Formerly a mill town, Colrain is now a bedroom and retirement community with a large number of transplants from New York and New Jersey. The primary industry is agriculture, with some cottage industry and business; manufacturing historically maintained a significant presence in Colrain as indicated by the properties described below. In August 1996, the town lost its largest employer and taxpayer, American Fiber & Finishing (AF&F). The cotton-bleaching mill had been in continuous operation for 150 years. The loss of this major employer devastated Colrain's economy; 160 people lost their jobs as a result of the plant closing. In total, the entire mill complex—made up of two sites—provided as many as 500 jobs for Colrain. The Town's unemployment rate is nearly eight percent—the fifth highest in the state; nearly eleven percent of the community's residents live in poverty (EPA Fact Sheet). According to project consultant Kathy McCabe, Colrain is one of the few communities in Massachusetts where housing prices have not increased; she attributes this mainly to the blighting<sup>16</sup> influences of the derelict mill properties.

The town government structure consists of a three-member Board of Selectmen, seven full-time employees, and eight part-time employees; for the size of the community, this is a remarkably large professional and paid staff. The development around the abandoned mill properties stimulated both the volunteer and paid government staff to push hard for site improvement in the last eight years, since the mill closing. As a result of this project, Colrain's government is at its largest. Many other rural communities do not have a government this deep.

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<sup>16</sup> Blighting refers to the decrepit state of the mill buildings. Fire and abandonment left the Upper Mill in terrible disrepair. The visual clues provided by these buildings connote a struggling economy and thus decrease the value of town property. Likewise, these sites could be significant contributors to the tax base themselves.

## **B. Site History**

Of the three known contaminated properties in Colrain, two will be discussed in this report. The first, now known as the Upper Mill Above-ground Asbestos Abatement Project (Upper Mill), produced finished goods such as cotton and polyester based products. After the mill closed in 1980, a suspicious fire destroyed the building in 1989. Because of the level of neglect including non-payment of taxes and failure to comply with DEP's clean up actions, the town of Colrain took the site by eminent domain. The site is a prominent location in Colrain. It is located on a main, local and inter-town thoroughfare, just outside the central business district, and it abuts a residential neighborhood.

The second site in Colrain, Lower Mill, was the former cotton-bleaching mill originally owned by AF&F discussed above. Lower Mill is located less than a mile from the Upper Mill site. At one point in the town's history, both sites were operated as a single mill complex. However, in the 1960's mill owners began disinvesting in the community and selling property. As a result, the mill housing was sold to individual owners and the Upper Mill was sold to a private party.

The town first sought assistance for the Lower Mill property when the mill closed in 1996, hoping to reverse the significant decrease in employment and tax base within the town. Colrain's initial goals were to facilitate the redevelopment of the AF&F site to create jobs, stabilize the local tax base, and establish a process for redeveloping other brownfields in the Town (EPA Fact Sheet 1998). Once the process was established, Colrain added the protection of human health and the environment as a priority in light of the contamination found at both the Upper and Lower Mill sites. Town goals also include assessing the potential risks posed to the North River and the water supply for the nearby towns in combination with other efforts to restore the North River habitat for salmon (EPA Fact Sheet 2000).

A Phase I site assessment made possible by an EPA Pilot Grant at the Lower Mill site found more extensive contamination than originally anticipated, including dioxins, solvents, oil, and PCPs in a protected Zone II public water supply (EPA Fact Sheet 2000). The owner of the Lower Mill demolished all the property except for a warehouse and two small sheds to eliminate heating and maintenance costs, an act that further threatened water supply issues. Although the Lower Mill owner complied with all DEP required action, the cleanup progress has been slower than Colrain would like. A lawsuit taken by AF&F against another owner to share responsibility for cleanup further delays remediation activity on the Lower Mill.

On a much swifter schedule, cleanup of the Upper Mill was completed in 2002. Contaminated with heavy metals and asbestos, the building became a health risk when it was destroyed by a fire. Given the site's proximity to the center of town, the presence of airborne asbestos was a serious public health concern. During the cleanup, a small amount of oil was found in the ground. However, the contamination was simple and the cleanup easy.

While the complex cleanup on the Lower Mill continues, the town is in the process of determining its future use. The Upper Mill was originally intended for water infrastructure to support a separate housing development. Its future use as infrastructure went hand-in-hand with Colrain's Business Retention and Growth Project. The water treatment plant would have complemented the forty mill houses recently completed, filling a necessary gap in the water supply. However, technological changes have allowed the town to avoid using this site for that purpose. Colrain is now looking for an economic development use to fill the site. The site was un-developable until 2003, when the three-year waiting period triggered by the eminent domain taking ended. Upon expiration, a neighboring wood truss manufacturer may expand his business onto the Upper Mill site. The remainder of the site on the opposite side of the North River contains new recreation fields for local youth.

