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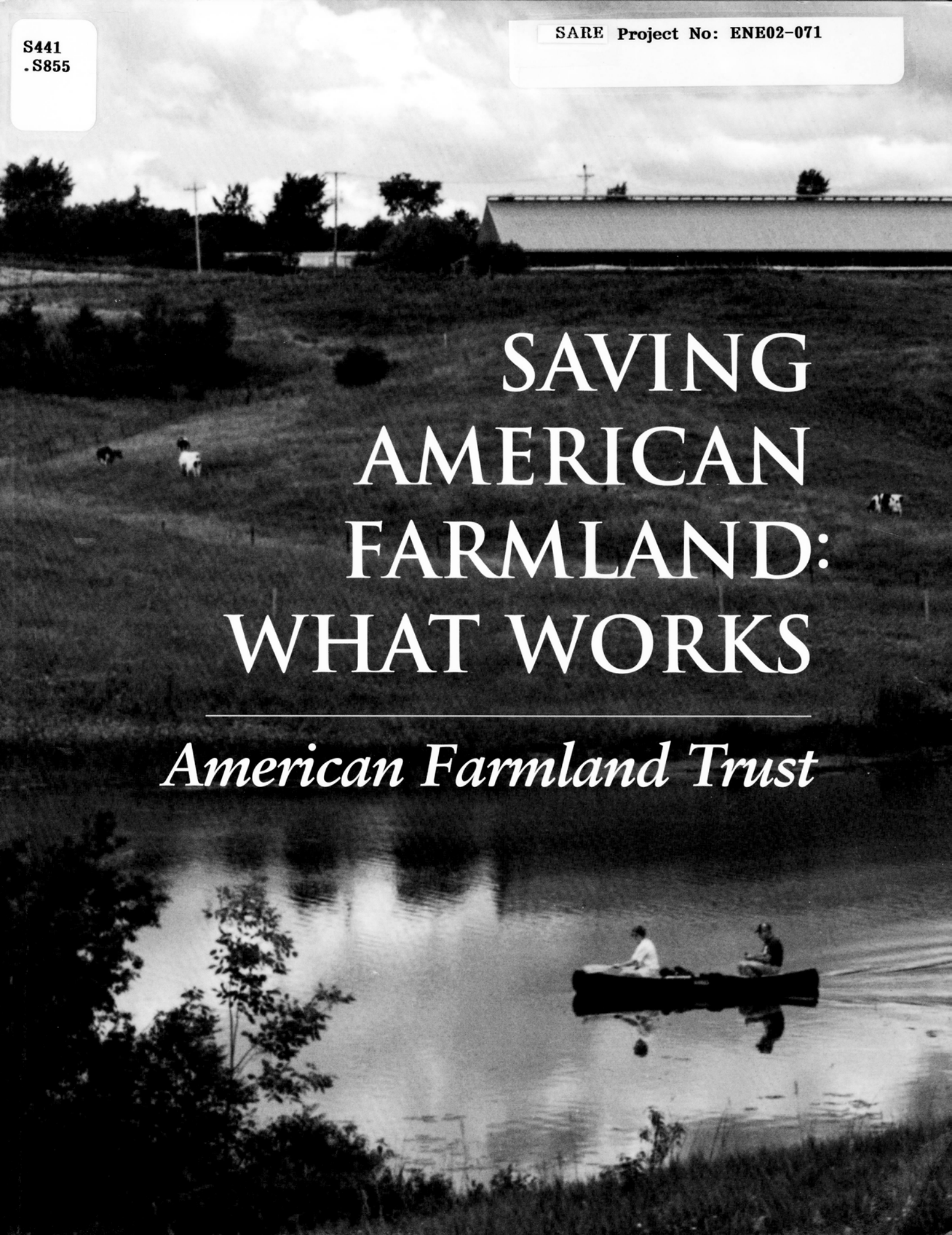

SAVING AMERICAN FARMLAND: WHAT WORKS

American Farmland Trust

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Cover photo: Buttolph Farm, Shoreham, Vermont

Tom and Mary Buttolph sold an easement on their 718-acre dairy farm in 1997, permanently protecting the rich agricultural land that Tom's family has worked since 1791. The barn in the background of the photo is a modern dairy facility with capacity for 200 cows. The farm abuts the 160-acre Richville Pond Wildlife Management Area and has 6,600 feet of frontage along the water. With assistance from the U.S. Fish and Wildlife Service, the Buttolphs recently installed one-half mile of fence to keep cows out of the pond. The family also donated a public access easement along a privately owned railbed.

The Buttolph Farm is located in the vicinity of the largest area of protected farmland in the state; easements have been placed on more than 7,000 acres of agricultural land in Shoreham and the adjacent town of Orwell. The Buttolph Farm was protected by a public-private partnership between the Vermont Housing and Conservation Board, the Vermont Land Trust and the Vermont Department of Agriculture. More than 30 percent of the easement price was donated by private foundations.

Photo credit: Ethan Parke, Vermont Housing and Conservation Board

This book is respectfully dedicated to Norm Berg,

who has devoted his life to inspiring and teaching

us all how to conserve our nation's

most precious natural resource.

ABOUT AMERICAN FARMLAND TRUST

American Farmland Trust is the only private, nonprofit conservation organization dedicated to protecting the nation's strategic agricultural resources. Founded in 1980, AFT works to stop the loss of productive farmland and to promote farming practices that lead to a healthy environment. Its activities include public education, technical assistance, policy research and development and direct land protection projects. Basic AFT membership is $20 a year.

AFT provides a variety of professional services to state and local governments and public agencies, private organizations, land trusts and individual landowners. Services include customized information products and workshops on farmland protection and estate planning; policy research, development and evaluation; farmland protection program implementation and conservation real estate consulting.

For membership information or general information about AFT, contact the National Office or connect to our home page at http://www.farmland.org. To order this book or to find out more about AFT's publications, products and services call (800) 370-4879.

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ABOUT THE FARMLAND INFORMATION CENTER

In cooperation with the U.S. Department of Agriculture's Natural Resources Conservation Service and the National Agricultural Library, AFT has developed a farmland information center specifically on farmland protection. The FIC has two components that serve the public: an electronic library and a technical assistance service. The library offers a searchable database of farmland protection literature, state statutes, maps, resources and other reference aids. The FIC can be accessed at http://www.farmlandinfo.org or by calling (413) 586-4593 for technical assistance.

Manufactured in the United States

No issue will be more important to 21st Century America than how we use our dwindling land resources. The competition for land—especially productive agricultural land—will intensify as our population grows and the communications revolution makes it easier for us to live and work in widely-dispersed communities. The irreplaceable land that produces our food and provides us with scenic open space, wildlife habitat and clean water is increasingly at risk from urban sprawl and rural subdivisions. To assure a prosperous future, we must save our farmland.

Efforts to protect America's farmland begin at the local level, where sprawl threatens community character and endangers fiscal stability. The strategies, policies and techniques described in this book will help farmers and ranchers, public officials, conservationists and other citizens understand how to protect precious agricultural land and landscapes.

However, local initiative is not always enough. The competition for land occurs in the context of a global economy and is strongly influenced by federal and state government policies. Even the most well-intentioned local efforts will fail if state legislatures and Congress continue to promote policies that facilitate development on agricultural land. Now is the time for policymakers at all levels of government to support agriculture and re-examine the transportation, tax, and even environmental programs that contribute to urban sprawl. This book offers the kind of insight and information needed to accomplish this task.

Saving American Farmland is the most comprehensive reference publication available on the subject. This guidebook complements and expands the vast resources of the American Farmland Trust-managed Farmland Information Center—an Internet-accessible database and library. Together they provide the most up-to-date information on the full range of public policies and programs that give landowners alternatives to selling farm and ranch lands for development.

Saving American Farmland features impressive success stories detailing how local communities have built comprehensive programs to protect farmland. AFT offers these stories to inspire concerned citizens and communities across the nation to protect the land that sustains us all.

William K. Reilly
Chairman of the Board
American Farmland Trust
July 1997

SAVING AMERICAN FARMLAND: WHAT WORKS

TABLE OF CONTENTS

FIGURES

TABLES

MAPS

ACKNOWLEDGMENTS

Saving American Farmland is the result of dedicated team work. Led by Julia Freedgood and Edward Thompson Jr., team members John C. Keene, Robin L. Sherman, Jill Schwartz, Robert C. Wagner and Jennifer Dempsey researched, wrote, edited and revised this book.

Above all, we are grateful to the U.S. Department of Agriculture's Natural Resources Conservation Service. They supported this project and assisted American Farmland Trust in our efforts to provide technical information and assistance to their field agents, other conservation professionals and the wide variety of people working to protect the nation's agricultural land. In particular, we are grateful to NRCS Chief Paul Johnson and to Lloyd Wright, who is now director of civil rights at the USDA, for initiating this project.

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Sue Wiggin of Wiggin & Co. designed and managed the production of this book. We thank Sue for her great ideas, patience and indefatigable good humor.

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Saving American Farmland is a testament to the knowledge and wisdom of many people across the country. We wish we had the space to thank you all by name. We are indebted to the administrators of farmland protection programs, staff from state departments of agriculture and local officials who answered hundreds of questions and provided much of the information in this book. We appreciate the help from farmers and ranchers, conservationists, planners and council members and others whom we interviewed and who have a personal stake in the future of America's farmland. Finally, we thank all the dedicated people working in the field who develop the farmland protection tools and strategies and put them to use every day.

Respectfully submitted
by Julia Freedgood
Director of Farmland Advisory Services

At the turn of the century, America had nearly 30 million farms. Today, we approach the year 2000 with fewer than two million. While this is partly due to enormous changes in the structure of agriculture in this country, it is also the result of competition for land, which threatens the future of our agricultural land base. We have been converting farmland for residential and commercial development steadily since World War II, when the U.S. Department of Agriculture reported a high of 1.2 billion acres of land in farms. By 1992, that number had dropped to 945 million acres. We continue to convert about one million acres a year for urban, suburban and rural development.

In 1981, the USDA released the results of the National Agricultural Lands Study, a two-year project to document the extent and causes of the loss of farmland. NALS reported that the nation was losing approximately three million acres of agricultural land each year, close to one million acres of which were valuable cropland. While these figures were controversial, few disputed the overall trend: Very large areas of farmland were being permanently converted to non-agricultural use.

NALS also produced *The Protection of Farmland: A Reference Guidebook for State and Local Governments*. This study examined existing state and local farmland protection programs and analyzed the various types of techniques being used across the country in the late 1970s. It immediately became the most thorough source of information for state and local officials, farmers and conservation organizations involved with developing policies and programs to safeguard the nation's agricultural land base.

Since the guidebook was published, the first state and local farmland protection programs have matured. They have been modified and improved to reflect changing conditions for agriculture. New programs have been initiated, drawing on the experience and expertise of the pioneers. Land trusts and other private organizations have launched their own resource conservation activities. American Farmland Trust, founded in 1980, is still the only national, private organization dedicated to protecting farmland.

The federal role in farmland protection also has expanded, starting with the passage of the Farmland Protection Policy Act (FPPA) in 1981. Federal regulations to implement the law were adopted in 1994. The recent farm bill, formally known as the Federal Agricultural Improvement and Reform Act of 1996, appropriated matching funds for state and local farmland protection programs.

One of the provisions of the FPPA was for the Secretary of Agriculture to "designate one or more farmland information centers to serve as central depositories and distribution points for information on farmland issues, policies, programs, technical principles, and innovative actions or proposals by local and State governments." In cooperation with the U.S. Department of Agriculture's Natural Resources Conservation Service and the National Agricultural Library, AFT has developed a farmland information center specifically on farmland protection. The FIC provides easy-to-access resources to federal, state and local officials, farmland protection and conservation professionals, farmers and ranchers, agricultural organizations and concerned citizens.

The FIC has two components that serve the public: An electronic library and a technical assistance service. The library offers a searchable database of farmland protection literature, state statutes, maps, resources and other reference aids. The technical assistance

service provides information on farmland protection using fact sheets, articles and model documents and by preparing customized packets to respond to specific needs. The FIC is accessible online at http://www.farmlandinfo.org; technical assistance staff can be reached at (413) 586-4593.

Even with increasing public support and the development of successful farmland protection programs, we are still losing valuable farm and ranch land in every state in the nation. New challenges and opportunities are changing the scope and context of land use and agricultural issues. In many states, mid-size family farms have declined the most, while the number of very small and very large operations have increased. After the farm crisis of the 1980s, which forced tens of thousands of midwestern family farmers into bankruptcy, the number of farms declined dramatically. Those that remained got bigger in the struggle to survive. At the same time, in most metropolitan areas farms got smaller and switched to high-value crops like fruits and vegetables, as competition for land caused huge increases in property values.

Much of the high-quality farmland threatened by development is located near major population centers. During the 1980s, many urban areas developed commercial and employment centers at or near their outer boundaries. Many of these "edge cities" have spawned suburbs of their own, consuming even more productive agricultural land. Advances in telecommunications, declines in industrial jobs and other factors have fostered a gradual migration of population back to smaller, less densely settled cities and towns, stimulating changes in land use and real estate markets in rural communities.

Thus, in the 1990s, farming takes place in an increasingly urban context. Farms near cities are adapting to take advantage of proximity to markets. The combination of public will and private ingenuity appears to have slowed the rate of farmland loss. But urban influence on agriculture is reaching out into the countryside. It is no longer limited to metropolitan areas on the East and West Coasts. Midwestern farming regions and ranch country in the Rocky Mountains are experiencing an influx of urbanites in search of a rural lifestyle. In Texas, nearly half a million acres of high quality farmland were developed between 1982 and 1992—more than in any other state. Newcomers to these areas are driving up land prices and changing the political and cultural character of tight-knit farming and ranching communities. Growing public concern about the environmental impact of agriculture has resulted in new federal, state and local laws that restrict agricultural land use and farming practices. Farmers have responded by employing more sustainable production methods.

Established farmland protection programs are meeting new challenges and addressing the continuing loss of agricultural land with expanded missions, creative approaches and innovative funding sources. State and local governments in the midwest and mountain states are increasingly interested in establishing farmland protection programs. Public environmental agencies and nonprofit organizations are using agricultural land conservation as a strategy to protect water resources and wildlife, and some local governments are promoting farmland protection as an economic development tool. Farmland protection programs are combining planning and zoning with voluntary, incentive-driven strategies to keep land in agriculture.

In 1994, AFT teamed up with Professor John C. Keene, one of the original authors of the NALS guidebook. Our goal was to update the book to reflect the additional experience

and changes in farmland protection programs in the 1980s and 1990s. *Saving American Farmland* addresses the challenges of farming in developing areas, takes an in-depth look at the primary tools being used to meet those challenges, and discusses what it takes to develop effective strategies by using case studies of some of the most successful farmland protection programs in the country.

As part of this effort, we surveyed state departments of agriculture to find out what types of programs they have in place and compared these results with intensive legal research and review. This research forms the basis of the Farmland Information Center's database, which includes citations and popular titles of state farmland protection statutes and statute text for 49 states (every one but Alaska). With assistance from the American Planning Association, we also surveyed municipal planners to find out more about farmland protection at the local level.

These efforts generated a great deal of numerical data on the quantity of farmland protected by the primary tools: agricultural protection zoning, purchase of agricultural conservation easements, transfer of development rights and agricultural districts; these are explored in the technical chapters of the book. In addition, we took a close look at unique and enterprising local efforts. Researchers conducted case studies of some of the most successful and comprehensive farmland protection programs in the nation. The final section of the book profiles state and local government efforts in California, Maryland and Washington. The case studies contain important lessons for managers of established programs as well as for people developing new ones.

When the NALS guidebook was published, tax relief was the only public program widely used to protect farmland. Only 17 states had addressed nuisance protection, four had established purchase of agricultural conservation easement (or purchase of development rights) programs and six had passed agricultural district laws. At the local level, 270 jurisdictions had enacted agricultural protection zoning and four counties had PACE programs. Today, all 50 states have established right-to-farm laws. PACE is being used in 20 states and at least 20 counties have established transfer of development rights programs. Sixteen states now have agricultural district laws, and at least 24 states have legislation allowing APZ. The state of Oregon alone has used APZ to protect 16 million acres through its growth management act. Yet even with these efforts, every state in the nation is losing some of its best farmland to development.

While the pressure to convert farmland continues to affect both urban-edge and rural areas, the success of these programs gives us hope that with good planning, public involvement and private initiative, we can focus our attention on saving the best-quality farmland for future generations. We can learn from the achievements of creative people and committed community action and, by taking an integrated approach, develop strategies to address the complex resource challenges we face today. We can use and adapt the tools and models already in place and devise new ones to secure our land base, vitalize our communities and help agriculture thrive.

INTRODUCTION

FARMING ON THE EDGE

America is farming on the edge. According to a 1997 American Farmland Trust study, every state in the nation is sacrificing irreplaceable agricultural resources to urban sprawl. We are converting a total of about 1 million acres a year, and while the quantity of top-quality agricultural land being lost varies from state to state, the process of conversion increases the pressures on agriculture even beyond the acres that are actually taken out of production. The "Farming on the Edge" study shows a gradual dispersal of population into suburbs and small towns, threatening our best-quality resources, especially near ever-expanding metropolitan areas. These trends limit our ability to deal with a host of social, economic and environmental problems in the future[1].

Farming is what distinguishes land as farmland. Along with sunshine and water, we need land to grow food, fiber and oilseed crops. But not all of it is equally well-suited to production. Fertile soils take millions of years to develop. Creating them takes a combination of climate, geology, biology and good luck; so far, no one has found a way to manufacture these. Productive agricultural land is a finite and indispensable natural resource.

Soils graded prime, unique and "statewide important" are especially important to agriculture. Agricultural production closely mirrors the quality of the land. Roughly 56 percent of our crops are grown on prime farmland, yet according to the U.S. Department of Agriculture, these are the very soils most likely to be converted to nonagricultural use[2]. Most of our population centers are surrounded by high quality farmland. Between 1990 and 1994, 84 percent of non-metropolitan counties next to metropolitan areas gained population. This helps explain the conversion of 4 million acres of prime farmland and the conversion of another 266,000 acres of unique farmland in 10 years[3].

Economic opportunity, environmental protection, community infrastructure and quality of life are among the most compelling reasons to save farmland. Saving farmland is a good investment in the future of our country. Yet despite its importance to our nation and communities, our most valuable farmland is at risk, imperiled by complex forces of conversion that can take 20 or more years to be fully realized on the landscape. Conversion is fueled by rising real estate values and property taxes, declining agricultural profitability, conflicts between farmers and their non-farming neighbors, stricter environmental regulations and a decline in farmers' satisfaction with agriculture as a way of life.