### **C. Stakeholders**

Colrain usually looks to volunteer groups to take the lead on all varieties of projects. The Town established the community-based Brownfields Task Force to guide redevelopment of brownfields, starting with the AF&F site. Although formed to obtain grants, the Brownfields Task Force eventually hired a grant-writer who secured all the grants and loans described below for Colrain. A significant contribution, the grant-writer brought in Franklin Regional Council of Government (FRCOG) assistance and became the project manager once funding was secured. Colrain's legislator strongly supports economic development, and specifically reuse of properties. He has been a crucial supporter in securing state and federal funding. Finally, the town engaged in a highly inclusive and extensive public process. As a result, residents were extremely supportive of the project.

### **D. Policy Context**

Colrain received a \$590,000 Small Cities Community Development Block Grant (CDBG) from the Massachusetts Department of Housing and Community Development (DHCD) for clearance and demolition. The condition of the Upper Mill structure was dire enough to qualify Colrain for the CDBG's "slum and blighted conditions" criteria. The reuse of the site also benefits low- and moderate-income persons because of Colrain's economic status and ameliorates an imminent threat to public health and safety.

The balance of funding came from a Brownfield Revolving Loan Fund obtained from EPA and administered by FRCOG.<sup>17</sup> Colrain also received two EPA Brownfields Site Assessment Pilots. The first was awarded to conduct Phase I site assessments on specifically the Lower Mill, estimate costs of cleanup, and create cleanup and redevelopment plans. The funds were also used to engage in an extensive public campaign to garner citizen involvement in all phases of the project. Community support was huge; residents were not asking "why?" but instead "how soon?"

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<sup>17</sup> Colrain's outside Grant Administrator convinced FRCOG to apply to the EPA for a Rural Communities Brownfield Revolving Loan Fund for Colrain and Greenfield. Then, Colrain applied to FRCOG for funding through the loan fund.

The second EPA Supplemental Assessment Grant targeted specifically the two mill sites for Phase II assessments. Furthermore, Colrain participated in the Commonwealth's Environmental Insurance program, which provides low-cost environmental insurance to protect parties from unanticipated future contamination. This insurance paid off for Colrain who discovered additional contamination on both sites during the cleanups. Combined with technical and other non-monetary assistance, Colrain has received over \$1.2 million in grants and loans to support assessment, cleanup, and reuse at these two sites.

## **7.0 ANALYSIS OF FINDINGS**

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### **7.1 RURAL BROWNFIELDS IN MASSACHUSETTS**

As described above, rural communities in Massachusetts have brownfields sites that provide potential opportunities for community revitalization. Since 1998, thirty-eight projects in twenty-nine rural communities have received financial and/or technical assistance from Massachusetts' brownfields programs (BRF and BRAC Project Update 2003). As mentioned earlier, there is no comprehensive inventory of rural brownfields sites in Massachusetts; however, it is reasonable to assume that each of the seventy-nine rural communities has at least one brownfield site. After speaking with the thirteen Regional Planning Agencies and soliciting potential communities through the Massachusetts municipal planners list serve, twenty-five communities were contacted as possible case studies. Of the eight who responded, three case studies were selected based on their willingness to participate and the availability of information.

The discussion that follows culls information provided in the previous chapter and through interviews with local officials, residents, private consultants, and state and regional agents representing each of the three selected case study communities. It begins with analysis of the major barriers to brownfields redevelopment as described by the interviewees. Although respondents indicated a range of barriers, those discussed below represent the most significant hurdles for these rural communities, including limited local capacity, access to resources, and local economic constraints. Next, the chapter highlights the key factors that enabled the case study communities to surpass some of these hurdles. These include a straightforward remediation, a favorable local economy, an outside private consultant, and access to specific government resources. The following chapter provides recommendations for both rural communities and state agencies, which address the specific concerns outlined below in this chapter. Although each community's story is unique, many of the obstacles and opportunities discussed below can be extrapolated to any rural community.

## 7.2 BARRIERS TO REUSE

The brownfields remediation process, including community involvement, site inventory, assessment, remediation, and reuse, is complex and the process can take more than five years to complete. Communities, especially smaller communities, encounter barriers at any point that can derail the process. In general, however the most significant hurdle is getting started. Identifying where to begin and how to navigate from the assessment, to the cleanup, and beyond to the reuse stage makes starting the process overwhelming to many rural local governments. As a result, creating healthy and productive sites can seem a mystery at best and a nightmare at worst for many smaller communities.

Through these case studies, the most significant barriers identified in the reuse of brownfields include contamination, access to funding, limited local economy, access to state and federal government resources, limited local capacity, ownership, and the complexity of the brownfields process. Urban and rural sites share some of these obstacles. For example, all brownfields sites, whether rural or urban, must overcome the perception of contamination. There exists an inherent fear that one will find additional or more complex contamination during site assessment or cleanup, this is not always true. However, when contamination is more complex, the cost and time required for remediation increases dramatically. Additionally, both urban and rural communities struggle to identify brownfield site owners and the party or parties liable for the clean up costs. Furthermore, securing financing for the clean up is probably one of the greatest obstacles to a brownfields site in both rural and urban communities. Yet, the funding options and accessibility available for brownfields projects seem to be more plentiful for urban communities. In fact, according to 2003 Brownfields program data provided by DEP, at least seven urban brownfields projects are funded for every one rural community project (BRF and BRAC Project Update 2003).

The three rural communities studied lack the resources and local capacity of urban communities. These resources range from the lack of paid staff, inadequate access to government resources, and lack of experience with complex planning issues. The

capacity is a reflection of local employees, community knowledge, and the local economy. However, the major differences across the three case studies exist because of size, government capacity, and outside involvement. Smaller communities like Middlefield struggle more than larger rural communities like Adams, but both encounter more barriers than larger cities.

### **7.2.1 Inadequate Access to Financial Resources**

A common obstacle in all communities dealing with brownfields remediation is the acquisition of the necessary funding. While some projects benefit from significant private funding, most often, the reuse of brownfields involves both public and private funding. As an initial obstacle, small communities are too small to attract most federal or state funding on their own. For example, a small municipality cannot apply for Community Development Block Grants (CDBG) because they are too small. “We do not always fit the model and if we do, we are not likely to be at the top of the priority list.” (M. Burkart, personal communication March 16, 2004). Furthermore, applications to these programs require more time and resources than exist in rural and small town governments. Instead, small communities must find a larger agency willing to administer a region-wide grant. Following in the footsteps of the Pioneer Valley Planning Council and the Franklin Regional Council of Governments, many Massachusetts Regional Planning Agencies (RPAs) are beginning to use this strategy to gain EPA Site Assessment grants for their communities. However, even if the RPA receives these Site Assessment grants, each community must still fight for an allotment of funds.

In addition to finding funding, small communities with little local governmental capacity and experience have trouble finding the grants and other monetary tools available for brownfields. These communities lack the connections to Massachusetts’ funding networks. Respondents in both Colrain and Adams agreed that finding and setting up remediation tools and funding sources is difficult for rural communities because they do not know where to look first (D. Cesan, personal communication February 27, 2004, J.

Leitch, personal communication March 4, 2004, and K. McCabe, personal communication March 16, 2004). Furthermore, when Middlefield does receive State grants, these funds are directed to road repairs and other infrastructure needs (M. Feldmesser, personal communication February 28, 2004). Therefore, residents in Middlefield are trying to access funding through a means other than local government. As a result, they will set up a non-profit organization to receive funds and subsequently obtain ownership of the site. In order to facilitate rural brownfields redevelopment, the towns need to know which resources are available to them; better outreach, a designated ombudsman, and improved connections to rural communities can help.

### **7.2.2 Poor Local Economy**

A weak local economy is a significant barrier to rural economic development. A weak economy translates into little private capital and land that is low in value. Land values in particular are linked to few transportation routes, distance from urban labor markets and resources, the absence of local business to support the tax base, and a sparse population (D. Carver, personal communication March 11, 2004). As such, early knowledge of the intended future use of a property is essential to determine the appropriate level of cleanup. MassDevelopment's advice to Adams was to identify the future use of the Plunket Hospital at the onset of the planning process (A. Yates, personal communication March 19, 2004). MassDevelopment's advice implies that without a future owner or an intended use for the site, the site is not worth the clean up effort. In other words, MassDevelopment does not want to invest funds in a clean up effort unless a town can guarantee that the site will be used to generate some kind of income as a result of the clean up (A. Yates, personal communication March 19, 2004). This type of policy suggests that the future use of a site is the driving factor behind the appropriate level of clean up. In addition, this future use sets the development goal for the site, which in turn factors into the level and extent of the clean up effort. In rural communities, it is unusual to have potential developers stand in line for site acquisition. In fact, the larger question asked by rural municipal governments is: 'What can we attract to the site?' At many rural sites, economic generators may not be the highest and best use of a brownfields.

As discussed in the case study, the town of Adams is relatively poor. With greater than fifty-two percent of residents at low- or moderate-income and a high elderly population, investing in brownfields projects instead of senior programs or affordable housing is an enormous risk for such a small town (D. Cesan, personal communication February 27, 2004). In addition, existing owners are not reinvesting in Adams. Rather, these firms—many of which are not locally operated—have abandoned their facilities (D. Cesan, personal communication February 27, 2004). As such, the town is already home to a number of large, vacant industrial buildings and is not in the position to create additional commercial land for development.