MEETING THE CHALLENGES OF FARMING IN AN URBAN AGE

The frontier spirit drove Americans to settle the wilderness. The early settlers transformed the landscape by clearing forests and draining swamps. They took advantage of productive soils and built towns and cities near rivers and in fertile valleys. Farming was often the basis of wealth and trade. America's most profitable agriculture still takes place near population centers. More than half of the value of American agricultural production comes from counties in and around urban areas. These areas provide 85 percent of our fresh fruits and vegetables, 79 percent of our dairy products and nearly half of our meat and grain. Urban-influenced counties* account for 56 percent of our gross agricultural sales and 91 percent of our specialty crops.

* Urban-influenced is defined as being in either a standard metropolitan statistical area or in an adjacent county with at least 25 people per square mile. These findings are presented in a "Farming on the Edge" map of at-risk, urban-influenced counties, published by American Farmland Trust in 1993 and developed by AFT and the Social Science Research Center at Northern Illinois University.

Yet population growth in counties with the highest agricultural productivity is more than twice the national average. For example, in the last generation, Pittsburgh, Chicago, Cleveland, St. Louis and Detroit lost an average of 37 percent of their central city populations while suburban land use soared. And during the 1980s, many urban centers reached out of their borders and developed "edge cities," often with suburbs of their own.

Historically, an abundance of land, coupled with the development of long-distance transportation systems, encouraged American farmers to move west to avoid non-farm population encroachment. In the 19th century, federal policies such as the Homestead Act made western lands available for agriculture. However, since World War II, the government has stimulated the conversion of farmland to residential and commercial uses with little regard for the quality of the natural resource base or the land use preferences of states and municipalities. Chief among federal policies that encourage conversion are highway construction, the income tax deduction for home mortgage interest and facilities construction.

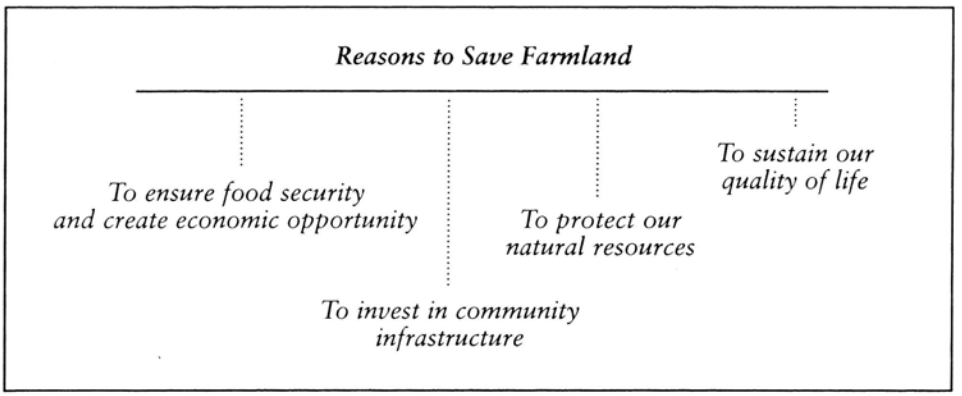
The effects of these policies were felt first on the coasts, especially in California and in the mid-Atlantic and northeastern states. These areas continue to experience losses, but the threat is spreading. Today, our top-producing agricultural states also are in jeopardy. For example, from 1982 to 1992, Texas lost more of its best-quality farmland than any other state. Florida, several other Southeastern states and much of the Midwest also converted significant acreage of prime and unique soils.

When people move out of cities, they often do so to escape noise, pollution, deteriorated neighborhoods and crime. However, this leads to further decline in our city centers and often begins a process of re-creating urban problems in the country. As suburbs close to cities become crowded with homes, shopping malls, convenience stores and commuters, people seek homes farther and farther out into rural communities. This scattershot expansion creates demand for subdivisions, public services, retail businesses and professional jobs in areas that were once devoted to resource-based industries such as farming, logging and fishing.

Increasingly, farmers and ranchers in rural areas are facing the same problems as those in more developed areas. Improvements in computer technology are allowing professionals to live in more isolated communities and "telecommute" to distant offices. The strong economy of the 1980s and 1990s fueled demand for vacation homes in traditional ranching areas such as Colorado, Montana and Utah and near the working dairy farms of Vermont's Lake Champlain. Even without population density, agriculture can be affected by urban influences. Farmers and ranchers are being forced to compete for land and resources, which can reduce or eliminate profits. To challenge these forces, we must find a way to stabilize the land base, to support the economics of agriculture and, increasingly, to protect our natural resources.

State and local governments have employed a variety of public policies to address these challenges, using both regulatory and free-market strategies. But the first step toward protecting farmland is recognizing its importance to the economy, the environment, our communities and our quality of life.

FIGURE 0.1: WHY SAVE FARMLAND?



SAVING FARMLAND ENSURES FOOD SECURITY AND CREATES ECONOMIC OPPORTUNITIES

The dominant role of U.S. agriculture in the global economy has been likened to OPEC's position in the field of energy. Agriculture accounts for nearly 16 percent of the U.S. gross domestic product and provides 18 percent of civilian jobs. The market value of our agricultural commodities was $162 billion in 1992[4], and domestic demand for food and fiber products generated $950 billion in 1992. Our farmland supports the world's most productive food and farming system.

With a rapidly increasing world population and expanding international markets, saving farmland is a wise investment in global food security and economic opportunity. While food shortages are unlikely to threaten American consumers in the short term, our population is predicted to grow by 50 percent in the next 50 years, with farmers and ranchers having to make do with 13 percent fewer acres of high quality agricultural land. If we do not take measures to save our best-quality resources for the future, domestic food production—and certainly food prices—could become an issue for the next generation.

The United States produces half of the world's grain exports[5]. The current world human population of 5.7 billion is growing by more than 88 million people a decade. Meanwhile, global food production seems to be declining in relation to world population. In 1990, the USDA reported that grain consumption had exceeded production for three years in a row[6]. The 1996 World Food Summit of the United Nations reported that to adequately feed the world, global food production must quadruple in the next 50 years[7].

Developing nations in Africa, Asia and Latin America are already concerned about food security. Even as worldwide demand for food rises, many countries are paving over their arable land for commercial growth to support rapidly expanding economies. These countries are expected to be larger consumers of U.S. agricultural products in the future.

Our agricultural exports are an important part of the food supply of many industrialized countries. Currently, the Japanese are our most important customers, accounting for nearly 20 percent of our total agricultural exports[8]. Japan is increasingly purchasing American specialty crops as well as grains. According to the Wall Street Journal, Japanese imports of vegetables grew by 66 percent in 1994. Forty-four percent of the increase was in American-grown vegetables, especially broccoli, asparagus and onions[9].

The diversity and versatility of American agriculture can ensure our continuing preeminence in world markets. But if we do not develop an investment strategy that preserves our assets, including agricultural land, we will not have resources readily available to supply rapidly changing global demand. According to U.S. Secretary of Agriculture Dan Glickman, "[o]ur ability to advance our national and global interests is inextricably linked to how we manage America's natural resources[10]." In sum, American agriculture plays an important role in feeding our nation and the world, and supports our balance of trade.

SAVING FARMLAND PROTECTS OUR NATURAL RESOURCES

With 945 million acres in production, agriculture is the dominant land use in the United States[11]. So it is not surprising that farming has had a significant ecological impact. Since most farmers live close to the land, it is in their best interest to protect the environment that sustains them. Yet, ever since the publication of Rachel Carson's *Silent Spring* more than three decades ago, environmentalists have called attention to the negative consequences of some of the inputs associated with modern agricultural practices.

Yet developed land uses have far more negative long-term implications than agricultural ones for the nation's natural resources. Water pollution from urban runoff is well documented[12]. Paved roads and roofs collect and pass stormwater directly into drains instead of filtering it naturally through the soil[13]. Septic systems for low-density subdivisions can add untreated wastes to surface water and groundwater[14]. Septic fields can actually yield higher nutrient loads than livestock operations[15]. Land development often produces more sediment and heavy metal contamination than farming does and increases pollutants—such as road salt, oil leaks from automobiles and runoff from lawn chemicals—that lead to groundwater contamination.

A new tide of federal regulations has imposed environmental restrictions on agricultural practices. The first wave came in the early 1970s, first with the Clean Air Act and then with the Clean Water Act and the reauthorization of the Federal Insecticide, Fungicide and Rodenticide Act. These were followed by the Resource Conservation and Recovery Act, which was amended by the Superfund Law in 1980. Since the 1985 Farm Bill, the agricultural community has begun to address the ecological and economic costs of conventional agriculture. The 1990 and 1996 Farm Bills included new agricultural policies that emphasize resource conservation.

The Conservation Reserve Program was authorized by the 1985 Farm Bill. It pays landowners not to cultivate highly erodible cropland and sensitive areas like streamside buffers, critical wildlife habitat and wetlands. The program is administered by the USDA Farm Services Agency with technical assistance from the Natural Resources Conservation Service. Approximately $1.95 billion was spent on this program in fiscal year 1996, protecting about 34 million acres under 10-year contracts. In the past, the focus was on curbing soil erosion, particularly in the Great Plains. Changes made by the 1996 Farm Bill increase emphasis on protecting sensitive aquatic resources, by allowing continuous signup for farmers who use practices such as filter strips, buffers along rivers and contour grass strips.

The Wetlands Reserve Program was authorized by the 1990 Farm Bill and is administered by the NRCS. The WRP pays for perpetual and long-term conservation easements, as well as shorter-term agreements that call for restoration and protection of formerly cultivated wetlands. Since the program began, the NRCS has spent $274 million to restore and protect 325,833 acres of wetlands nationwide. Program rules tend to favor areas where there are extensive, low-cost wetlands such as the Mississippi Delta, but anticipated changes will make the program more attractive in the East and far West where land is more expensive and wetlands more isolated.

The federal government owns 408 million acres of forests, parks and wildlife refuges that provide substantial habitat for wildlife. Most of this federal land is located in 11 western states. Another 108 million acres are publicly owned by states, municipalities and other non-federal units of government[16]. Yet public agencies cannot sustain wildlife populations alone. Farmers and ranchers own more than twice the amount of land devoted to public forests, parks and wildlife refuges. Well-managed, privately owned agricultural land can provide significant wildlife habitat.

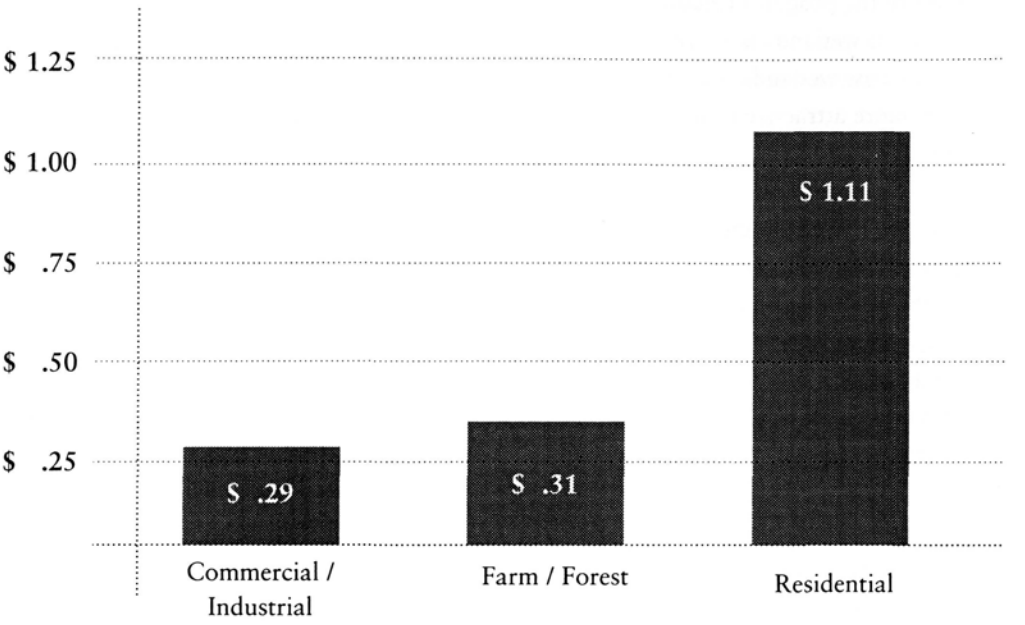
According to the USDA, it is hard to overestimate the importance of the non-market goods and services that agriculture provides. Well-managed farmland protects soil and water resources and can prevent flooding. It absorbs and filters wastewater and provides groundwater recharge. New energy crops even have the potential to replace fossil fuels. From wetland management to on-farm composting for municipalities, farmers are finding ways to improve environmental quality.

SAVING FARMLAND IS AN INVESTMENT IN COMMUNITY INFRASTRUCTURE

To many people, the most compelling reasons for saving farmland are local and personal, and much of the political support for farmland protection is driven by grassroots community efforts. Agriculture contributes to local economies directly, through sales, job creation, support services and businesses, and also by supplying lucrative secondary markets such as food processing. Distinctive agricultural landscapes may be magnets for tourism. Farmland offers a hedge against fragmented suburban development while supporting a diversified economic base. Increasingly, people view natural resources, including agricultural land, as vital for the well-being of our communities, rather than as "free" material to be disposed of at will.

Privately owned and managed farmland generates more in local tax revenues than it costs in services. In a series of Cost of Community Services studies, AFT has developed a method to analyze revenues and expenditures on a municipal land use basis. To date, AFT and others have used this method in more than 40 communities in the Northeast and Midwest. Time and time again, careful examination of local budgets has shown that farm, forest and open land more than pay for the municipal services they require, while taxes on residential uses consistently fail to cover costs. Saving farmland is an investment in community infrastructure. Figure 0.2 on page 8 summarizes the findings of 40 COCS studies.

FIGURE 0.2: SUMMARY OF COST OF COMMUNITY SERVICES STUDIES



Median cost—per dollar of revenue raised—to provide public services to different land uses.

In related studies measuring the effect of all types of development on municipal tax bills, Ad Hoc Associates found that in general, as communities become more developed, tax bills go up. Even communities with the most taxable commercial and industrial properties have higher-than-average taxes[17]. Local governments are finding out, often too late, that they cannot afford to pay the price of sprawl.

SAVING FARMLAND SUSTAINS OUR QUALITY OF LIFE

Sometimes the most important qualities are the hardest to quantify. This is true of the role that farmland plays in contributing to a sense of place. Farm and ranch land maintains scenic, cultural and historic landscapes. It offers beautiful views and managed open space, which can provide opportunities for hunting, horseback riding, fishing and other recreational activities. Farms and ranches create identifiable and unique community character and add to our quality of life.

These qualities are appreciated by visitors as well. For example, people vacation in places as distant as the state of Vermont or Steamboat Springs, Colo., because they enjoy the scenery created by rural meadows and grazing livestock. In Lancaster, Pa., agriculture is still the leading industry, but with Amish and Old Order Mennonites working in the fields, tourism is not far behind. Napa Valley, Calif., is another place known as a destination for "agro-tourism." Tourists have become such a large part of most Napa Valley wineries that many vintners have hired hospitality staff. Both the valley and the wines have gained name recognition, and the economy is thriving.

Finally, farming is an integral part of our heritage and our identity as a people. American democracy is rooted in our agricultural past and founded on the principle that all people can own property and earn a living from the land. Our ongoing relationship with the agricultural landscape connects us to our history and to the natural world. Our land is our legacy, both as we look back to the past and as we consider what we have of value to pass on to future generations.

ADDRESSING THE CRITICS

The importance of saving farmland is sometimes challenged by economic theories that, upon closer examination, turn out to be short-sighted.

"Let the market decide."

Some economists claim that our agricultural system is so productive that we need not worry about the continuing loss of farmland. They contend that the free market should determine whether prime soils are maintained in agriculture or converted to other uses. According to this argument, if farming is less profitable than other land uses, agricultural land should be converted to its "highest and best" economic use. This perspective neglects non-market values and positive attributes such as scenic views and floodwater storage, which are difficult to quantify. The full economic value of farmland and other natural resources cannot be measured solely in financial terms.

The "market forces" argument also assumes that farms and ranches operate in perfectly competitive markets, which is not the case. Public investments have made it possible for people to afford to live great distances from where they work. The inflation of agricultural land values is fueled by home mortgage deductions, artificially low gasoline prices and government expenditures on highways, sewer systems and other municipal services. Indeed, the expectation of land price inflation can be seen as a self-fulfilling prophecy. Before the 1996 Farm Bill phased out the agricultural commodity support system, 50 years of food policies and commodity programs distorted wholesale prices here and abroad, interfering with the free-market system. Environmental regulation, inflation and other economic forces also affect the marketplace.

"Why worry? We have plenty of farmland."

Other people argue that there is so much land in the United States that farmland lost in one area can be replaced by bringing new land into production somewhere else. This quantitative perspective overlooks the importance of the quality of the resource. We have a limited amount of agricultural land that is ideally suited for food production. This land is characterized by a combination of very productive soils, conducive climates or unique microclimates, ample water and the ability to produce specialty crops.

Competition for resources can drive farming onto marginal lands, where larger inputs of chemical fertilizers and pesticides may be required, sometimes to the detriment of the environment[18]. While our best farmland is being taken out of agriculture, lower quality land is being added from arid rangeland in the West and forest land in the Southeast[19]. The conversion of rangeland to cropland in the West is associated with increased erosion[20].

Competing for Land: One Farmer's Story

Craig Christensen is a third-generation farmer in Washington state. He grew up on the farm where he now lives with his wife and children, five miles from Walla Walla, the county's seat and only city. Craig describes his operation as "totally diversified." He grows beans, peas, squash, onions, sunflowers, asparagus, lupines and canola seed on prime, irrigated land that is suitable for a variety of crops.

The Christensens own 290 acres, but Craig is producing on a total of 1,500 acres. He rents cropland from more than a dozen different landlords. Although he tries to get long-term leases with expensive buy-out clauses and a right of first refusal, land pivotal to his operation has been sold out from under him.

Pointing to a big, new, $400,000 house atop the rolling hills surrounding his farm, Craig explains, "When I was born, there were no houses anywhere around here. Now we're going through what California went through in the 1940s and '50s." He notes that his neighbors made a fortune by selling at $10,000 an acre land they had bought for less than $500 an acre. One-acre lots have sold for as much as $40,000. Although plenty of land is still available in town, new residents are moving out to live on large lots in the country. Craig is afraid these lots will turn to weed patches and eventually be broken up into housing developments.

Craig's father stopped farming and allowed his land to be rezoned for residential development. "I tried to talk him out of selling," Craig says, "but I see where he's coming from. We get two or three calls a week from people who want to buy this land." Craig and his family live in the family's old farmhouse. "If I didn't live here for free, there's no way I could farm and make house payments." Craig hopes to farm until he retires, but doubts that his children will continue to farm the family's land. "If you come back in 10 or 15 years," he predicts, "it will look totally different[21]."

Craig Christensen's story could be told by farmers all over the country. He is caught in a typical pattern of conversion pressure. Intense development was once limited to the edges of large cities. Today, even farmers and ranchers in rural counties are competing with developers for land.

Farmers generally sell their land out of agriculture for two reasons: weak farm profitability and the high value of land for nonfarm development[22]. These two factors underlie the complex process of farmland conversion.

THE PROCESS OF CONVERSION

Declining farm profitability has many causes. Among them, rising land values and property taxes play a significant role by increasing the costs of agriculture. Expensive land also increases opportunity costs: Selling lots for development is generally more lucrative than raising crops or livestock. As municipalities change from rural to suburban—and then from suburban to urban—the pressures mount on producers to sell their land. This does not necessarily or immediately result in conversion, but without dedicated community action, the tendency is for that land to become developed in the long run.

Dennis Reeder for Maguire Reeder Ltd.

Photo: Selling lots for development is generally more lucrative than raising crops or livestock.

Rural land is cheap for suburban developers, who are willing to pay landowners far more than agricultural value for the flat, well-drained land they prefer for building. As people from surrounding urban and suburban areas move into rural communities, large land parcels are divided and prices soar far beyond their economic value for agriculture. Farmland, which requires few public services, is typically converted to subdivisions filled with residents who require education, utilities and other costly amenities.

New rural residents demand expanded, improved and new services. Roads are widened and paved to facilitate commuting. New subdivisions are usually first in line for public water and sewer services. Existing schools may not be large enough to accommodate the growing population. Crime increases and there is more demand for fire protection and inspections, so formerly volunteer public safety officers become full-time civil servants, and dispatching equipment once used at home must be moved to police and fire stations. These services are expensive and they are typically funded by increasing property taxes.

U.S. Department of Agriculture

Photo: Farmland, which requires few public services, is typically converted to subdivisions filled with residents who require education, utilities and other costly amenities.

Some rural communities faced with escalating municipal costs promote development as a strategy to expand the tax base. While growth can create employment opportunities and contribute to municipal coffers, the gains are likely to evaporate as the next wave of urban or suburban expatriates moves to town, demanding even more new services. Large landowners bear a disproportionate share of rising property taxes, increasing the likelihood they will sell.

High land costs make it difficult for new farmers to enter agriculture or for existing producers to buy or rent land to expand operations. Inflated land values make it too expensive for farmers to compete in agricultural markets. Transferring land from one generation to the next also becomes difficult. Federal and state inheritance taxes are assessed at the time of death and are based on the highest and best use of property. Without solid estate planning and a farm transfer strategy, heirs often find they cannot pay inheritance taxes without selling all or a portion of their land.

As communities change to accommodate new residents, suburban employers compete with farmers and ranchers for labor. Producers find it difficult to hire help, and new employees tend to have fewer farming skills and demand higher wages. The inability to attract or afford labor further jeopardizes the profitability of agricultural enterprises.

Scattered development increases the likelihood of conflict between farmers and ranchers, and their neighbors. Large land parcels are divided into smaller and smaller tracts, which more people can afford to buy. The remaining operations become separated by housing developments inhabited by people with little understanding of agriculture as a business or way of life. New residents may appreciate the agricultural landscape, but they frequently resent farm chemicals and the smell of manure, noisy machinery and slow-moving vehicles. Often they complain; sometimes they sue. Complaints can lead to new ordinances that restrict agricultural

practices. Production costs rise as losses due to trespassing, pilfering, harassment of livestock and vandalism increase.

In the last 20 years, the public has demanded higher environmental performance from agriculture. Concern about conserving soil and water has expanded to include nonpoint source pollution, wetland protection and biodiversity. Environmental regulations on agriculture have become stiffer, and farmers have had to find alternatives to conventional practices. New techniques may not be as well researched, proven or profitable as the methods that have been promoted and used for 50 years. These demands add to production costs.

The combination of all these forces threaten the viability of agriculture. When farmers and ranchers sell out, the economic foundation of rural communities is weakened. Local seed and feed distributors and equipment dealers go out of business, and the remaining producers must travel longer distances and pay higher prices to purchase supplies and services. Communities that were once tight-knit become fragmented and farmers become stressed. Discouraged, they may reduce long-term investments in their operations. Without pro-farming public policies and political support, the snowballing process of scattered development, falling profits and rising property taxes can result in an "impermanence syndrome," in which farmers' expectation of decline may actually stimulate it.

Photo: Development increases the likelihood of conflict between farmers and their neighbors.

Thor Swift

As agriculture loses ground, farmers and ranchers become a minority and often lose influence in their communities. This weakens their political voice, especially in local planning and zoning decisions. While zoning bylaws can be drafted to support agriculture and limit the forces that cause decline, without vision and attention to the needs of the agricultural community, new ordinances can be hostile to commercial production.

Larry Lefever for Grant Heilman Photography, Inc.

Photo: Failure to address the issues of urban influence and conversion pressure may mean an end to farming as a way of life.

The clash of urban and rural cultures is personal as well as economic and political. Although they are entrepreneurs, most farmers and ranchers work the land because they love it. They are as motivated by family, faith and feeling as they are compelled to make a profit. They serve the public in a fundamental way by providing life-sustaining food and other useful products. Many have farmed or ranched for their entire lives. They value their communities and generally see themselves as good stewards of the land. Failing to address the issues of urban influence and conversion pressure may mean an end to their way of life. We must address the challenges together to secure the land base, support agriculture and maintain a high quality of life in our communities.

RESPONDING TO THE CHALLENGES

State and local governments have been taking the lead in protecting agricultural land since the Maryland Legislature approved the nation's first differential property tax assessment law in 1956. Over the past 40 years, public concern about the loss of farm and ranch land has led to the enactment of some form of property tax relief for farmland and right-to-farm laws in every state. Several other state laws and hundreds of local ordinances have been designed specifically to stabilize the land base and support the economic viability of agriculture.

Sixteen states have voluntary agricultural district programs, which provide farmers with a variety of benefits, including tax relief, protection from government taking of farmland by eminent domain and protection against municipal annexation. Fourteen states have programs to purchase agricultural conservation easements on farmland (PACE is also known as purchase of development rights). PACE is a good way to invest in the infrastructure of agriculture and permanently protect land for future generations. Some states also have supported agriculture through executive orders, and a few have used comprehensive growth management laws to direct growth away from farmland.

Communities have addressed their own challenges in many enterprising ways. They have used comprehensive land use planning and farm-friendly zoning ordinances to control growth in farming areas. When farmers participate in the development of comprehensive plans and zoning ordinances, they can be sure that local regulations will support agriculture. Agricultural protection zoning has been used effectively in places as varied as Lancaster County, Pa., Story County, Iowa, Marathon County, Wis., Napa County, Calif., and Walla Walla County, Wash.

APZ seeks to keep most non-farm residential development out of farming areas, in an effort to minimize conflicts between farmers and other residents. APZ also has been found to support agricultural infrastructure, such as farm supply and equipment dealers, food processors and specialized services such as veterinarians and farm credit services. Some places have been very specific in drafting zoning ordinances; Hall County, Ga., for example, has planned a commercial farm district that excludes hobby farms. Farm-friendly zoning also can be used to encourage roadside stands, alternative farm enterprises and high visibility farm signs, and to give agriculture priority over other land uses.

Some communities have initiated county- or town-level PACE and transfer of development rights programs to compensate landowners for placing restrictions on their land. In some states, such as New Jersey and Pennsylvania, state PACE programs require local matching funds. TDR programs allow landowners to transfer the right to develop land in agricultural areas to designated areas closer to urban services. Generally, these programs are established by local zoning ordinances.

Farmers have also responded to the challenges by adapting their operations to take advantage of urban opportunities. Farms in metropolitan areas tend to be more specialized and more intensive than those in rural areas. They produce a diversity of high value crops such as fruits and vegetables, nursery products and specialty livestock. They often change from selling their products wholesale to direct marketing through roadside stands, farmers' markets and pick-your-own operations, or to selling directly to stores and restaurants. These farms are highly responsive to market demand and sometimes supply services to urban residents to increase income. Farm-based services include recreational activities, landscaping and bed-and-breakfast facilities. Metropolitan farms also produce value-added products such as cider, wine, potato chips, baked goods, gift baskets and flower arrangements. Some of them even promote the fun of rural living by offering ranch vacations, hayrides, bus tours, haunted haystacks or maple syrup breakfasts[23]. Community Supported Agriculture is also increasingly popular near urban areas. CSA farms sell weekly shares of their harvest to shareholders who pay for their produce at the beginning of the season.

Producers farther from cities can also directly benefit from urban markets. Those with sufficient volume can cut out middlemen and sell to large supermarket chains. Others market their products through mail-order catalogues, or drive several hours to farmers' markets in urban centers. Some farms are even beginning to advertise and sell products on the Internet. Thus, through creative marketing strategies, some of the challenges of farming in urban-influenced areas can be turned into opportunities. Agriculture can be profitable in an urban context and can adapt to changing social and economic conditions.

Still, no one technique can address all the challenges of farming in and around developing communities, and no state legislature, county commission or town council can alone solve the problems facing agriculture. The most successful efforts to protect farmland have resulted from state and local governments' working together with private organizations and concerned citizens, using a combination of regulatory and incentive-based strategies to address the challenges of farming on the edge.

STATE AND LOCAL GOVERNMENT ROLES IN FARMLAND PROTECTION

Cooperation among different levels of government is important because each level has a different role to play. Local governments are in the best position to understand the real problems facing real farmers in their own communities. Local officials hear complaints from farmers whose crops are vandalized, and from non-farmers who object to the smell of manure. They send notices to farmers who are behind in paying their property taxes. They watch the titles to farms change hands, and approve subdivision plats and building permits. Local officials and planners can advocate unrestrained growth that threatens the future of agriculture. Alternatively, they can respond to the challenges facing farmers by promoting a vision of the future that includes a strong role for agriculture and by establishing land use policies that support farming and ranching.

County and municipal government programs can be designed carefully to meet the needs of agricultural operations in specific local areas. One community may support its small, intensive vegetable farms by organizing a farmers' market; another may protect its feedlots with agricultural protection zoning and a right-to-farm ordinance. Local governments can take a strategic approach to farmland protection by targeting programs to the most fertile land and economically viable operations. They can also use farmland protection programs to achieve other important community goals. For example, towns and counties often protect farm and ranch land that provides scenic views, includes important water resources or preserves historic landscapes. Municipalities can design farmland protection programs to meet their own specific needs.

But while farmers often depend on land, markets and services that span town and county borders, local governments cannot control what happens outside their boundaries. Farmland conversion in one county can jeopardize agricultural support businesses in another. The loss of a large slaughterhouse, vegetable processing plant or grain milling operation can threaten the viability of agricultural operations in many surrounding towns. Most municipalities lack the power and resources to protect the large areas of land needed to support entire agricultural industries. The most ambitious local-level farmland protection program may not be sufficient to keep agriculture viable if adjacent jurisdictions are promoting sprawling development.

In comparison to local governments, states have broad regulatory powers. State governments approve and manage large infrastructure projects, such as highway construction, that can result in farmland conversion. State governments control tax policy. They set the rules that govern local land use regulation. Finally, state legislatures control state coffers. They can create and fund their own programs to protect farmland, or they can enact enabling legislation and appropriate funding for local governments to do so.

State officials can analyze agricultural trends and patterns of farmland conversion, and use this information to develop statewide agricultural land protection strategies. State officials often target farmland protection programs to important agricultural regions that encompass many local jurisdictions. The officials set priorities for protection, and can award funding to local governments that work to achieve state goals. State involvement in farmland protection increases the likelihood that a "critical mass" of land will remain available for agriculture. This strategic approach, however, may mean that state programs do not meet the needs of every local jurisdiction—protecting large blocks of farmland may be a higher state priority than preventing development of a single farm that has great economic, aesthetic and ecological value to a single town.

REGULATORY AND INCENTIVE-BASED STRATEGIES

Both state and local governments can develop farmland protection programs that use a combination of regulatory and incentive-based strategies. This "carrots-and-sticks" approach is effective because it addresses the drawbacks of one technique with the benefits of another.

Growth management programs, comprehensive planning, agricultural protection zoning, mitigation ordinances and executive orders are the "sticks" of farmland protection. The primary advantage of regulatory strategies is that they can be put in place relatively quickly, and typically require no public expenditure. Growth management laws and county and municipal zoning ordinances allow state and local governments to protect very large areas of farmland with a single legislative vote.

Regulatory strategies are not magic bullets. Their primary disadvantage is that they are temporary. Regulations, zoning ordinances and comprehensive plans can be changed as demographics and political realities shift. There are no guarantees that farmland protected today will not be developed tomorrow.

Regulatory strategies are also controversial. Growth management laws and APZ ordinances restrict private property rights and may reduce the market value of farmland. This is particularly troubling for farmers and ranchers whose entire net worth consists of equity in land. While many farmers and ranchers support the goals of farmland protection, they often speak out against regulatory approaches as unfair solutions to problems that affect whole communities. Farmers and ranchers are most likely to support growth management programs and APZ ordinances if they are implemented when agricultural land values are stable, or if they are used in conjunction with incentive-based strategies that provide some compensation for the restrictions being imposed.

Differential assessment laws, circuit breaker tax relief credits, right-to-farm statutes and PACE and transfer of development rights programs are the "carrots" of farmland protection. These techniques are voluntary—farmers can choose whether they want to take advantage of the benefits that are offered. Differential assessment and circuit breaker programs reduce farmers' taxes. PACE and TDR programs compensate farmers and ranchers for placing restrictions on their land. Incentive-based programs tend to be more popular among landowners than regulatory approaches. And unlike the regulatory strategies, PACE and TDR programs protect farmland permanently.

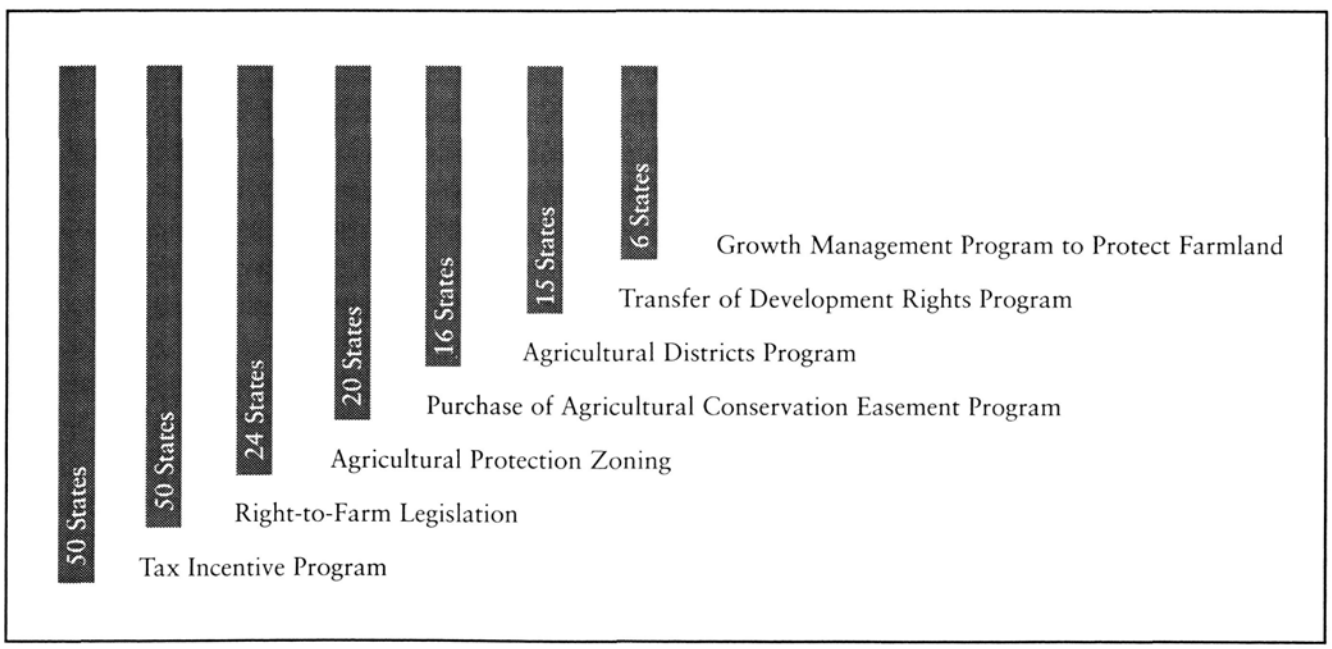
Of course, there is no free lunch when it comes to protecting farmland. Many of these "carrots" are expensive. Buying conservation easements costs money, especially when the value of land has been inflated by public investment in roads, schools and water and sewer systems. TDR programs have been promoted as a low-cost alternative to PACE. In reality, they just shift the cost from the public sector to the private sector. Establishing a private market for development rights is tricky, and few jurisdictions have done it successfully.

The high cost of purchasing easements on farmland results in a very slow pace of protection. The number of applications to PACE programs always exceeds the number of easements purchased in any given year. Farmers may not be able to wait for the state or local government to buy an easement. Unless a significant source of funding is available for a long period of time, PACE programs may not be able to protect a critical mass of agricultural land.

Tax incentive programs are less expensive than PACE, and right-to-farm laws require no public expenditure. These techniques are typically very popular with farmers and ranchers, but they do not provide strong or permanent farmland protection.

Agricultural district programs generally combine carrots and sticks. They offer a variety of benefits, including eligibility for PACE programs and soil and water conservation grants, and protection from eminent domain proceedings and municipal annexation. In some states, farmers may not develop land while it is enrolled in a district. Each agricultural district law contains different benefits and restrictions, so the extent to which these laws protect farmland varies from state to state.