Middlefield has no significant economic capital base. Its businesses structure is limited to a few home-based agricultural and mail order businesses. Residents concede the town is too small to support a store on the general store site (M. Feldmesser, personal communication, January 20, 2004). Although general stores are a predominant and appreciated amenity in small communities, they are not known to be economic generators. With the current budget crisis, the town's regional school system is being closed (J. Joseph, personal communication February 19, 2004). Even though Middlefield is in desperate need of an increased tax base and jobs, the local government is in no position to provide financial assistance or acquire liability to remediate contaminated properties. Consequently, the town will not use its power of eminent domain to take the general store property (J. Joseph, personal communication February 19, 2004). Because of the local economic crisis, Middlefield, if it wants to pursue brownfields redevelopment, will have little or no support from its local government and it is unlikely to gain the interest of outside developers. Instead, Middlefield's only obvious recourse for remediation would be to secure public funding for site assessment.

Because of these and other factors, a new economic strategy, including new industry or commercial ventures, is needed to put these facilities to a new use. Most Western Massachusetts communities do not have the economic engines that drive other

communities in the Eastern portion of Massachusetts (J. Leitch, personal communication March 4, 2004). Cesan argues that Adams is now one of the fastest decreasing populations due to significant manufacturing and business job losses. Thus new, innovative strategies to recovering cost on contaminated sites, such as educating the local developer network, must be created to promote reuse of the existing properties. Similarly, rural communities need assistance with market analyses or economic assessments to highlight viable and practical reuse of brownfields sites.

### **7.2.3 Inadequate Connections to Government Resources**

Access to government resources is a significant hurdle to small communities largely because of the limited local staff and the distance to state government headquarters. As a result, rural communities perceive state and regional agencies as less accessible and not small town friendly. This perception is particularly poignant when many states, including Massachusetts promote planning agendas that encourage growth in urban areas. Furthermore, Massachusetts agencies are well known for being difficult to access. Having worked in rural Virginia, Cesan of Adams noted the differences between government/municipality interactions in the two states. “In Virginia there is a value awarded to partnership between the state and local government; that relationship does not exist in Massachusetts primarily because of local home rule.” (D. Cesan, personal communication February 27, 2004). Not knowing whom to contact is a principal hurdle. A respondent in each case study indicated a desire for a sole point of contact to which they could direct preliminary questions.

Small towns such as Middlefield are skeptic of larger government agencies, as well as their own (M. Feldmesser, personal communication February 28, 2004). Lapping, Daniels and Keller argue this mistrust increases as government is more removed from the local level (Lapping, Daniels and Keller 1989). As volunteers, Middlefield’s government is particularly hands-off, either ignoring state inquiries or leaving issues to property owners to handle (M. Feldmesser, personal communication February 28, 2004). In part, the perception of larger governments is a result of current funding allocations.

Middlefield residents were told that Federal funds are prioritized to other larger communities with a greater concentration of contamination such as Pittsfield (J. Joseph, personal communication February 19, 2004). These comments and perceptions only further the sense of mistrust or abandonment felt by rural communities, specifically in Western Massachusetts towns.

Furthermore, respondents expressed a lack of hands-on involvement from state agencies. Cesan has never seen DEP do a seminar on brownfields. When Adams posed questions to DEP regarding a local 21E site, they received a generic brochure in response (D. Cesan, personal communication February 27, 2004). According to respondents, mailings are not sufficient outreach; the town needs to know in advance that investing the time to research a program will produce results (D. Cesan, personal communication February 27, 2004). Without a prominent legislators backing, these communities feel there is no one pushing for support and no one at the State level actively assisting (J. Joseph, personal communication February 19, 2004). These comments reiterate the mistrust of state and federal government in rural communities.

Not all the local government or larger regional agencies are very comfortable with the young and evolving brownfields process. Most regional agencies are just beginning to apply for brownfields funding. Generally, the regional planning or housing agencies use programs with which they are comfortable, such as housing rehabilitation, water line extensions, and streetscape and roadway improvements (K. McCabe, personal communication March 16, 2004). McCabe further argues that regional agencies rely on these programs to fund their operation and employees; therefore, they hesitate to take risks with unfamiliar programs. When the Franklin Regional Council of Governments (FRCOG) administered a Brownfields Revolving Loan for Greenfield and Colrain, it did so because of a Director aware that the FRCOG could help these communities and willing to take a risk (K. McCabe, personal communication March 16, 2004). The Hilltown CDC could administer a brownfields-related grant if time provided; however, they currently administer many different programs including economic development,

housing development, general planning, Executive Order 418 certification, and the expansion of community facilities (M. Burkart, personal communication March 16, 2004). Adding brownfields redevelopment to the Regional planning toolbox requires education among the regional agencies as well as the local actors.

#### **7.2.4 Limited Local Capacity**

Rural communities have little local capacity, which is essential in order to find developers, community leaders, business leaders, capable and willing to participate in the brownfields process. According to Yates, the programs and the money exist, the key is finding the community leaders, experts, and businesses who can help (A. Yates, personal communication March 19, 2004). Colrain brought in an outside consultant to assist with both brownfields-specific and economic development goals. Adams' progress was largely attributed to the state-mandated assistance of MassDevelopment. The need for outside consultants reiterates the inability of a purely local solution to brownfields redevelopment. In absence of an active government, Joseph argues, "the average person is not really set up to go and fight with the Massachusetts bureaucracy" (J. Joseph, personal communication February 19, 2004). Residents cannot maneuver the brownfields process on their own. Furthermore, local government employees often do not have the professional experience or expertise to approach the brownfields process. A relatively young policy option, many rural planners and CDCs including the Hilltown CDC have no prior experience in brownfields redevelopment. Local planning efforts are focused primarily on the perceived essential needs of small communities, such as schools, infrastructure, and open space preservation.

#### **7.2.5 Ownership**

Ownership and site access is a significant step in the brownfields process for two reasons. First, federal and state legislation requires site access, through either ownership or permission by the owner in order to conduct Phase I Environmental Site Assessments. Often municipalities resort to the power of eminent domain to take ownership of a

property in tax default; however, this strategy is complicated and adds three-years during which the site cannot be reused. Second, ownership indicates liability for the contamination and subsequently responsibility for financing the cleanup. Ultimately, the property owner is responsible for financing and seeking out assistance for remediation activity. However, economic development and public health concerns force towns to get involved when the owner is missing or inactive.

McCabe identified getting access to the site as one of Colrain's major issues (K. McCabe, personal communication March 16, 2004). Colrain obtained access of the Lower Mill site through a somewhat coerced negotiation. Permission was granted only when a gross violation of the Massachusetts Fire Code led the owner to realize he should cooperate with the town (K. McCabe, personal communication March 16, 2004). The Town of Adams also finds the issue quite difficult because of the research required to find owners (D. Cesan, personal communication February 28, 2004). At many contaminated properties, the owner is from a large corporation or has abandoned the property and is no longer paying taxes. Unless the owner has local roots, they usually have no personal stake in the town. In order to facilitate redevelopment, owners must be present, interested, and take responsibility if they are liable for the cleanup.

### **7.3 SUCCESS FACTORS**

According to Leitch, "If the Plunket Hospital reuse lacked any one of the ingredients it would not have happened." (J. Leitch, personal communication March 4, 2004). In Adams, the town benefited from direct assistance from MassDevelopment, the right amount of public subsidy, a commitment by citizens and the town, and a developer with his own resources and strong local ties (J. Leitch, personal communication March 4, 2004). Furthermore, it helps to have strong state legislative support such as in Colrain. The following section discusses the more prominent success factors encountered in the three case studies, including limited contamination, a favorable local economy, strong citizen support, and the assistance of a specific government or private partner.

### **7.3.1 Minimal Contamination**

Environmental issues are not reliable indicators of success. However, the less complicated the contamination on the site, the more quickly a project will see redevelopment. From the time of identification, development of a remediation action plan can take up to five years and still be within legal boundaries (K. McCabe, personal communication March 16, 2004). This period can be quite frustrating for communities. In Colrain, where the Upper Mill is still in the cleanup phase while the less contaminated Lower Mill is cleaned and ready for development, the benefits of a simple cleanup are clear. Likewise, in Adams the asbestos removal at the hospital did not require demolition or any below ground remediation. Therefore, these two properties will see reuse within ten years of identification, a respectable time frame for brownfields redevelopment. Complex sites like the McDermid Graphics Building in Adams languish because they are not as attractive to private developers and not a Commonwealth priority site.

### **7.3.2 Strong Local Economy**

Favorable local economic conditions can facilitate the reuse of contaminated sites. Most communities with no expanding businesses struggle to attract new business. Colrain benefited from existing industrial businesses willing to expand onto the cleaned sites. A truss factory adjacent to the Upper Mill property will likely expand its operations onto the site soon and the industrial neighbor at the Lower Mill may move onto the site once it is completely clean (J. Sturgeon, personal communication February 28, 2004). Although not contributing to the cleanup, their presence reduces the headache of securing new and outside users. Communities like Middlefield do not have the benefit of a willing business partner. Furthermore, Colrain's project sites lie within the Greater Franklin County Economic Target Area as well as the town-designated Upper Mill Economic Opportunity Area. The location allows Colrain to offer Tax Increment Financing, local real estate tax incentives, and access to state tax incentives to a qualified business through the Economic Development Incentive Program coordinated by the FRCOG. Through this program, Colrain received assistance from local banks providing in-kind services and was made

aware of additional funding sources (EPA Colrain Fact Sheet 1998). Colrain's economic situation in regards to these properties was certainly unique for rural communities.