FIGURE 0.3: SUMMARY OF FARMLAND PROTECTION ACTIVITIES BY STATE



THE FEDERAL ROLE IN FARMLAND PROTECTION: GOOD POLICIES IN SEARCH OF IMPLEMENTATION

State and local governments have led public farmland protection efforts. The federal government, despite playing a major role in reducing soil erosion and meeting other agricultural resource challenges, has been hesitant to become fully engaged in protecting agricultural land from development. Federal policies supportive of state and local efforts have been adopted, but have not been implemented consistently or completely. However, several pieces of legislation have important implications for farmland protection efforts at the state and local levels, and are therefore covered here.

The Farmland Protection Policy Act

As part of the 1981 Farm Bill, Congress passed the Farmland Protection Policy Act for the purpose of "minimiz[ing] the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses[24]." Managed by the USDA, the law is intended to assure that "federal programs are administered in a manner that, to the extent practicable, will be compatible with state and local government, and private programs and policies to protect farmland."

The FPPA requires all federal agencies to review provisions of laws, administrative rules and regulations, and policies and procedures, and identify alternatives that could prevent or at least minimize farmland conversion. The law also addresses all construction projects (such as highways, airports, dams and federal buildings) sponsored or financed in whole or part by the federal government that may convert farmland to nonagricultural use, and applies to the management of federal lands. Private construction that is merely subject to federal permitting and licensing, projects planned and completed without any assistance from a federal agency, federal projects related to national defense and those proposed on land already committed to urban development are not included.

The FPPA directed the federal government to "develop criteria for identifying the effects of federal programs on the conversion of farmland to nonagricultural uses." Rules issued by the USDA's Natural Resources Conservation Service suggest forms and procedures that federal agencies should use to evaluate projects, based on the Land Evaluation and Site Assessment system[25].

LESA is a numerical system that measures the quality of farmland[26]. It was developed to help federal, state and local government officials decide which land should be protected for agriculture, and which parcels are suitable for development[27]. LESA systems have two components. The Land Evaluation element rates soil quality as measured by soil potential ratings, soil productivity ratings, USDA Land Capability Class, National Important Farmland Classification or a combination of these factors. The Site Assessment component measures suitability of the land for farming based on agricultural factors, development pressure and the presence of other valuable public resources. A LESA analysis typically produces scores for each set of factors, which are combined to obtain a total score.

Generally, LESA scores are used to rank or compare a variety of farmland parcels to determine which should be protected. Interpreting the results is a matter of judgment. While a very high score generally indicates the most valuable farmland, medium-range scores may indicate parcels with high soil quality and high development pressure, medium soil quality and moderate development pressure or relatively poor soil quality and very low development pressure. The most recent LESA guidebook, published by the Soil and Water Conservation Society in 1996, warns that "LESA is not intended to be a stand-alone technique to make decision about farmland or a technique to protect farmlands. It is intended to be an objective tool to evaluate farmland sites as part of a decision-making process[28]." Many state and local governments use LESA systems as part of their farmland protection programs.

While the language of the FPPA suggests that it can be a powerful tool for protecting farmland, it has not had much effect to date. Nonetheless, there are encouraging signs that the FPPA will become a more effective tool for states and localities to use in promoting farmland protection. After a 13-year delay, federal regulations to implement the law were adopted in 1994. The willingness of states and localities to invoke the FPPA—by involving themselves in the planning of federally sponsored projects that may conflict with local or regional farmland protection objectives—will make the law effective.

The FPPA also directed the Secretary of Agriculture to "designate one or more farmland information centers to serve as central depositories and distribution points for information on farmland issues, policies, programs, technical principles, and innovative actions or proposals by local and State governments." American Farmland Trust's Farmland Information Center—a partnership among AFT, the NRCS and the National Agricultural Library—was created under this provision.

Farms for the Future Act

The Farms for the Future program, created by the 1990 Farm Bill, authorized federally subsidized loans to state and local governments for purchase of agricultural conservation easements on farmland. Farms for the Future provided for federal loan guarantees to match state investment in PACE on a 2-to-1 basis. A pilot program was created in Vermont; the program borrowed a total of $23,548,465 between 1993 and 1995, allowing the state to acquire easements on 44,000 acres of farmland. This program is now inactive, having been superseded by the Farmland Protection Program.

Farmland Protection Program

In the 1996 Farm Bill, the federal government took its most significant step to date toward supporting state and local farmland protection programs. The Federal Agricultural Improvement and Reform Act, as the bill is formally titled, directed the USDA to establish and carry out a program to purchase agricultural conservation easements or other interests in prime and unique farmland for the purpose of protecting it from nonagricultural use. The law states that farmland, to be eligible, must be subject to a pending purchase offer from a state or local government. NRCS is responsible for administering the program. The law authorized up to $35 million to be devoted to such purchases from the funds of the Commodity Credit Corporation, the same federal entity that makes farm income support payments.

The initial round of purchases was conducted under an NRCS request for proposals. State and local governments were invited to apply for 50-50 federal matching funds to pay for farmland protection transactions. They had to demonstrate a commitment to farmland protection—not just the protection of open space—and pledge matching funds. Easements must include a clause enabling the NRCS to enforce the easements if the state or local holder failed to do so. In the first round, $14,325,000 was awarded to 37 programs in 17 states, and it is anticipated that as a result, 76,756 acres of farmland will be protected.

Legislative debate over the Farmland Protection Program suggests that the bill's sponsors intended to make the federal government a "full partner" with states and local governments. While the program clearly has significant potential to protect farmland, the current level of funding is inadequate given the growing interest in PACE and the rising cost of farmland in most metropolitan areas. With the current cost of agricultural conservation easements ranging from $500 to more than $10,000 per acre, the $35 million in federal matching funds will be exhausted rapidly, and additional funds will need to be authorized.

STRUCTURE OF THIS BOOK

The rest of this book focuses on techniques and strategies that state governments and communities have used to protect farmland and support agriculture. In Section One—The Farmland Protection Toolbox—we present an overview of popular tools, ranging from far-reaching approaches such as comprehensive growth management to very specific applications such as mitigation ordinances. This is followed by in-depth chapters on techniques that protect farmland (APZ, PACE and TDR) and the most popular techniques used to support agriculture (tax programs and right-to-farm legislation), as well as agricultural district programs, which generally do both. We have attached interesting ordinances and support materials as appendices to these chapters, and a resource list at the end of the book.

In Section Two—Putting it all Together: Building a Comprehensive Farmland Protection Program—we show how the techniques have been applied successfully in counties in California, Maryland and in the state of Washington. We look at how communities have combined different strategies to stabilize the land base and support the economics of agriculture. Finally, we use lessons from the case studies to demonstrate how to build a comprehensive farmland protection program. We have included a list of acronyms at the end of this chapter and a glossary at the end of the book to make it easier to follow the text.

ACRONYMS

AFT	American Farmland Trust
AFPB	Agricultural and farmland protection board (New York)
APR	Agricultural preservation restriction (Massachusetts)
APZ	Agricultural protection zoning
CAFO	Concentrated animal feeding operation
COCS	Cost of community service study
CSA	Community supported agriculture
CSR	Corn Suitability Rating
DFA	Department of Food and Agriculture (Massachusetts)
FPP	Farmland Protection Program (Federal)
FPP	Farmland Preservation Program (King County, Washington)
FPPA	Farmland Protection Policy Act (Federal)
GAAMPs	Generally accepted agriculture and management practices
GIS	Geographic information system
GMA	Growth Management Act (Washington)
LAFCO	Local Agency Formation Commission (California)
LESA	Land Evaluation and Site Assessment
LPS	Land preservation subdivision
MALPF	Maryland Agricultural Land Preservation Foundation
MALPP	Maryland Agricultural Land Preservation Program
MALT	Marin Agricultural Land Trust
MET	Maryland Environmental Trust
NALS	National Agricultural Lands Study
NRCS	Natural Resources Conservation Service (Federal)
PACE	Purchase of agricultural conservation easements
PDR	Purchase of development rights
PUD	Planned unit development
SCS	Soil Conservation Service (now known as NRCS)
SWCD	Soil and water conservation district
TDR	Transfer of development rights
TRPC	Thurston Regional Planning Council (Thurston County, Washington)
UGB	Urban growth boundary
VHCB	Vermont Housing and Conservation Board

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SECTION ONE: THE FARMLAND PROTECTION TOOLBOX

SECTION ONE: FARMLAND PROTECTION TOOLBOX

CHAPTER 1: TOOLS AND TECHNIQUES

American Farmland Trust

This chapter provides a brief description of the tools and techniques that state and local governments are using to protect farmland and ensure the economic viability of agriculture. Some of these methods are used widely. Others are new and experimental. Some of the techniques result in programs that are enacted and administered at the state level; others are used primarily by local governments. It is important to remember that many of the most effective farmland protection programs use both regulatory and incentive-based strategies.

STATE EXECUTIVE ORDERS

Governors of at least 10 states have issued executive orders that document the importance of agriculture and direct state agencies not to engage in or provide funding for projects that would result in farmland conversion. By establishing state policy and creating task forces to investigate farmland conversion, state executive orders have the potential to build public and institutional support for other farmland protection programs. By restricting the use of state funds for projects that would result in the loss of agricultural land, executive orders influence the actions of local governments.

State executive orders mirror the federal Farmland Protection Policy Act that was included in the 1981 Farm Bill. The FPPA declares federal programs should be administered "in a manner that, to the extent practicable, will be compatible with state and local government, and private programs and policies to protect farmland."

In theory, executive orders are designed to promote consistent policy on agriculture and farmland protection. The federal government spends billions of dollars on programs to improve the economic viability of agriculture. All states have right-to-farm laws and differential assessment or circuit breaker programs that are intended to support agriculture, and 11 state governments have collectively spent more than $735 million to purchase agricultural conservation easements on farmland. Given the scale of public investment in supporting agriculture, the idea that states should not spend taxpayer dollars to convert productive farmland to non-agricultural use seems like simple common sense.

In reality, however, most state executive orders have not been fully implemented. One exception is Massachusetts' Executive Order 193, which directs state agencies to mitigate the conversion of state-owned agricultural lands and stipulates that state and federal funds may not be used to encourage the conversion of agricultural land if there are feasible alternatives. The state Department of Food and Agriculture recently invoked this provision to prevent a town from acquiring farmland by eminent domain. The town had intended to incorporate the land into an industrial park, but abandoned its plan when it learned that the state would not approve economic development funds for the project. The DFA also has an agreement with the Massachusetts Housing Finance Agency to review the location of proposed projects before the agency commits to funding.

Colorado, Kentucky, Michigan and Ohio used executive orders to create task forces on farmland protection. Michigan's Farmland and Agricultural Development Task Force, for example, was instructed to identify trends, causes and consequences of agricultural land's being converted to non-agricultural uses; describe voluntary methods and incentives for maintaining land for agricultural production; and provide recommendations for enhancing agricultural viability while protecting private property rights[1].

STATE GROWTH MANAGEMENT LAWS

Growth management laws are designed to control the timing and phasing of urban growth and to determine the types of land use that will be permitted at the local and regional levels. They take a comprehensive approach to regulating the pattern and rate of development and set policies to ensure that most new construction is concentrated within designated urban growth areas or boundaries (UGBs). They direct local governments to identify lands with high resource value and protect them from development. Some growth management laws require that public services such as water and sewer lines, roads and schools be in place before new development is approved. Others direct local governments to make decisions in accordance with a comprehensive plan that is consistent with plans for adjoining areas.

Eleven states have growth management statutes, but only six—Hawaii, Maryland, New Jersey, Oregon, Vermont and Washington—address the issue of farmland conversion. These six laws vary in the controls that they impose on state and local governments and in the extent to which they protect agricultural land from development.

Oregon has one of the nation's strongest growth management laws. Its 1972 Land Conservation and Development Act directed county officials to inventory farmland and designate it for agriculture in their comprehensive plans. County governments were required to enact exclusive agricultural protection zoning and adopt other farmland protection policies. City governments were required to establish UGBs. As a result of this law, every county in the state has implemented APZ, and more than 16 million acres of agricultural land have been protected from development.

Washington's Growth Management Act was adopted in 1990 and strengthened in 1991. GMA requires all counties to designate important agricultural land. They also must adopt regulations to ensure that land uses adjacent to farm and ranch land do not interfere with agricultural operations. Fast-growing counties and their incorporated areas must prepare detailed comprehensive plans that protect natural resource areas. County comprehensive plans must be consistent with the plans of their cities and all adjacent cities and counties. Counties required to plan under the act are also required to designate urban growth areas to accommodate projected urban growth over a 20-year period. In general, urban services may not be extended beyond the boundaries of urban growth areas. These provisions have been an important factor in the growth of county-level farmland protection programs in Washington during the 1990s. At least three counties have enacted or strengthened APZ ordinances since the law was passed. Two counties have created PACE programs.

Oregon and Washington have been most effective in using growth management laws to promote farmland protection at the local level. Hawaii has the oldest growth management law. The statewide land use plan for Hawaii created four zones, one of which is dedicated to agriculture. The agricultural zone includes approximately 2 million acres, but much of this land is used for recreation and open space—only 0.5 million acres are actually in agricultural use. The law does not designate a farmland protection role for local governments.

Vermont has two growth management laws. Act 250, approved in 1970, requires state review of commercial, industrial and residential development projects that meet the act's

criteria. Developers must minimize the loss of primary agricultural soils. In some cases, they may satisfy this requirement by paying a fee. These funds are used to purchase agricultural conservation easements. Act 200, passed in 1988, encouraged local governments to develop comprehensive plans that would guide regional and state government planning and decision-making. According to state officials, this law was designed to facilitate "bottom-up" planning and enhance local control over land use decisions. In practice, however, town governments have complained that the law takes away local authority. Local government opposition to Act 200 planning has thwarted implementation of the law. While Act 200 plans were intended to guide development review decisions under Act 250, this has not happened to date[2].

New Jersey's state development plan is designed to accommodate urban growth by directing it to defined urban areas. It provides a statewide framework that is intended to guide the investment policies of state agencies. County governments participated in the development of the plan but are not required to set policies or make decisions in accordance with the final document.

Maryland's Growth Management Act outlines a set of policies to guide growth. It calls for protection of natural resources, including agricultural land, and for growth to be directed to existing population centers. State projects must be consistent with these policies. Local governments were required to adopt new comprehensive plans and revise their zoning and subdivision ordinances to implement the policies. They were also directed to adopt flexible development regulations and new strategies to promote development in areas intended for growth. The full impact of the Maryland law will not be clear until this process is completed during the late 1990s.

These examples show that growth management laws can be a powerful force to protect agricultural land, as in Oregon; a foundation for the development of local farmland protection programs, as in Washington; or a stimulus for local governments to engage in comprehensive planning, as in Vermont, New Jersey and Maryland.

COMPREHENSIVE PLANNING

Comprehensive planning allows counties, cities, towns and townships to create a vision for their joint future. Comprehensive plans, which are also known as master or general plans, outline local government policies, objectives and decision guidelines, and serve as blueprints for development. They typically identify areas targeted for a variety of different land uses, including agriculture, forestry, residential, commercial, industrial and recreational. Comprehensive plans provide a rationale for zoning and promote the orderly development of public services.

Creating or revising a comprehensive plan offers communities many opportunities to protect agricultural land. Planners often identify and map important farm and ranch land and set policies to protect the land and promote commercial agriculture. Plans can promote compact urban growth by establishing urban growth boundaries and setting a schedule and rationale for the development of new infrastructure.

Some communities devote a section of their comprehensive plans to agriculture. The agricultural element of the General Plan for Stanislaus County, Calif., has three goals: to strengthen the agricultural sector of the county's economy, to preserve agricultural lands for agricultural use and to protect the natural resources that sustain the agricultural economy. The plan recommends policies to implement the goals, such as permitting farmstands and agricultural service businesses in agricultural zones, and calls on the county to create an agency to develop infrastructure for farms and agricultural business. The document also outlines specific criteria for evaluating amendments to the General Plan that would lead to farmland conversion.

A comprehensive plan can form the foundation of a local farmland protection strategy. For example, Lancaster County, Pa., used its plan as the basis of a local growth management program. The plan identified areas that would be protected for farming, and areas where growth would be encouraged. It included policies designed to conserve natural resources and provide affordable housing and adequate public services. The county worked with its cities and townships to develop UGBs and encouraged local governments to adopt APZ. The Lancaster Agricultural Preserve Board purchases easements on farms that border the UGBs. The board's goal is to establish a ring of protected farms surrounding areas that are subject to APZ. County officials hope this approach will prevent the extension of water and sewer lines into farming areas.

AGRICULTURAL PROTECTION ZONING

Zoning is a form of local government land use control. Zoning ordinances segment counties, cities, townships and towns into areas devoted to specific land uses and establish standards and densities for development.

APZ ordinances stabilize the agricultural land base. They designate areas where farming is the primary land use and discourage other land uses in those areas. APZ limits the activities that are permitted in agricultural zones. The most restrictive regulations prohibit any uses that might be incompatible with commercial farming.

APZ ordinances also restrict the density of residential development in agricultural zones. Maximum densities range from one house per 20 acres in the eastern United States to one house per 640 acres in the West. Some local ordinances also contain right-to-farm provisions and authorize commercial agricultural activities, such as farmstands, that enhance farm profitability. Occasionally, farmers in an agricultural zone are required to prepare farm management plans.

In most states, APZ is implemented at the county level, although towns and townships may also have APZ ordinances. Zoning can be modified through the local political process. Generally, the enactment of an APZ ordinance results in a reduction of permitted residential densities in the new zone. This reduction in density, also called downzoning, limits development, but it is generally politically controversial because it can reduce the market value of land. A change in zoning that increases permitted residential densities is known as upzoning. A change in the zoning designation of an area—from agricultural to commercial, for example—is known as rezoning. Successful petitions for upzoning and rezoning in agricultural protection zones often result in farmland conversion.

CLUSTER ZONING

Cluster zoning ordinances allow or require houses to be grouped close together on small lots to protect open land. The portion of the parcel that is not developed may be restricted by a conservation easement. Cluster developments are also known as cluster subdivisions, open space or open land subdivisions.