### **7.3.3 Public Support and Understanding of Brownfields**

Citizen support is an integral component of the brownfields process; research indicates that communities should be involved from the beginning (NADO 2003a, Singer 2002). Local votes are crucial when government employs the power of eminent domain, buys a contaminated property, or allocates town funds for remediation. Colrain benefited from substantial public support as a result of an extensive public process (K. McCabe, personal communication March 16, 2004). The town held meetings with residents from an early date in which they explained the brownfields concept, the redevelopment time-frame, and community goals. The Town also created a Brownfields Task Force made up of residents and town officials. Residents supported the project because they had sufficient knowledge of the potential risks and rewards and understood the public health implications of the site.

A lack of local government capacity in Middlefield led residents to initiate the brownfields process themselves. Middlefield's Brownfields Steering Committee united with the intent to resurrect the general store. Residents have invested nearly six months so far to learning about the brownfields process. With the help of the Hilltown Community Development Corporation (CDC) and a participant employed in Boston, the Committee became an Economically Distressed Area because the site was one of the few job providers in the town. With this qualification, Middlefield is eligible to apply for all the Commonwealth brownfields programs; however, they still need to obtain site access. The Committee is in the process of forming a non-profit organization. As a non-profit and with ownership of the site they can apply for and receive funds and assistance from the Commonwealth. Although many questions prevail, the highly motivated Committee is slowly attacking each new hurdle that blocks their way. This unique situation suggests alternative solutions beyond purely private and purely public initiation of brownfields reuse.

#### **7.3.4 Non-Government Administrative Support**

In each community, external consultants or agency representatives have been essential to facilitating progress towards reuse. Middlefield's regional CDC provided a necessary link to the Department of Environmental Protection for EDA qualification. The local developer selected in Adams was an asset to the Plunket Hospital's reuse. He was the only respondent to the RFP issued by MassDevelopment but he was local, provided his own materials and staff, and was willing to pay for the cleanup (D. Carver, personal communication March 19, 2004).

Colrain's private consultant wrote all the grant applications for Colrain, including the EPA Revolving Loan Fund application for the FRCOG that was later distributed to Colrain. She administered the grants upon receipt. Additionally, she coordinated and prepared documentation for site assessment, cleanup costs, a financing plan, and worked on the acquisition of the property (K. McCabe, personal communication March 16, 2004). A USDA Community Development Block Grant enabled the town to fund the consultant position. The many tasks accomplished by this private consultant facilitated the significant progress in Colrain.

#### **7.3.5 State or Regional Government Support**

Support from local legislators and Regional or State government proved integral to the progress of projects in both Colrain and Adams. Colrain had strong backing from local legislators, which helped drive community support as well as facilitate Federal EPA brownfields program participation. Colrain benefited from ties with a strong regional agency. As mentioned above, Colrain's consultant was able to get the FRCOG to take on the role of EPA grant holder. Regional agencies traditionally work with communities of all size; however, this was an early example of a regional agency supporting brownfields redevelopment in rural communities. Even now as a better understanding of brownfields grows, the Colrain model of Regional Agencies holding Federal grants has become more common.

The success in Adams came about from a unique arrangement with the Commonwealth. When plans for development at Greylock Mountain in Adams stalled in the mid-1990s, then Governor Jane Swift ordered MassDevelopment to assist Adams in economic development (J. Leitch, personal communication March 4, 2004 and D. Cesan, personal communication February 28, 2004). As a result, MassDevelopment provided a range of technical services for the community. Although MassDevelopment was prepared to provide financial assistance toward the cleanup, the developer chose to pay for the asbestos on his own as discussed above. Cesan indicated the town would not have proceeded without the assistance of MassDevelopment or the unique developer arrangement discussed above (D. Cesan, personal communication February 28, 2004). State assistance is an integral part of any formula in Western Massachusetts because the local economy and level of community investment alone cannot drive development.

Brownfields legislation is still a relatively young policy program. The length of time required to see a successful redevelopment project keeps the number of completed properties low. This is especially true for rural areas that saw very little of the initial brownfields funding. However, Adams and Colrain were able to harness the momentum of the brownfields policy to obtain financial assistance for assessment and cleanups. Colrain is a perfect example of communities plugging into Federal programs; the success of the Upper Mill cleanup is attributed in part to the EPA Brownfield Site Assessment Pilot Grant. This grant enabled the town to take stock of contamination levels and have faith in the feasibility of cleanup at the site. Colrain also participated in the Massachusetts' Brownfields Program through the Environmental Insurance program and the Licensed Site Professionals (LSP). Environmental Insurance protects non-responsible parties from the costs associated with finding unexpected contamination later in the remediation process. This was particularly poignant to Colrain because unexpected contamination was found on two sites. The LSP program in Massachusetts enables more communities to develop remediation plans by removing the DEP oversight at each site.