Cluster subdivisions can keep land available for agricultural use, but they are generally not designed to support commercial agriculture. The protected land is typically owned by developers or homeowners' associations. Homeowners may object to renting their property to farmers and ranchers because of the noise, dust and odors associated with commercial farming. Even if the owners are willing to let the land be used for agriculture, undeveloped portions of cluster subdivisions may not be large enough for farmers to operate efficiently, and access can also be a problem. For these reasons, cluster zoning has been used more successfully to preserve open space or to create transitional areas between farms and residential areas than to protect farmland.

MITIGATION ORDINANCES AND POLICIES

Mitigation ordinances are a new farmland protection technique. In 1995, city officials in Davis, Calif., enacted an ordinance that requires developers to permanently protect one acre of farmland for every acre of agricultural land they convert to other uses. Generally, developers place an agricultural conservation easement on farmland in another part of the city, although mitigation may also be satisfied by paying a fee. While most of the regulatory farmland protection techniques restrict the property rights of farmers, the Davis mitigation ordinance makes developers pay for farmland conversion (see Appendix A, p. 41 for a copy of the ordinance).

King County, Wash., has a "no net loss of farmland"policy in its comprehensive plan. The policy prohibits the conversion of land subject to APZ unless an equal amount of agricultural land of the same or better quality is added to the county's agricultural production zones.

INCENTIVE-BASED TECHNIQUES

DIFFERENTIAL ASSESSMENT LAWS

Every state except Michigan has a differential assessment law. These laws improve the economic viability of agriculture by reducing the amount of money farmers are required to pay in local real property taxes. Differential assessment is also known as current use assessment, current use valuation, farm use valuation, use assessment and use value assessment.

Differential assessment laws direct local governments to assess agricultural land at its value for agriculture, instead of its full fair market value, which is generally higher. Differential assessment laws are enacted by states and implemented at the local level. With a few exceptions, the cost of the programs is borne at the local level.

Differential assessment programs help ensure the economic viability of agriculture. Since high taxes eat up profits, and lack of profitability is a major motivation for farmers to sell land for development, differential assessment laws also protect the land base. Finally, these laws help correct inequities in the property tax system. Owners of farmland demand fewer local public services than residential landowners, but they pay a disproportionately high share of local property taxes. Differential assessment helps bring farmers' property taxes in line with what it actually costs local governments to provide services to the land.

CIRCUIT BREAKER TAX RELIEF CREDITS

Circuit breaker tax programs offer tax credits to offset farmers' real property tax bills. Four states have circuit breaker programs. In Michigan, Wisconsin and New York, farmers may receive state income tax credits based on the amount of their real property tax bill and their income. In Iowa, farmers receive school tax credits from their local governments when school taxes exceed a statutory limit. The counties and municipalities are then reimbursed from a state fund. Like differential assessment laws, circuit breaker tax relief credits reduce the amount farmers are required to pay in taxes. The key differences between the programs are that most circuit breaker programs are based on farmer income and are funded by state governments.

In Michigan, landowners who wish to receive circuit breaker credits must sign 10-year restrictive agreements with their local governments that prevent farmland conversion. In Wisconsin, counties and towns must adopt plans and enact zoning to ensure that tax credits are targeted to productive land that will remain in agricultural use. The state's circuit-breaker program has facilitated the adoption of agricultural protection zoning in more than 400 Wisconsin jurisdictions.

RIGHT-TO-FARM LAWS

State right-to-farm laws are intended to protect farmers and ranchers from nuisance lawsuits. Every state in the nation has at least one right-to-farm law. Some statutes protect farms and ranches from lawsuits filed by neighbors who moved in after the agricultural operation was established. Others protect farmers who use generally accepted agricultural and management practices and comply with federal and state laws. Twenty-three right-to-farm laws also prohibit local governments from enacting ordinances that would impose unreasonable restrictions on agriculture.

Right-to-farm laws are a state policy assertion that commercial agriculture is an important activity. The statutes also help support the economic viability of farming by discouraging neighbors from filing lawsuits against agricultural operations. Beyond these protections, it is unclear whether right-to-farm laws help maintain the land base.

Local governments around the nation are enacting their own right-to-farm laws to strengthen and clarify weak language in state laws. Local right-to-farm laws are most widespread in California, where the state farm bureau developed and distributed a model right-to-farm ordinance during the 1980s.

A local right-to-farm ordinance can serve as a formal policy statement that agriculture is a valuable part of the county or town economy and culture. Some require that a notice be placed on the deed to all properties in agricultural areas, cautioning potential buyers that they may experience noise, dust, odors and other inconveniences due to farming and ranching operations. Local ordinances help educate residents about the needs of commercial agriculture and reassure farmers that their communities support them.

CONSERVATION EASEMENTS

Conservation easements limit land to specific uses and thus protect it from development. These voluntary legal agreements are created between private landowners (grantors) and qualified land trusts, conservation organizations or government agencies (grantees). Grantors may receive federal tax benefits as a result of donating easements[3]. Grantees are responsible for monitoring the land and enforcing the terms of the easements.

Easements may apply to entire parcels of land or to specific parts of a property. Most easements are permanent; term easements impose restrictions for a limited number of years.* All conservation easements legally bind future landowners. Land protected by conservation easements remains on the tax rolls and is privately owned and managed. While conservation easements limit development, they do not affect other private property rights.

Every state in the nation has a law pertaining to conservation easements. The National Conference of Commissioners on Uniform State Laws adopted the Uniform Conservation Easement Act in 1981. The Act was designed to serve as a model for state legislation to allow qualified state agencies and private conservation organizations to accept, acquire and hold less-than-fee-simple interests in land for the purposes of conservation and preservation. Since the Uniform Act was approved, 21 states have adopted conservation easement-enabling legislation based on this model and 23 states have drafted and enacted their own conservation easement-enabling laws. In Pennsylvania, conservation easements are authorized by common law. Alabama, Oklahoma and Wyoming do not have separate provisions of state law authorizing the conveyance of conservation easements, but state agencies are given the power to hold title to easements in their authorizing legislation[4].

* There are no income tax deductions for term easements.

Agricultural Conservation Easements

Agricultural conservation easements are designed specifically to protect farmland. Grantors retain the right to use their land for farming and other purposes that do not interfere with or reduce agricultural viability. They hold title to their properties, and may restrict public access, sell, give or transfer their property, as they desire. Farmers also remain eligible for any state or federal farm program for which they qualified before entering into the conservation agreement.

Agricultural conservation easements are a flexible farmland protection tool. Private land trusts and other conservation organizations educate farmers about the tax benefits of donating easements, and state and local governments have developed programs to purchase agricultural conservation easements from landowners. In addition, agricultural conservation easements can be designed to protect other natural resources, such as wetlands and wildlife habitat.

PURCHASE OF AGRICULTURAL CONSERVATION EASEMENT PROGRAMS

Purchase of agricultural conservation easement programs pay farmers to protect their land from development. PACE is known by a variety of other terms, the most common being purchase of development rights. Landowners sell agricultural conservation easements to a government agency or private conservation organization. The agency or organization usually pays them the difference between the value of the land for agriculture and the value of the land for its "highest and best use," which is generally residential or commercial development. Easement value is most often determined by professional appraisals, but may also be established through the use of a numerical scoring system that evaluates the suitability for agriculture of a piece of property.

State and local governments can play a variety of roles in the creation and implementation of PACE programs. Some states have passed legislation that allows local governments to create PACE programs. Others have enacted PACE programs that are implemented, funded and administered by state agencies. Several states work cooperatively with local governments to purchase easements. A few states have appropriated money for use by local governments and private nonprofit organizations. Finally, some local governments have created their own PACE programs in the absence of any state action.

Cooperative state-local PACE programs have some advantages over independent state or local programs. Cooperative programs allow states to set broad policies and criteria for protecting agricultural land, while county or township governments select the farms that they believe are most critical to the viability of local agricultural economies, and monitor the land once the easements are in place. Involving two levels of government generally increases the funding available for PACE. Finally, cooperative programs increase local government investment in farmland protection.

Both state and local PACE programs are very popular with farmers, and funding for these programs has never been sufficient to meet the demand to sell easements. In 1996, the federal government approved limited funding for state and local PACE programs as part of the

Federal Agricultural Improvement and Reform Act. To qualify, state and local governments must demonstrate a commitment to farmland protection and appropriate matching funds.

TRANSFER OF DEVELOPMENT RIGHTS

Transfer of development rights programs allow landowners to transfer the right to develop one parcel of land to a different parcel of land. Generally established through local zoning ordinances, TDR programs can protect farmland by shifting development from agricultural areas to areas planned for growth. When the development rights are transferred from a piece of property, the land is restricted with a permanent agricultural conservation easement. Buying development rights generally allows landowners to build at a higher density than ordinarily permitted by the base zoning. TDR is known as transfer of development credits in California and in some regions of New Jersey.

TDR is used by counties, cities, towns and townships. Two regional TDR programs for farmland protection were developed to protect New Jersey's Pinelands and the pine barrens of Long Island, N.Y. TDR programs are distinct from PACE programs because they involve the private market. Most TDR transactions are between private landowners and developers. Local governments approve transactions and monitor easements. A few jurisdictions have created "TDR banks" that buy development rights with public funds and sell them to developers and other private landowners.

Some states, such as New Jersey, have enacted special legislation authorizing local governments to create TDR programs. Other states, notably Virginia, have consistently refused to give local governments such authorization. Counties and towns have created TDR programs without specific state authorizing legislation; municipal governments should work with their attorneys to determine whether other provisions of state law allow them to use TDR.

While dozens of local jurisdictions around the country allow the use of TDR, only a few of them have used the technique successfully to protect farmland. TDR programs are complex and must be carefully designed to achieve their goal. Communities that have been most successful in using TDR are characterized by steady growth, with the political will to maintain and implement strong zoning ordinances and planning departments that have the time, knowledge and resources to administer complex land use regulations.

AGRICULTURAL DISTRICT LAWS

Agricultural district laws allow farmers to form special areas where commercial agriculture is encouraged and protected. Programs are authorized by state legislatures and implemented at the local level. Enrollment in agricultural districts is voluntary; in exchange, farmers receive a package of benefits, which varies from state to state. Some agricultural district laws require farmers to sign agreements that prohibit development for the term of enrollment.

Sixteen states have enacted agricultural district laws. Each law provides a unique set of incentives. Common benefits of enrollment include automatic eligibility for differential assessment, protection from eminent domain and municipal annexation, enhanced right-to-farm protection, exemption from special local tax assessments, limits on non-farm development in the district and eligibility for state PACE programs.

In most states with agricultural district programs, farmers who wish to form a district apply directly to their local governments. Local governments review and approve applications, which are then sent to the state for final approval. In some states, local governments must develop plans to protect agriculture and farmland before farmers may apply to create agricultural districts. Virginia and North Carolina have legislation that allows local governments to create their own programs. Minnesota has two agricultural district programs: One is implemented by the state, the other applies only to the Minneapolis-St. Paul metropolitan area.

Agricultural district programs are a unique farmland protection technique because they use a combination of incentives to achieve the same goals as regulatory strategies. Instead of controlling land use, like APZ ordinances, agricultural district laws offer farmers benefits for keeping their land in agriculture. Most agricultural district laws do not require local governments to plan and zone for agriculture, as do comprehensive growth management laws. Rather, they set up an atmosphere where farmers themselves may advocate and become involved with local planning.

In Iowa, for example, the state agricultural district law created county land preservation and use commissions that included farmers, extension agents and representatives from local soil and water conservation districts. The commissions were instructed to inventory agricultural land, natural resources and public infrastructure, and to develop land use plans for unincorporated regions of the counties. The plans were submitted to county boards of supervisors for approval. This provision gave agricultural interests an important role in local planning. In New York, county agricultural and farmland protection boards review and comment on petitions to create agricultural districts. AFPBs may also receive state funds to develop and implement plans to protect farmland and support the agricultural economy. Some county plans have focused on land protection, using techniques such as PACE, while others have emphasized agricultural marketing and the promotion of local farm products.

PROGRAMS TO ENHANCE THE ECONOMIC VIABILITY OF AGRICULTURE AND PROTECT NATURAL RESOURCES

Most farmers say the best way to protect farmland is to keep farming profitable. State and local governments have created a variety of programs to support and enhance the economics of agriculture. Many state agriculture departments sponsor marketing efforts for agricultural products, and promote educational and recreational services provided by farmers. County governments also have developed economic incentive programs. In Napa County, Calif., for example, voters enacted a "winery ordinance" that requires the use of locally grown grapes in wines that are marketed under prestigious Napa County labels. One of New York's AFPBs has produced a video to promote local agriculture; others are working on strategies to improve farm profitability. Cities and towns sponsor farmers' markets that give growers direct access to large numbers of potential customers. They also promote roadside stands and pick-your-own operations by distributing maps and putting up roadside signs that let consumers know where these operations are located. Some jurisdictions are developing public commercial kitchen facilities that will serve as incubators for farm-based food processing businesses.

Massachusetts has a unique program that ties economic assistance for farmers to land protection. The state's Farm Viability Project offers farmers help with management, marketing, product research and development, and pollution prevention in exchange for five- or 10-year

covenants prohibiting development. Farmers are eligible for grants of up to $40,000 to implement new business plans, technologies and marketing strategies.

Environmental problems can result in farmland conversion. If water supplies become scarce or polluted, rationing and regulations may increase the cost of farming. Soil erosion reduces agricultural productivity. Public concern about loss of wildlife habitat has pitted farmers and ranchers against environmentalists. Maintaining the natural resource base is a relatively new issue for state and local farmland protection programs. New Jersey has addressed the issue by offering soil and water conservation grants to farmers who enroll in agricultural districts. New York City is buying agricultural conservation easements on farms in its watershed to protect drinking water quality and supporting a nonprofit organization that helps farmers implement agricultural best management practices. There are negotiations under way in California to provide regulatory relief to farmers and ranchers who make good-faith efforts to create and enhance wildlife habitat on their land. Programs that help farmers address environmental challenges are likely to become even more important as competition for land and resources increases.

State and local governments have developed farmland protection programs using many different combinations of regulatory and incentive-based techniques. Some of these combinations are so successful they have been widely adopted. Table 1.1, p. 40 shows use of farmland protection techniques by state.

COMBINING THE TECHNIQUES BUILDS COMPREHENSIVE FARMLAND PROTECTION PROGRAMS

Differential assessment is an important component of any comprehensive farmland protection program. If state or local governments restrict development of farmland by enacting growth management laws or APZ ordinances, it is only fair that the land be assessed at its agricultural value. And if governments spend money to purchase agricultural conservation easements on farmland, it makes sense to protect the public investment by preventing taxes from rising beyond farmers' ability to pay.

Some communities have built comprehensive farmland protection programs by combining APZ with PACE programs. APZ stabilizes the agricultural land base quickly; PACE permanently protects the land from development and demonstrates to farmers that the community is investing in agriculture. Approximately 40 percent of the land area protected by state and local PACE programs is subject to some form of APZ. APZ can be combined with TDR to achieve many of the same purposes.

PACE and TDR also have been used as incentives to encourage enrollment in agricultural district programs. In Maryland, Pennsylvania and Delaware, farmers who want to apply to the state PACE programs must first enroll their land in an agricultural district. Because PACE programs typically have long waiting lists, this provision helps prevent conversion of land while farmers wait to sell a permanent easement. It also helps protect large blocks of land from development.

For more information on farmland protection, contact the Farmland Information Center at http://www.farmlandinfo.org, or call (413) 586-4593.

TABLE 1.1: FARMLAND PROTECTION ACTIVITIES BY STATE

State	Agricultural Districts	Agricultural Protection Zoning	Circuit Breaker	Differential Assessment	PACE	Right-to-Farm*	TDR
Alabama				▲		▲	
Alaska				▲		▲	
Arizona				▲		▲	
Arkansas				▲		▲	
California	▲	✦		▲	▲✦	▲	✦
Colorado		✦		▲	▲✦	▲	✦
Connecticut				▲	▲✦	▲	✦
Delaware	▲			▲	▲	▲	
Florida		✦		▲	✦	▲	✦
Georgia				▲		▲	
Hawaii		▲		▲		▲	
Idaho		✦		▲		▲	✦
Illinois	▲	✦		▲		▲	
Indiana		✦		▲		▲	
Iowa	▲	✦	▲	▲		▲	
Kansas		✦		▲		▲	
Kentucky	▲			▲	▲	▲	
Louisiana				▲		▲	
Maine				▲	▲	▲	
Maryland	▲✦	✦		▲	▲✦	▲	✦
Massachusetts	▲			▲	▲	▲	✦
Michigan		✦	▲		▲✦	▲	
Minnesota	▲✦	✦		▲		▲	✦
Mississippi				▲		▲	
Missouri				▲		▲	
Montana		✦		▲		▲	✦
Nebraska		✦		▲		▲	
Nevada				▲		▲	
New Hampshire				▲	▲	▲	
New Jersey	▲			▲	▲✦	▲	✦
New Mexico				▲		▲	
New York	▲		▲	▲	✦	▲	✦
North Carolina	▲			▲	✦	▲	
North Dakota		✦		▲		▲	
Ohio	▲	✦		▲		▲	
Oklahoma				▲		▲	
Oregon		✦		▲		▲	
Pennsylvania	▲	✦		▲	▲✦	▲	✦
Rhode Island				▲	▲	▲	
South Carolina				▲		▲	
South Dakota		✦		▲		▲	
Tennessee	▲			▲		▲	
Texas				▲		▲	
Utah	▲	✦		▲		▲	✦
Vermont				▲	▲	▲	✦
Virginia	▲✦	✦		▲	✦	▲	
Washington		✦		▲	✦	▲	✦
West Virginia				▲		▲	
Wisconsin		✦	▲	▲	✦	▲	
Wyoming		✦		▲		▲	
TOTAL	16	24	4	49	20	50	15

▲ State program
✦ Local program
* A number of local jurisdictions also have enacted right-to-farm ordinances. We do not have a complete inventory.

APPENDIX A: EXCERPTS FROM CITY OF DAVIS, CALIFORNIA ORDINANCE 1823, ESTABLISHING A FARMLAND MITIGATION PROGRAM.

Article III. Farmland Preservation

Section 30-200. Purpose and Findings.

(a) The purpose of this chapter and this article is to implement the agricultural land conservation policies contained in the Davis general plan with a program designed to permanently protect agricultural land located within the Davis planning area for agricultural uses.