When Adams and Colrain began investigating their contaminated property, the Commonwealth programming was limited and very new. Colrain initially relied on Federal policy through the USDA's Community Development Block Grants and the EPA's Brownfields Programs. Since then, states across the nation have been developing stronger local programs for brownfields reuse. Although there are more programs in existence in Massachusetts and elsewhere, the limited funds still prevent rural communities from receiving a larger share of program assistance. U.S. EPA, MassDevelopment, and Massachusetts DEP all noted plans to reach out to other smaller communities. However, with the thin budgets of most states these days, programs are more competitive and agencies are less likely to redirect funding to the outlying communities.

## **8.0 RECOMMENDATIONS & CONCLUSIONS**

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Brownfields are not a uniquely urban problem. This research shows that rural communities have the same contamination problems as urban areas because the settlement patterns share similar a similar industrial history. Contamination is a result of tanneries, paper mills, other industrial facilities, landfills, and gas stations. This thesis explored the premise that rural communities face unique barriers to clean and redevelop their brownfields sites. The case studies indicate that these rural communities struggle with brownfields redevelopment because of a limited local economy, limited local capacity, and a lack of brownfields knowledge.

There is no overt barrier to rural communities written in the Massachusetts Brownfields Program. The hurdle faced by rural communities is not how the program is written, but in how it is applied to communities with limited resources. Interestingly, the Economically Distressed Area (EDA) designation is perceived as the primary means of excluding rural communities. State interviewees presumed that few rural communities are included in the EDA designation; they were wrong. Sixty-two percent of the rural communities in this research are EDAs. Therefore, the EDA designation itself does not necessarily prohibit rural communities from participating in the program. Larger populations, an active and experienced brownfields staff, and a presumed denser concentration of brownfields sites allow urban communities such as Pittsfield, Lowell, Worcester, and Springfield to receive greater proportions of funding and technical assistance. The convenience of an experienced community gives urban areas an advantage in assistance allocation; they know who to call and have the resources to manage the process.

Is the state brownfields policy responsible for addressing the disadvantages of rural communities? I argue that the Commonwealth and its quasi-public agencies are solely responsible for the equitable administration of their programs; however, they cannot act without local initiative. This research indicates that smaller communities have limited

knowledge of and difficulty accessing resources. State agencies cannot act without support and capacity at the local level. Local forces, be they public-, private-, or grassroots-driven, are the first level of support for promoting and seeing brownfields reuse. Once the community is in motion, the Regional Planning Agencies are a primary resource to link rural communities to the resources of the Commonwealth.

Regional agency familiarity with brownfields redevelopment is growing; however, awareness of rural needs is still lacking. During this research, the Berkshire Regional Planning Commission (BRPC), who represents largely rural communities, applied for EPA Site Assessment funding. The Montachusets Regional Planning Commission (MRPC) received two rounds of EPA site assessment grants, assisting at least two rural communities. In November of 2003, EPA awarded the Merrimack Valley Planning Commission (MVPC) a site assessment grant for its region. Although contaminated properties undoubtedly exist in MVPC's small communities, all of their brownfields effort to date has been focused on the larger cities including Lowell and Newburyport. Existing research by the NADO and the ICMA indicates that regional agencies in Massachusetts can have a significantly larger impact on rural brownfields redevelopment by including brownfields projects in regional economic and community development documents. This inclusion promotes collaboration and education of both rural and regional needs.

Local-level respondents did not emphasize specific factors of the Massachusetts Brownfields Program as barriers to site reuse. In fact, aside from general funding provisions, the local respondents said little about the structure of the brownfields programs. Do not interpret this lack of acknowledgement as satisfaction with the Commonwealth programs. To me it indicates that rural local officials and residents remain poorly informed of brownfields legislation. Note that the significant factor enabling communities to see progress was the participation of an outside consultant.

The findings thus do not allow me to make conclusions on the structure of the Massachusetts Brownfields Program. Instead, the major concerns lie in how knowledge of these programs is distributed and widespread participation encouraged. Although this research did not evaluate specific modifications to current brownfields policy, the obstacles and opportunities described above suggested additional solutions to an equitable provision of brownfields resources. The recommendations provided below are in response to the key barriers faced by small communities: local capacity, access to resources and local economy.

Ombudsman housed in a State Agency – Housed in one State or quasi-public agency, this agent fills the role of the now defunct Office of Brownfields Development. The ombudsman will do more than just hear complaints by receiving and directing preliminary inquiries from communities of all sizes. Rural communities especially need one person whom they can contact to start them on the brownfields process. Although the DEP is often the first point of contact, a dedicated person to respond specifically to community concerns and direct them to the appropriate agency will benefit smaller communities.

Ombudsman housed in Regional Agencies – An ombudsman, or designated contact person, housed in regionally located State offices or in regional planning or development agencies will serve the same role as above but will be able to provide more specific direction to communities. Knowledge of local resources and professionals are better provided by this positions' regional focus.