(b) The City of Davis City Council finds this chapter and this article are necessary for the following reasons: California is losing farmland at a rapid rate; Yolo and Solano county farmland is of exceptional productive quality; loss of agricultural land is consistently a significant impact under CEQA in development projects; the Davis general plan has policies to preserve farmland; the City of Davis is surrounded by farmland; the Yolo and Solano county general plans clearly include policies to preserve farmland; the continuation of agricultural operations preserves the landscape and environmental resources; loss of farmland to development is irreparable and agriculture is an important component of the city's economy; and losing agricultural land will have a cumulatively negative impact on the economy of the City and the counties of Yolo and Solano.

(c) It is the policy of the City of Davis to work cooperatively with Yolo and Solano Counties to preserve agricultural land within the Davis planning area beyond that deemed necessary for development. It is further the policy of the City of Davis to protect and conserve agricultural land, especially in areas presently farmed or having Class 1, 2, 3 or 4 soils.

(d) The City of Davis City Council finds that some urban uses when contiguous to farmland can affect how an agricultural use can be operated which can lead to the conversion of agricultural land to urban use.

(e) The City Council further finds that by requiring conservation easements for land being converted from an agricultural use and by requiring a 150 foot buffer, the City shall be helping to ensure prime farmland remains an agricultural use.

Section 30-210. Definitions.

(a) Advisory committee. The City of Davis Planning Commission shall serve as the advisory committee.

(b) Agricultural land or farmland. Those land areas of the county and/or city specifically classed and zoned as Agricultural Preserve (A-P), Agricultural Exclusive (A-E), or Agricultural General (A-1), as those zones are defined in the Yolo County Zoning Ordinances; those land areas classed and zoned Exclusive Agriculture (A-40), as defined in the Solano County Zoning Ordinance; and those land areas of the City of Davis specifically classed and zoned as Agricultural (A), Agricultural Planned Development or Urban Reserve where the soil of the land contains Class 1, 2, 3 or 4 soils, as defined by the Soil Conservation Service.

(c) Agricultural mitigation land. Agricultural land encumbered by a farmland deed restriction, a farmland conservation easement or such other farmland conservation mechanism acceptable to the City.

(d) Farmland conservation easement. The granting of an easement over agricultural land for the purpose of restricting its use to agricultural land. The interest granted pursuant to a farmland conservation easement is an interest in land which is less than fee simple.

(e) Qualifying entity. A nonprofit public benefit 501(c)(3) corporation operating in Yolo County or Solano County for the purpose of conserving and protecting land in its natural, rural or agricultural condition. The following entities are qualifying entities: Yolo Land Conservation Trust and Solano Farm and Open Space Trust. Other entities may be approved by the City Council from time to time.

Section 20-220. Agricultural Land Mitigation Requirements.

(a) Beginning on November 1, 1995, the City of Davis shall require agricultural mitigation by applicants for zoning changes or any other discretionary entitlement which will change the use of agricultural land to any non-agricultural zone or use.

(b) Agricultural mitigation shall be satisfied by:

(1) Granting a farmland conservation easement, a farmland deed restriction or other farmland conservation mechanism to or for the benefit of the City of Davis and/or a qualifying entity approved by the City of Davis. Mitigation shall only be required for that portion of the land which no longer will be designated agricultural land, including any portion of the land used for park and recreation purposes. One time as many acres of agricultural land shall be protected as was changed to a non-agricultural use in order to mitigate the loss of agricultural land; or

(2) In lieu of conserving land as provided above, agricultural mitigation may be satisfied by the payment of a fee based upon a one to one replacement for a farmland conservation easement or farmland deed restriction established by the City Council by resolution or through an enforceable agreement with the developer. The in lieu fee option must be approved by the City Council. The fee shall be equal to or greater than the value of a previous farmland conservation transaction in the planning area plus the estimated cost of legal appraisal and other costs, including staff time, to acquire property for agricultural mitigation. The in lieu fee, paid to the City, shall be used for farmland mitigation purposes, with priority given to lands with prime agricultural soils and habitat value.

(c) The land included within the 100 foot agricultural buffer required by section 30-50(c) shall not be included in the calculation for the purposes of determining the amount of land that is required for mitigation.

(d) It is the intent of this program to work in a coordinated fashion with the habitat conservation objectives of the Yolo County Habitat Management Program, and, therefore, farmland conservation easement areas may overlap partially or completely with habitat easement areas approved by the State Department of Fish and Game and/or the Yolo County Habitat Management Program. Up to 20% of the farmland conservation easement area may be enhanced for wildlife habitat purposes as per the requirements of the State Department of Fish and Game and/or Yolo County Habitat Management Program; appropriate maintenance, processing or other fees may be required by the habitat program in addition to the requirements set forth herein.

Section 30-230. Comparable Soils and Water Supply.

(a) The agricultural mitigation land shall be comparable in soil quality with the agricultural land whose use is being changed to non-agricultural use.

(b) The agricultural mitigation land shall have adequate water supply to support the historic agricultural use on the land to be converted to nonagricultural use and the water supply on the agricultural mitigation land shall be protected in the farmland conservation easement, the farmland deed restriction or other document evidencing the agricultural mitigation.

Section 30-240. Eligible Lands.

(a) The agricultural mitigation land shall be located within the Davis planning area as shown in the Davis General Plan. The criteria for preferred locations or zones for agricultural mitigation land shall be determined by the Davis City Council after receiving input from the advisory committee, Yolo and Solano counties, Woodland, Dixon, the Davis Open Space Committee, the Natural Resources Commission and Yolo and Solano Farm Bureaus. In making their determination, the following factors shall be considered:

1. The zones shall be compatible with the Davis general plan and the general plans of Yolo and Solano counties.

2. The zones shall include agricultural land similar to the acreage, soil capability and water use sought to be changed to non-agricultural use.

3. The zones shall include comparable soil types to that most likely to be lost due to proposed development.

4. The property is not subject to any easements or physical conditions that would legally or practicably preclude modification of the property's land use to a non-agricultural use.

(b) The advisory committee shall recommend to the City Council acceptance of agricultural mitigation land of twenty (20) acres or more by a qualifying entity and/or the City, except that it may consider accepting smaller parcels if the entire mitigation required for a project is less, or when the agricultural mitigation land is adjacent to larger parcels of agricultural mitigation land already protected. Contiguous parcels shall be preferred.

(c) Land previously encumbered by a conservation easement of any nature or kin is not eligible to qualify as agricultural mitigation land, unless the conservation easement meets the requirements of Section 30-220(f).

Section 30-250. Requirements of Instruments; Duration.

(a) To qualify as an instrument encumbering agricultural mitigation land, all owners of the agricultural mitigation land shall execute the instrument.

(b) The instrument shall be in recordable form and contain an accurate legal description setting forth the description of the agricultural mitigation land.

(c) The instrument shall prohibit any activity which substantially impairs or diminishes the agricultural productivity of the land, as determined by the advisory committee.

(d) The instrument shall protect the existing water rights and retain them with the agricultural mitigation land.

(e) The applicant shall pay an agricultural mitigation fee equal to cover the costs of administering, monitoring and enforcing the instrument in an amount determined by City Council.

(f) The City shall be named a beneficiary under any instrument conveying the interest in the agricultural mitigation land to a qualifying entity.

(g) Interests in agricultural mitigation land shall be held in trust by a qualifying entity and/or the City in perpetuity. Except as provided in subsection (h) of this Section, the qualifying entity or the City shall not sell, lease, or convey any interest in agricultural mitigation land which it shall acquire.

(h) If judicial proceedings find that the public interests described in Section 30-200 of this chapter can no longer reasonable by fulfilled as to an interest acquired, the interest in the agricultural mitigation land may be extinguished through sale and the proceeds shall be used to acquire interests in other agricultural mitigation land in Yolo and Solano Counties, as approved by the City and provided in this Chapter.

(i) If any qualifying entity owning an interest in agricultural mitigation land ceases to exist, the duty to hold, administer, monitor and enforce the interest shall pass to the City of Davis.

Section 30-260. City of Davis Farmland Conservation Program Advisory Committee.

(a) The Davis Planning Commission shall serve as the Davis Farmland Conservation Advisory Committee.

(b) It shall be the duty and responsibility of the Planning Commission to exercise the following powers:

1. To adopt rules of procedure and bylaws governing the operation of the advisory committee and the conduct of its meetings.

2. To recommend the areas where mitigation zones would be preferred in the Davis planning area.

3. To promote conservation of agricultural land in Yolo and Solano counties by offering information and assistance to landowners and others.

4. To recommend tentative approval of mitigation proposals to City Council.

5. To certify that the agricultural mitigation land meets the requirements of this chapter.

6. Any denial from the advisory committee may be appealed to City Council.

(c) The Natural Resources Commission shall monitor all lands and easements acquired under this Chapter and shall review and monitor the implementation of all management and maintenance plans for these lands and easement areas. The Natural Resources Commission shall provide advice to the Planning Commission on the establishment of criteria for the location of agricultural mitigation lands.

(d) All actions of the Planning Commission and the Natural Resources Commission shall be subject to the approval of the Davis City Council.

Section 30-270. Annual Report.

Annually, beginning one year after the adoption of this Chapter, the City Planning Director shall provide to the Advisory Committee an annual report delineating the activities undertaken pursuant to the requirements of this Chapter and an assessment of these activities. The report shall list and report on the status of all lands and easements acquired under this Chapter. The Planning Director shall also report to the Natural Resources Commission.

ENDNOTES

1. State of Michigan, Executive Order No. 1994-4 (Michigan Farmland and Agricultural Development Task Force, February 4, 1994).

2. Amy Jestes Llewellyn, agricultural land use planner, Vermont Department of Agriculture, telephone communication with Robin Sherman, May 1997.

3. Landowners who donate permanent conservation easements or sell them at less than fair market value to a qualified agency or nonprofit conservation organization are eligible for federal income tax benefits. Such "bargain sales" and donations of easements are not considered to be taxable gifts. The value of a qualified conservation easement may be deducted to reduce adjusted gross income by as much as 30 percent in the year the easement is donated or sold, and for five subsequent years, until the full value of the easement is written off. This provision can result in substantial savings of federal and often state income taxes that partially offset the drop in property value caused by recording the easement. Bargain sales of easements allow state and local PACE programs to protect farmland at a significant discount.

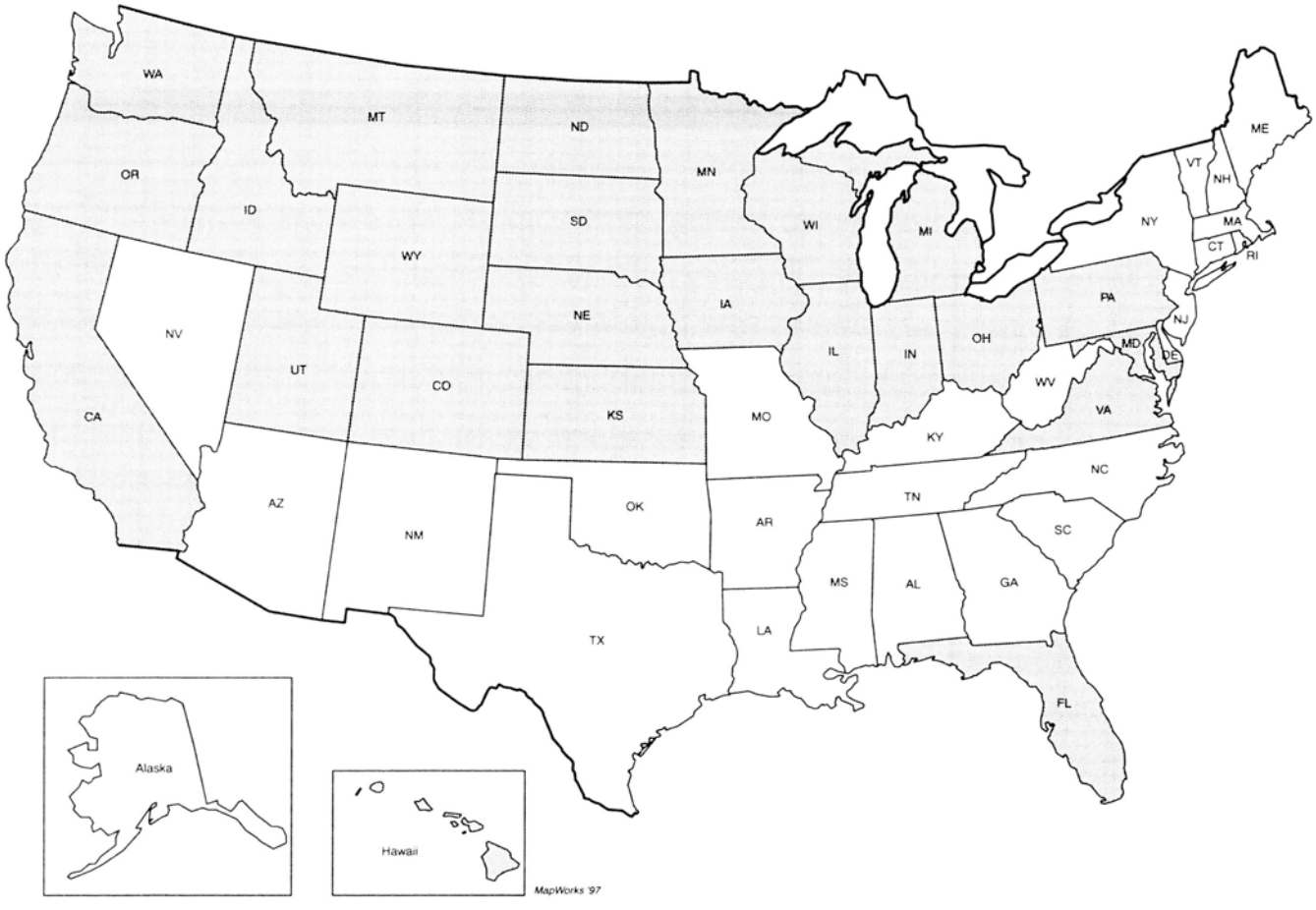
4. Stefan Nagel, *State Conservation Easement Legislation* (Washington, D.C.: National Trust for Historic Preservation, 1995).

LITERATURE CITED

Nagel, Stefan. *State Conservation Easement Legislation.* Washington, D.C.: National Trust for Historic Preservation. 1995.

CHAPTER 2: AGRICULTURAL PROTECTION ZONING

MAP 2.1: STATES WITH LOCAL APZ ORDINANCES, 1997



American Farmland Trust

BRIEF DESCRIPTION OF APZ

Agricultural Protection Zoning refers to county and municipal zoning ordinances that support and protect farming by stabilizing the agricultural land base. APZ designates areas where farming is the desired land use, generally on the basis of soil quality as well as a variety of locational factors. Other land uses are discouraged. APZ ordinances vary in what activities are permitted in agricultural zones. Non-farm related businesses are not usually allowed. The most restrictive regulations prohibit any uses that might be incompatible with commercial farming. The density of residential development is restricted in agricultural zones.* Maximum densities range from one dwelling per 20 acres in the eastern United States to one residence per 640 acres in the West.

APZ ordinances contain provisions that establish procedures for delineating agricultural zones and defining the land unit to which regulations apply. They specify allowable residential densities and permitted uses, and sometimes include site design and review guidelines. Some local ordinances also contain right-to-farm provisions and authorize commercial agricultural activities, such as farm stands, that enhance farm profitability. Occasionally, farmers in an agricultural protection zone are required to prepare farm management plans.

The definition of APZ varies with jurisdiction and by region of the country. A minimum lot size of 20 acres, combined with other restrictions, may be sufficient to reduce development pressures in areas where land is very expensive and farming operations are relatively intensive. Several county APZ ordinances in Maryland permit a maximum density of one unit per 20 acres. In areas where land is less expensive and extensive farming operations such as ranches predominate, much lower densities may be required to prevent fragmentation of the land base. In Wyoming and Colorado, counties are not permitted to control subdivision of lots that are larger than 35 acres. The 35-acre provision has led to the creation of hundreds of 35-acre "ranchettes" in both states, fragmenting ranches into parcels that are too small for successful commercial ranching.

Many towns and counties have agricultural/residential zoning that allows construction of houses on lots of one to five acres. Although farming is permitted by these zoning ordinances, their function is more to limit the pace and density of development than to protect commercial agriculture. In fact, such ordinances often hasten the decline of agriculture by allowing residences to consume far more land than necessary. For the purpose of this chapter, APZ refers to ordinances that allow no more than one house for every 20 acres, support agricultural land uses and significantly restrict non-farm land uses.

*In practice, the specific areas designated by APZ are generally called agricultural districts. In the context of farmland protection, however, these zoning districts, which are imposed by local ordinance, are easily confused with voluntary agricultural districts created by farmers under statutes in 16 states. In states that have agricultural district laws, agricultural land may be protected by a town or county zoning ordinance, an agricultural district, both or neither. To avoid confusion, we refer to the mandatory agricultural areas as agricultural protection zones, and the voluntary areas as agricultural districts.

FUNCTIONS AND PURPOSES OF APZ

APZ helps towns and counties reserve their most productive soils for agriculture. It stabilizes the agricultural land base by keeping large tracts of land relatively free of non-farm development, thus reducing conflicts between farmers and their non-farming neighbors. Communities also use APZ to conserve a "critical mass" of agricultural land, enough to keep individual farms from becoming isolated islands in a sea of residential neighborhoods. Maintaining a critical mass of agricultural land and farms allows the retention of an agricultural infrastructure and support services, such as equipment dealers and repair facilities, feed mills, fertilizer and pesticide suppliers, veterinarians, spraying and seeding contractors, food processors and specialized financial services, all of which need their farm customers to stay in business.

APZ can also limit land speculation, which drives up the fair market value of farm and ranch land. By restricting the development potential of large properties, APZ is intended to keep land affordable to farmers. A strong ordinance can demonstrate to farmers that the town or county sees agriculture as a long-term, economically viable activity, instead of an interim land use that will disappear when the land is ripe for development.

Finally, APZ helps promote orderly growth by preventing sprawl into rural areas, and benefits farmers and non-farmers alike by protecting scenic landscapes and maintaining open space.

BENEFITS AND DRAWBACKS OF APZ

BENEFITS

- APZ is an inexpensive way to protect large areas of agricultural land.
- By separating farms from non-agricultural land uses, APZ reduces the likelihood of conflicts between farmers and non-farming neighbors.
- APZ helps prevent suburban sprawl and reduces infrastructure costs.
- Compared to PACE and TDR programs, APZ can be implemented relatively quickly.
- APZ is easy to explain to the public because most landowners are familiar with zoning.
- APZ is flexible. If economic conditions change, the zoning can be modified as necessary.

DRAWBACKS

- APZ is not permanent. Rezoning or comprehensive upzoning can open up large areas of agricultural land for development.
- APZ generally reduces land values, which decreases farmers' equity in land. For this reason, farmers sometimes oppose APZ, making it difficult to enact.
- APZ may be difficult to monitor and enforce on a day-to-day basis.
- County APZ ordinances do not protect agricultural land against annexation by municipalities.

BRIEF HISTORY

TRENDS IN APZ

The courts first validated zoning as a legitimate exercise of police power in the 1920s[1], giving local governments broad authority to regulate local land use. Rural counties in California, Pennsylvania and Washington began using zoning to protect agricultural land from development during the mid-1970s[2]. In 1981, the National Agricultural Lands Study reported 270 counties with agricultural zoning.

As part of the research for this publication, American Farmland Trust and Coughlin/Keene Associates did an informal survey of county APZ ordinances in several states. Our research found nearly 700 jurisdictions in 24 states with some form of APZ. Wisconsin counties and towns account for approximately 62 percent of the total number of APZ ordinances found; Pennsylvania jurisdictions account for an additional 13 percent. Given the limited response to our survey, the results are probably a significant underestimation of the total number of county APZ ordinances nationwide. Some cities and towns also have agricultural zoning, but we did not make a systematic attempt to obtain information on municipal zoning ordinances.

During the past decade, advocates of private property rights have been challenging government authority to regulate land use. The property rights movement charges that local government attempts to limit development through zoning constitute an unconstitutional "taking" of private property without just compensation. Recent Supreme Court decisions have placed limits on local government's power to control land use through zoning, but APZ ordinances have been consistently upheld against takings claims. In general, zoning is not considered to be a taking as long as it permits some economic use of the land, such as agriculture. This rule underscores the need for farmland protection programs that enhance the economic viability of farming.

Between 1991 and 1995, 20 state legislatures enacted laws designed to limit government takings of private property.** Eleven states have laws that require the state and/or local governments to assess the impact of a proposed statute or ordinance on private property values before enactment. Four statutes allow landowners to seek compensation from state and local governments when their property values are reduced by regulations. The compensation provisions are triggered when property values are reduced by a specified percentage, ranging from 20 percent in Louisiana, to 25 percent in Texas, to 40 percent in Mississippi. Florida's takings compensation bill does not specify a percentage[3].

The impact of state takings laws on APZ and other farmland protection strategies used by state and local governments is unclear, but it is significant that few states with APZ have passed such laws. The Washington legislature enacted a state takings assessment law in 1991, but Washington voters rejected a takings compensation bill by a 60 percent to 40 percent margin in a 1995 ballot referendum. Arizona voters repealed a 1992 takings assessment law by ballot referendum in 1994[4].

**States with takings laws include Arizona, Delaware, Florida, Idaho, Indiana, Kansas, Louisiana, Maine, Michigan, Mississippi, Missouri, Montana, North Dakota, Tennessee, Texas, Utah, Virginia, Washington, West Virginia and Wyoming.

ACCOMPLISHMENTS

Attitudes toward agricultural protection zoning vary significantly across the country. In some communities, APZ is seen as the centerpiece of a program for maintaining agriculture and protecting valuable farmland. In others, it is opposed on the basis that it infringes on property rights. APZ is most widespread in Pennsylvania, Maryland, parts of the Midwest and along the Pacific Coast.

In Oregon, all 36 counties have enacted exclusive agricultural zoning ordinances as part of the state's comprehensive growth management program. More than 16 million acres lie within Oregon's APZ zones, accounting for about half of the state's privately owned land. Between 1987 and 1994, approximately 22,000 acres were removed from agricultural zones, representing a conversion rate of just 3,100 acres per year[5].

One of the four zones created by Hawaii's statewide zoning law is specifically devoted to agriculture. The zone includes more than 2 million acres, but only half a million acres are actually farmed. Recreational uses, such as golf courses, are common in the agricultural zone[6].

In Wisconsin, farms must be located within an agricultural zone to be eligible for the state's "circuit-breaker" income tax credit program. This provision is at least partly responsible for the adoption of APZ in more than 425 Wisconsin jurisdictions.

Ninety-two Pennsylvania municipalities have adopted APZ ordinances, protecting a total of 725,000 acres. Lancaster County alone accounts for more than one-third of the townships and land area protected by APZ in the state. A study of changes in Lancaster County's APZ zones between 1981 and 1991 found that townships added nearly four times more land to APZ zones than was removed through rezoning during the period[7].

Counties in California, Colorado, Florida, Iowa, Minnesota, Maryland, Virginia, Washington and Wyoming have also enacted APZ to protect some of their most important agricultural land.

CHALLENGES

Many states have no agricultural protection zoning. In Texas, counties lack the power to enact zoning ordinances. No New England states have APZ. Zoning and other land use regulation is extremely unpopular in many parts of the West and South, and few jurisdictions in these regions have enacted APZ ordinances.

APZ is only as good as the political will to maintain and enforce it. When demand for new homes is high and the price of open land in residentially zoned areas increases, the pressure to allow more development in agricultural zones may also grow. Some of this pressure takes the form of requests for rezoning land from agricultural to residential. Alternatively, residents may advocate for comprehensive upzoning—a decrease in the minimum lot size—across the entire agricultural protection zone.

McHenry County, Ill., located north and west of Chicago, is a stark reminder of the impermanence of zoning. Concerned about development pressure, the county enacted a highly acclaimed APZ ordinance imposing a 160-acre minimum lot size in 1979. The pace of development intensified during the late 1980s, and, in 1994, Motorola, Inc. announced plans to build a new manufacturing plant on farmland just outside the town of Harvard. The same year, the county planning department recommended that the minimum lot size be decreased from 160 acres to 40 acres. Principal Planner James Hogue justified the change on the basis of a survey that found the average rural parcel size in the county was already approximately 40 acres. The McHenry County Board approved the upzoning in spite of opposition from the county farm bureau.

Municipal annexation can be an even more serious challenge to APZ. County governments can target agricultural land for protection and apply APZ to prevent development, but in most states, counties have little recourse if municipalities annex this land for urban use.

To address the impermanence of zoning, citizens in Napa County, Calif., devised a unique strategy to prevent agricultural land conversion. In 1990, county residents approved a ballot initiative that took authority over land use issues away from the county's Board of Supervisors. Measure J provided that all elements of the county's General Plan designed to protect agricultural, watershed and open space lands would remain permanent until 2020. Changes can be made only by popular vote. Developers and farmers challenged the initiative, but Measure J was upheld by the California Supreme Court[8]. Since the decision, the city of Ventura has passed a similar measure, but efforts to do so have failed in Stanislaus and Monterey Counties.

ISSUES TO ADDRESS IN DEVELOPING AN APZ ORDINANCE

ISSUES AND OPTIONS

The success of APZ ordinances depends on their design and enforcement as well as the degree of local support for maintaining the zoning over time. Key issues include:

- Is APZ supported by a comprehensive plan and local policies?
- Is the purpose of the ordinance clearly stated, and do the regulations correspond to the stated goal?
- What land is included in the APZ zone? Is it the best farmland?
- Does the ordinance adequately restrict non-farm development and encourage commercial farming?
    - Which non-farm uses are prohibited? Are agriculturally related businesses, such as processing, marketing and sales of farm equipment and services, permitted?
    - How much non-farm development is allowed in agricultural zones?
- Does the ordinance prevent or minimize conflicts between farmers and non-farmers?

- Does the ordinance provide clear criteria for rezoning that protect productive agricultural land?

- How will the ordinance be enforced?

DESCRIPTIVE ANALYSIS OF APZ ORDINANCES

APZ and the comprehensive plan

APZ is likely to be most effective, and defensible against legal challenges, when it is an integrated element of a comprehensive plan. A comprehensive plan is the community's vision of the future. It typically sets aside areas of the jurisdiction for a variety of different land uses, including agriculture and forestry, as well as residential, commercial, industrial and recreational uses. Comprehensive plans often state local government policies, objectives and decision guidelines, and make provisions for the orderly development of public services. A plan provides a rationale for zoning and lets landowners know what types of development are likely to be acceptable on their property.

The comprehensive plan developed by Story County, Iowa, refers to local data and assumptions that support the county's APZ ordinance:

> Certain findings and assumptions have been made from which this Plan has been developed. First, growth trends and projections indicate that the county will continue to face a limited amount of pressure for new development... Second, it is recognized that a certain amount of growth has previously occurred in areas that would be identified today as unsuitable for development...While existing development patterns cannot be altered, expansion of certain developed areas can be discouraged...Third, it has been assumed that agriculture will continue to be a major factor in the land use and economy of the county, and that federal, state and local policies for the preservation of high quality agricultural land will remain[9].

The comprehensive plan may also outline local government policies designed to protect agricultural land, encourage commercial farming and promote efficient and orderly urban growth. The Comprehensive Plan for Lancaster County, Pa., has a policy goal of preserving agricultural areas for agricultural use. The plan lists a set of objectives that are designed to guide local government decisions:

1. Identify and permanently preserve agricultural land for agricultural use.
2. Protect agricultural uses from non-farm activities that interfere with or prevent normal farm practices.
3. Protect agricultural regions that transcend individual municipal boundaries.
4. Permit a wide range of farm-based businesses.
5. Protect agricultural areas from incompatible capital projects.
6. Protect forested land and other open space resources within agricultural areas.
7. Support agricultural education programs[10].

Several of the objectives call for APZ to prohibit residential subdivisions, limit non-farm land uses and permit farm-based businesses. Another section of the county's comprehensive plan calls for the establishment of urban growth boundaries to separate agricultural areas from areas targeted for urban development.

Comprehensive Planning and APZ in Solano County, California:

In Solano County, Calif., a 1980 comprehensive plan defined two new categories of farmland. Essential agricultural land was defined as productive farmland that has been identified by the local community as necessary to ensure a healthy agricultural economy. Criteria used to make this determination included soil capability, productivity level, parcel size and the overall size of the farming area relative to the ability of agricultural activities to support one another and to form a buffer against urban encroachment. Non-essential agricultural land was defined as property to be kept in farming until it is needed for other purposes.

The county's zoning ordinance, as amended in 1980, applied these two categories to the two existing types of farmland in the county: extensive farmland is non-irrigated land, used primarily for grazing, while intensive farmland is irrigated land with very fertile soils. For extensive, non-essential agricultural land, the ordinance imposed a minimum lot size of 20 acres. The minimum lot size is 160 acres on extensive, essential agricultural land, and lot sizes on intensive, essential land range from 40 to 80 acres, depending on the land's productivity.

Purpose of an APZ ordinance

Including a clear statement of purpose in the text of the APZ ordinance reinforces the vision and policy statements contained in the comprehensive plan. A statement of purpose puts landowners on notice that agriculture is the primary activity in the zone, and that other uses will be permitted only to the extent that they do not interfere with farming. It can also help guide official decisions on permit requests and petitions for changes in zoning. The APZ ordinance for Northern Iowa's Black Hawk County is a good example. It states:

> It shall be noted that it is the policy of Black Hawk County, Iowa, rich in fertile productive soils, to maintain this non-renewable resource for future generations to employ in the production of food and fiber; therefore, such lands shall be preserved as "A" Agricultural District, unless there are extenuating circumstances.

Farmland protection is stated as a goal of the ordinance and is reinforced by a reference to relevant sections of state law:

> The "A" Agricultural District is intended and designed to serve the agricultural community and protect agricultural land from encroachment of urban land use. Furthermore, in accordance with Chapters 335 and 352, Code of Iowa...it is the intent to preserve the availability of agricultural land and to encourage efficient urban development patterns. This district is not intended to be used for non-farm residential subdivisions...

If the purpose of an agricultural zone is to protect farming, local governments should ensure that the regulations imposed by the ordinance are well-tailored to the specific type of agriculture practiced in the community. In metropolitan areas where market gardens, orchards, specialized livestock and nursery operations are the dominant form of agriculture, a maximum density of one house per 20 acres may be adequate to protect commercial farms from development pressures. In ranching areas of the West, a maximum density of several hundred acres may be needed to prevent subdivision of the large blocks of land needed for rangeland.

Determining what farmland to include in the agricultural zone

One of the first steps in developing an APZ ordinance is deciding what land to include in the agricultural protection zone. The most common factors used in delineating agricultural zones are soil productivity and existing land uses. San Mateo County, Calif., includes two primary categories of farmland in its agricultural zone.

Prime Agricultural Land is defined as:

1. All land that qualifies for rating as Class I or Class II in the U.S.D.A. Natural Resources Conservation Service Land Use Compatibility Classification, as well as all Class III lands capable of growing artichokes or Brussels sprouts.

2. All land that qualifies for a rating between 80 and 100 in the Storie Index Rating.***

3. Land that supports livestock use for the production of food and fiber, and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the U.S. Department of Agriculture.

4. Land planted with fruit- or nut-bearing trees, vines or bushes, or crops that have a non-bearing period on an annual basis from the production of unprocessed agricultural plant production not less than $200 per acre (as adjusted for inflation).

5. Land that has returned from the production of an unprocessed agricultural plant product on an annual value that is not less than $200 per acre within three of the five previous years (as adjusted for inflation).

Lands Suitable for Agriculture are defined as "[l]and other than Prime Agricultural Land on which existing or potential agricultural use is feasible, including dry farming, animal grazing and timber harvesting[11]."

In Iowa, Corn Suitability Ratings are frequently used to designate farmland for protection. CSR is a numerical system for measuring the productivity of farmland. Soils are rated according to their crop production capacity, and each soil mapping unit is assigned a CSR between 5 and 100. The ratings make it possible to compare the productivity of different parcels of land[12]. The Scott County, Iowa, Board of Supervisors established a policy that quarter-sections of land with a CSR of 68 or greater should be protected from development[13].

***The Storie Index Rating is a numerical evaluation system to rate the sustainability of soils for agricultural production.

CSR measures the productivity of farmland, but not its suitability for commercial agriculture. Land Evaluation and Site Assessment is another tool that communities can use to delineate agricultural protection zones. LESA systems measure soil quality as well as individual site characteristics such as farm size, agricultural improvements, proximity to development and ecological value. A 1991 survey found that approximately 50 jurisdictions around the country use LESA to help determine what land to include in agricultural zones[14].

Clinton County, in central Indiana, uses a two-step process to determine which agricultural land may be developed for non-agricultural uses. Virtually all the unincorporated land in the county is designated as an agricultural zone. The county uses a performance-based approach to determine where residential development will be permitted. In areas that are located within one mile of incorporated communities, the ordinance allows for rural non-farm residences on lots of one acre or more if:

A) The lots are located in a wooded area where, in the judgment of the zoning administrator, there is evidence that the parcel has always existed as a non-tillable area, is not classified as wetland on the national wetlands inventory maps and can meet private septic requirements, or

B) Twenty-five percent of the soils in a 1/8-mile radius of the site are rated as poor for agriculture (on a special county scale), and there are existing residences or approved lots within 2 miles of the proposed lot.

In areas that are located more than one mile from corporate limits, the county zoning board of appeals considers all requests for rural non-farm residences. The board will not approve lots in rural areas unless it finds that:

A) The location of the lot, the proximity to other rural non-farm housing, the configuration of the parent tract or the location of creeks, ditches, and other natural features make use of farm equipment, or use of the property as part of a farm, difficult;

B) Locating a non-farm dwelling on the proposed lot will not require changes in roads or bridges; and

C) Locating a non-farm dwelling on the proposed lot will not interfere with current agricultural practices in the area and will not substantially restrict the expansion of confined feeding operations and other agricultural practices.

According to Wayne Williams, Clinton County extension agent, the zoning board of appeals will not, as a rule, approve the creation of non-farm lots on productive soils unless the area is already residential in character. For poor soils near developed areas, the county uses a sliding scale to determine the maximum allowable residential density (see Table 2.1, p. 60). Farm dwellings may be built on parcels that are at least 20 acres.

Deciding which non-farm development to exclude

Which uses should be permitted?

Exclusive agricultural zoning prohibits all non-farm uses, which are encouraged or accommodated in other zones. Residential development is generally limited to the construction of housing for farm owners and their employees and relatives who are directly involved in the farming operation. Exclusive agricultural zones are common in Oregon and Wisconsin. Whitman and Spokane Counties in eastern Washington also have exclusive agricultural zoning. *Non-exclusive agricultural zoning* permits non-farm uses that can coexist with commercial agriculture.

Some communities have more than one agricultural zone, allowing different mixes of uses in different areas of the county. Spokane County has a general agricultural zone and a rural settlement zone as well as an exclusive agricultural zone. The exclusive agricultural zone prohibits virtually all uses and activities that are not necessary for commercial farming, including agriculturally related recreation such as horse boarding and training facilities and riding stables. Residential, industrial and non-farm commercial uses are prohibited, as are most public facilities, such as hospitals, day care centers, libraries and landfills. The general agricultural zone, in contrast, allows commercial farming activities and hobby farms as well as limited residential development and some public services such as churches, day care centers and parks. The rural settlement zone is designed to accommodate most of the demand for non-farm rural residences; commercial farming activities are prohibited. For a comparison of the uses permitted in Spokane County's exclusive and general agriculture zones and the rural settlement zone, see Appendix B, p. 72.

In deciding which agricultural activities to permit, communities must strike a balance between supporting agricultural operations and preventing the conversion of agricultural land to commercial use. In Spokane County, farm stands, feed mills, grain elevators and commercial greenhouses are permitted by right in the exclusive agricultural zone; agricultural processing plants and warehouses, farm machinery sales and repair shops, and wineries require a special permit.

Scott County, Iowa, allows seed and feed dealerships in its APZ zone, provided that "there is no evidence of a showroom or other commercial activity." Seasonal roadside stands that sell products grown on the property are also permitted. Commercial feedlots and public stables are allowed by special permit. San Mateo County, Calif., allows agricultural processing, storage and shipping facilities on prime agricultural land, but individual facilities must use as little prime land as possible, and in no instance more than three acres.

What density of development should be permitted?

The most distinguishing mark of non-exclusive APZ ordinances are the strong limitations they place on the number of dwellings that can be built in the agricultural zone. APZ ordinances use several different approaches to limiting density.