Multiple-town Coalition<sup>18</sup> – A few rural communities eager to make significant progress on the reuse of brownfields sites can jointly hire a consultant to serve as grant administrator or brownfields project manager. This strategy will require some funding by each town. It also requires good working relationships and similar goals among the

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<sup>18</sup>Alice Yates of MassDevelopment suggested this solution to the town of Adams and to me during our interview on March 19, 2004..

coalition towns. This strategy can be supported by a regional agency, but it may also straddle designated regional boundaries. This research indicated that the exclusive attention of an expert is a great benefit to rural community brownfields reuse and a collaborative approach to providing this tool may be the only fiscally feasible means for rural communities to access outside assistance.

State and Regional outreach – Neither state or regional agencies are exceptional at dispersing adequate information to communities. Either through the creation of the above positions or through added outreach, these agencies must be more visible in the small, remote communities of Massachusetts. Personal and detailed communication should supplement content provided over the internet; this includes local site visits, detailed mailings and program descriptions, and an extensive and accurate contact list.

Without forsaking face-to-face communication and published content, the Commonwealth can elaborate on its internet resources. Current electronic resources of the Massachusetts brownfields agencies are lacking compared to other states and the EPA. The EPA provides numerous examples of successful projects on its website. Pennsylvania also provides a thorough listing of all brownfields properties and their status. Additionally, the State of Pennsylvania has a detailed website that walks visitors through the steps of the brownfields reuse process in Pennsylvania. In comparison, instructive and educational information on Massachusetts' websites is limited. Both the Commonwealth agencies and the communities would benefit if the information provided via the internet were clear and detailed. Furthermore, the sites provide no examples of projects in Massachusetts. We learn best from proven examples; a database of completed or ongoing projects using the Massachusetts programs can be a vital resource to a rural community.

An accessible network of participant communities – Like the project examples suggested above, a list of participating communities and contact information should be accessible. Inquiring communities can select like projects or communities to contact for assistance.

Small communities might be more willing to spend the extra time to share their experience with others. These communities could share experts, consultants, and business people capable of providing assistance, share knowledge of obstacles, and provide suggestions to overcoming these obstacles.

Service delivery network – A service delivery network links communities with professionals involved in brownfields redevelopment. Service delivery networks provide additional capacity as many of the above suggestions through connecting rural communities with vital environmental, economic, and community development service providers or experts. These networks can also contribute to the local economy by building knowledge and promoting local businesses. The local RPA would maintain a list of regional resources upon which communities could draw for professional expertise in remediation, contracting, or development of brownfields projects.

Partnership with local universities – Universities provide an excellent resource for rural communities. Western Massachusetts in particular is blessed with a few strong academic institutions, including the University of Massachusetts, Amherst (UMass), which houses the Center for Rural Massachusetts. Students provide free labor and can conduct economic analyses or reuse studies, gauge community interest, and conduct fiscal feasibility studies for brownfields sites, among other projects. A professor at UMass has agreed to consider the Middlefield case as a student project.

The list above is only the beginning. Further analysis is required to measure the feasibility of these recommendations. Yet, these recommendations reach the most cumbersome barriers described by the communities in this research. Rural communities are restricted by their lack of networks to larger government agencies, a limited local capacity, and often a poor local economy that limits reuse options. These barriers are unique to rural communities, but communities of all sizes share the barriers of risk, liability, contamination, and cost.

The equity rationale posed in Section 2.3 provides justification for encouraging rural brownfields redevelopment. Bonnett's theory argues that: government has historically promoted rural development thus should continue to do so; government is morally obliged to ensure that all citizens have access to essential services; government is morally obliged to improve rural-urban equity by giving special attention to rural areas; and, government owes rural areas for disparities created by past policies and programs (Bonnett 1993). Rural communities are entitled to a fair share of government attention. Rural communities face growth; but it is primarily residential development. Because many of these rural communities may not ever be considered economic target areas, the reuse of brownfields properties will continue to struggle. The future use of a site justifies the expense of remediation. Residential, open space, recreation, and general stores will not pay for the brownfields process. Regardless, rural communities still have brownfields sites that impinge on public health, environmental quality, and social well-being. Thus, brownfields redevelopment in rural communities is an equity issue more than an economic tool. Brownfields redevelopment is a tool for managing growth in a way that is acceptable to rural communities. As a result, government should aim to provide at least equitable access to brownfields financial and technical resources to ensure the maintenance of health and quality of life in rural communities.

It is clear that both rural and urban communities struggle when redeveloping brownfields. As they should, the process is complex, time consuming, and expensive. Relieving communities of decades of pollution is not an easy task; but it is necessary to promote economic and environmental equality. This research provides no opinion as to which communities should receive priority. Many would argue that urban areas should be the focus of all redevelopment. For the most part, I agree. However, no current policy will actually stop development on previously undeveloped greenfields. In order to preserve the much valued open space and natural habitat of our more remote communities, it is necessary for state and regional agencies to take a proactive approach to educate, encourage, and facilitate the cleanup and reuse of brownfields in rural communities.

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