Large Minimum Lot Size APZ. This form of APZ ordinance sets a large minimum lot size for each residence. DeKalb County, Ill., has a 40-acre minimum lot size; several Iowa counties allow one unit per 35 acres in agricultural zones. In the Agricultural Watershed Zone of Napa County, Calif., minimum lot size is 160 acres. Large-lot zoning, even at this scale, may still fail to prevent subdivision of farms into parcels that are too small to be operated economically. Large-lot zoning is also often criticized for being exclusive and limiting affordable housing, because very large lots are expensive.

Area-Based Allowance APZ. Other ordinances use a formula to establish the permitted number of dwelling units per parcel. The goal of this strategy is to direct development to smaller parcels of land, leaving large tracts intact for agricultural use. The number of dwellings permitted by these ordinances depends on the size of the property in question. Instead of requiring a certain number of acres per dwelling, area-based allowance APZ ordinances specify the number of dwellings per acre, regardless of lot size. Some jurisdictions encourage or require a maximum lot size, to minimize conversion of agricultural land. The ordinance may also require that dwellings be sited on less fertile soils or in locations where they would cause the least interference with farming operations.

There are two forms of area-based allowance, fixed area-based allowance and sliding scale area-based allowance.

Fixed area-based allowance APZ ordinances allow one dwelling for a specified number of acres. The model APZ ordinance for Lancaster County, Pa., for example, provides for one non-farm lot for every 50 acres. A non-farm lot subdivided from a parent tract must be at least one acre, but no more than two.

Quarter-quarter zoning is a form of fixed area-based allowance APZ found predominantly in the Midwest and Plains states. Typically, one residence is allowed per each quarter of a 160-acre quarter section. A quarter-quarter section may be less than 40 acres due to roads and other improvements. Quarter-quarter zoning is common in Minnesota.

Sliding scale area-based allowance APZ ordinances also base the number of dwellings on acreage owned, but they require more acreage per dwelling for larger tracts than for smaller ones. This concentrates lots on smaller, less commercially viable parcels of land. Clinton County, Ind., uses a sliding scale to determine how many residences should be permitted on poor soils; residential development is generally prohibited on fertile soils (see Table 2.1, p. 60).

Both types of area-based allowance APZ ordinances generally require that properties be restricted with a conservation easement to prevent further development once the maximum density has been achieved. This provision is very important, because in effect it makes the zoning permanent.

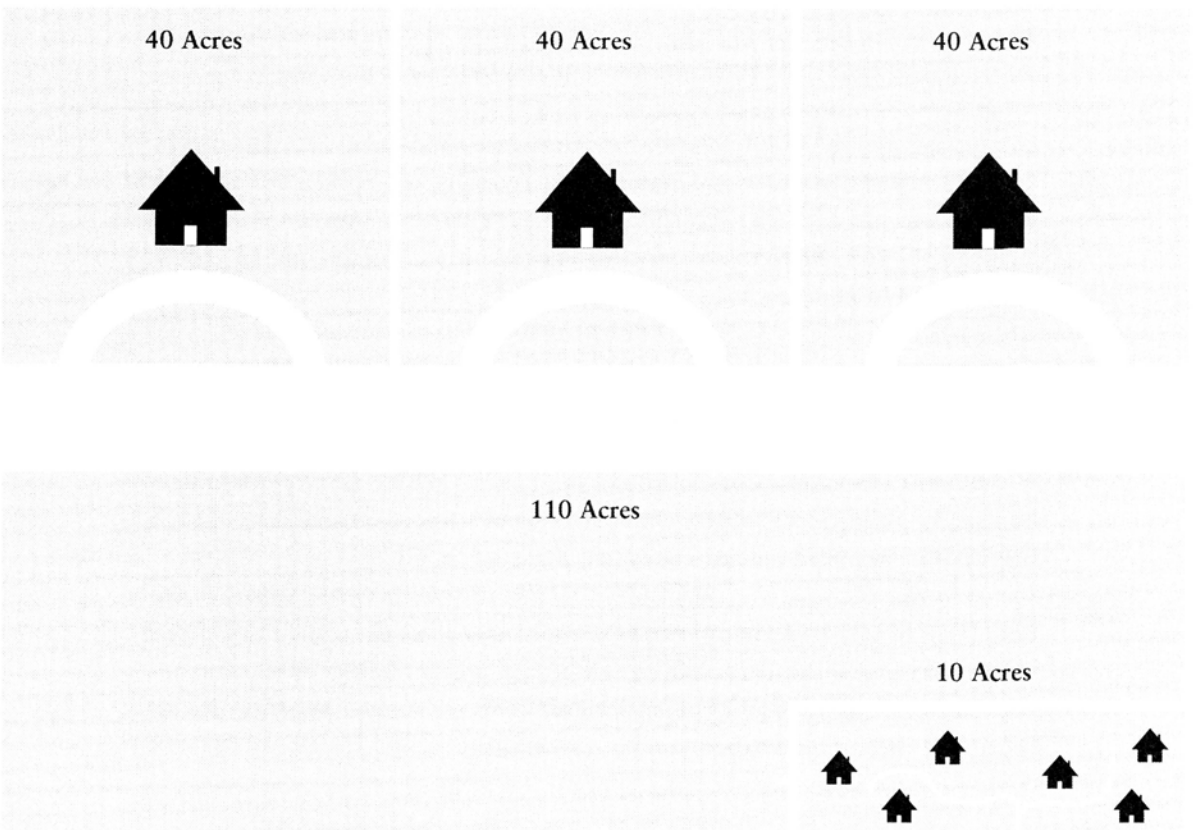
TABLE 2.1: MAXIMUM DENSITY, RURAL NON-FARM RESIDENCES, CLINTON COUNTY, INDIANA

Size of parent tract of land in acres	Maximum number of non-farm lots Including existing dwellings
0 - 1.99	2
2 - 10.99	3
11 - 40.99	4
41 - 80.99	5
81 - 120.99	6
121 or more	1 additional lot per each 40 acres

The rationale behind the sliding scale is that higher densities should be allowed on smaller tracts, because they are difficult to farm and may have effectively passed out of agriculture into the residential land market. Higher densities help satisfy the legal requirement that municipalities permit some economically beneficial use of land where farming is not profitable.

Figure 2.1 shows how a 120-acre tract might be developed, using (a) a large minimum lot size APZ ordinance or (b) the sliding scale allowance APZ ordinance described in Table 2.1, with a one-acre maximum lot size.

FIGURE 2.1: SLIDING SCALE APZ ORDINANCES PROTECT FARMLAND



Exclusive Agricultural Use APZ. Some exclusive APZ zones do not specify a minimum lot size. Since non-farm residential development is prohibited, the construction of farm housing is governed by the needs of farming families. The exclusive APZ ordinance in Spokane, Wash., specifies that the minimum lot size for residential use is 17,000 square feet (approximately half an acre), but that lot sizes should be governed by county health standards designed to ensure adequate water supplies and safe sewage disposal. Jackson County, Colo., has one of the country's most restrictive APZ ordinances: A landowner must own 640 acres to build a ranch house, and he or she must prove that they will be operating a commercial ranch before the county will issue a building permit.

Percent of Land APZ. One other form of APZ was found in East Hopewell Township, Pa. Instead of specifying the number of dwellings that can be built on a tract, it specifies the percent of tract area that can be devoted to development. East Hopewell's ordinance limits development to 10 percent of the total tract area, and sets a minimum lot size of one acre, but ordinances using other allocation schemes could be developed[15].

Other APZ Provisions that Restrict Non-Farm Development

Restrict subdivision. This provision is intended to prevent the creation of parcels that are too small to be farmed by themselves. Creation of such small tracts often moves land out of farming into the exurban, estate or vacation home market. In some Pennsylvania jurisdictions, the minimum parcel size that can be created by subdivision is designated as a "farm core," and includes contiguous tracts that encompass the farmstead, barns, equipment sheds and other agricultural facilities in addition to farm fields. The farm core is the part of the farm that is most efficient to operate and has the most permanence. Therefore, it provides a good criterion for defining the size below which it is undesirable to divide land.

Black Hawk County, Iowa, allows subdivisions of small lots in its agricultural zone under very limited circumstances. Single family dwellings are permitted in the agricultural zone, provided that the owner/occupant is actively engaged in the farming operation and is a member of the farm owner's immediate family. Only one lot that is a minimum of 1.5 acres but less than three acres may be separated from a farm, and at least 35 acres must be left after the subdivision.

San Mateo County, Calif., prohibits the subdivision of prime agricultural land that covers an entire parcel. Prime agricultural land within a parcel may not be divided unless it can be shown that the agricultural productivity of all resulting parcels will not be diminished, and building sites may not be located on prime parcels.

Maximum size of building lot. Most zoning ordinances specify a minimum lot size for construction of a residence. Minimum lot sizes are based on the area needed for an on-site sewage system and more generally on the community's desire to avoid high-density development. With APZ, however, the goal is to avoid taking fertile land out of production. Therefore, most area-based APZ ordinances specify a *maximum* permissible building lot size as well as a minimum.

Site design review guidelines and criteria. Site design guidelines are intended to ensure that non-farm construction is directed to locations that are least disruptive to the continuation of agriculture. They may also contain provisions to preserve the integrity of the rural landscape. Such guidelines should direct development to the least fertile soils on the property. They might also prevent construction on ridges or in the middle of fields, and encourage the location of new houses in clusters or immediately adjacent to existing development.

Land Preservation Subdivision, Routt County, Colorado

Colorado state law allows property owners to subdivide their land into tracts of 35 acres or more by right. Developers and landowners who wish to build homes on smaller tracts often have to go through a lengthy local subdivision review process. The state provision has thus spawned hundreds of 35-acre residential "ranchette" communities across Colorado, resulting in fragmentation of ranchland and loss of open space.

To give developers and ranchland owners a better alternative, Routt County, in northwestern Colorado, created a "Land Preservation Subdivision" option in 1995. The LPS is a flexible, voluntary process driven by county objectives and a set of design standards and guidelines, rather than set minimum or maximum lot sizes. The objectives of the process are to protect agricultural lands, wildlife habitat, open space, scenic views and water resources, as well as to ensure the development of appropriate infrastructure and minimize natural hazards. Design guidelines to protect agricultural land include provisions that locate homes away from commercial ranching operations and keep irrigated lands intact, and that make residential landowners responsible for fencing and weed control on their properties. Two projects using the LPS have been approved; a third LPS project is expected to protect between 150 and 200 acres of prime hay meadow[16].

Minimizing conflict between farmers and other rural residents

Few zoning ordinances are completely successful in preventing non-farmers from buying land in areas designated for agriculture. Many people think of farms as serene and bucolic, the perfect place to build a country home. New rural residents are often distressed to discover that farming is an industry, and that farmers use chemicals and heavy equipment. Farms generate noise and dust, and pesticides and herbicides may drift beyond farm borders. Livestock generate smells and flies. Tractors and other equipment slow down traffic on roads. Complaints from new neighbors can be a serious problem for farmers, especially if they result in lawsuits. APZ ordinances often contain provisions to limit such conflicts.

Agricultural Nuisance Notice

APZ ordinances may require that buyers of land in an agricultural zone be notified that commercial agriculture is the primary economic activity in the area, and that they may experience inconvenience or discomfort arising from accepted agricultural practices. In some

cases, the notice may be recorded on the deeds to new homes. Clinton County, Ind., includes the following notice with the deeds to non-farm residential lots in its agricultural zone:

> In accepting this deed, grantees do hereby acknowledge that the surrounding land is agriculture (sic) in usage and subject to intense agricultural practices; and grantees, and their heirs, assigns, and successors in interest, are precluded from complaining, seeking damages and/or attempting to enjoin the use of the property (land) for confined feeding, grain handling operations, or use of manure, fertilizers or other agricultural chemicals because of nuisances which may result from such practices as long as generally accepted farming practices are followed. It is further recognized that farming operations may include disruptive noises and light for 24 hours per day during the crop planting and harvesting seasons. This condition and agreement shall run with the land.

Such disclaimers may help ensure that people who purchase houses in the zone will put up with the inconveniences caused by production agriculture. They also help farmers build a legal defense if they are sued for creating a nuisance.

Fremont County, Idaho, goes one step further. Its Comprehensive Plan and Development Code require that people who purchase land in an agricultural area sign a "natural resource easement" which explicitly acknowledges their neighbors' right to farm. This provision is designed to prevent residents from bringing nuisance suits against farmers. A sample natural resource easement is included in Appendix C, p. 76.

Setbacks on Adjacent Residentially Zoned Land

A required setback prevents new houses from being built very close to farming operations, thus protecting new residents from spray drift and reducing the probability of complaints. Wide setbacks of 500 feet or more may be required from intensive livestock operations such as feedlots and poultry barns. The zoning ordinance in Clinton County, Ind., sets very specific setback requirements between homes and confined animal feeding operations or grain handing facilities (see Table 2.2, p. 64).

New confined feeding and grain handling operations must comply with setbacks in column II from existing residences (except those of the owner and farm workers), businesses, public buildings and recreation areas, churches and residential zone boundary lines. Setbacks in column III are required from the boundaries of incorporated cities and towns and public school facilities. New dwellings, businesses and public facilities must comply with the setbacks in column II from existing feedlots and grain operations. There are additional standards governing the expansion of confined feeding and grain processing operations.

TABLE 2.2: REQUIRED SETBACKS BETWEEN INTENSIVE AGRICULTURAL OPERATIONS AND NON-FARM USES, CLINTON COUNTY, INDIANA

Type/number of livestock	Required setback (feet)	Required setback (feet)
Cattle (confined):		
1 - 3	0	0
3 - 49	660	2,640
50 or more	1,320	5,280
Hogs, sheep, goats, other confined livestock:		
1 - 10	0	0
10 - 100	660	2,640
100 or more	1,320	5,280
Poultry (confined):		
Fewer than 200	0	0
200 - 1,000	660	2,640
1,000 or more	1,320	5,280
More than 3 cattle, 10 hogs, sheep or goats, 20 poultry per acre, open grazing operations:	660	660
Grain handling facilities:		
Fewer than 20,000 bushels	0	0
20,000 bushels or more	660	1,320

Criteria for rezoning

One of the most important measures of the effectiveness of an APZ ordinance is how difficult it is to rezone land from agriculture to other uses. In many jurisdictions, rezoning may require amendments to the comprehensive plan.

In Scott County, Iowa, an application for rezoning from the agricultural protection zone results in an in-depth study of the soils on the relevant tract and the surrounding quarter-section. The planning and zoning commission and the board of supervisors consider soil fertility as measured by the corn suitability rating, county land use policies and public comments when deciding whether to rezone agricultural land. Rezoning applications require a petition signed by the owners of at least 50 percent of the land within the tract to be rezoned.

Black Hawk County, Iowa, policies state that "only agricultural uses or those uses incidental to agriculture shall be allowed on prime land. Prime land...is defined as soil with a Corn Suitability Rating of 50 or above." The County generally denies requests for rezoning of land with a CSR of 50 or higher. DeKalb County, Ill., uses its LESA system to evaluate rezoning requests. All rezoning applications require a report from the local office of the Natural Resources Conservation Service.

Owners of agricultural land in the Spokane County, Wash., exclusive agricultural zone must meet three criteria for rezoning. First, the applicant must present "clear and convincing evidence that the property sought to be rezoned is better suited for a use other than agricultural use." Second, the parcel must meet a productivity test. The ordinance states that "no parcel of land shall be rezoned if 25 percent or more of its soils are USDA-SCS Class I or II, or if 50 percent of its soils are USDA Class I, II or III, unless the tract is steep, heavily wooded, or has physical barriers which would interfere with farming." Third, applicants must show that rezoning would not establish a use that would conflict with existing agricultural uses. Finally, if the application for rezoning is approved, an agricultural nuisance disclaimer must be attached to the deed of the property.

Marathon County, Wis., bases rezoning decisions on a series of findings. Factors considered include the productivity of the land and its suitability for development, availability and cost of public facilities to serve the new development, the potential for conflict with agricultural uses, the availability of alternative locations, and whether the proposed development will be sited to minimize the amount of farmland taken out of production.

Municipal annexation may be a more serious threat to agriculturally zoned land in county unincorporated areas than rezoning. Unfortunately, under most state laws, counties and landowners have little recourse if a municipality chooses to annex important agricultural land. California law provides an exception. A 1963 law created the Local Agency Formation Commission (LAFCO). LAFCO is a state agency located in every California county with the exception of San Francisco. Each county LAFCO is composed of local representatives, including county supervisors and city staff, as well as one member representing the general public. The commissions are designed to contain urban growth to areas in and around cities, and have the authority to review annexation petitions. According to state regulations, LAFCO decisions on petitions for annexation of agricultural land should be guided by two policies:

Wilbur Moeller, a Scott County, Iowa, crop farmer and planning commission member, states the county's policy succinctly. "If you want to rezone an area out in the middle of nowhere, you can forget it," he maintains, explaining that the planning commission expects development to take place near a city or town[17].

1. Development shall be guided away from existing prime agricultural lands towards areas containing non-prime agricultural lands, unless such an action would not promote the planned, orderly, efficient development of an area.

2. Development within an agency's existing jurisdiction or sphere of influence should be encouraged before approval of any annexation to that agency which would lead to conversion of existing open space lands to other than open spaces[18].

In practice, some county LAFCOs have very strong policies designed to prevent municipal annexation of agricultural land, while others have typically granted annexation petitions. The Marin County LAFCO is widely acknowledged to have the state's strongest policies to protect farmland. It has adopted a policy which gives it the authority to deny annexation of productive agricultural land that is subject to APZ.

Monitoring and enforcement

Monitoring and enforcement are critical to the success of APZ. Monitoring can detect violations of the zoning ordinance early, when they are easy to correct. If non-conforming uses become established, it may be expensive and time-consuming to enforce the zoning.

Planner Phil Rovang of Carroll County, Md., reflects that enforcement of APZ ordinances depends on the philosophy of local elected officials. Often, county commissioners prefer a hands-off approach to enforcement, which he describes as "don't go looking for trouble, but respond to complaints." Rovang warns that this method can lead to problems. He tells about a complaint he received in his previous position as a planner in Iowa. A citizen called and timidly reported, "I think my neighbor has a few too many trucks." Further investigation revealed that a farmer had set up a business to haul grain. Starting with one truck designed to haul grain from his own fields, the farmer soon began hauling grain for neighbors, and the business eventually evolved into a large, multi-purpose trucking operation. When the violation was revealed, the farmer requested that the land be rezoned from agriculture to industrial. The request was denied, and the operation was forced to move. "It was a real pain," remembers Rovang. "Little things can really grow on you[19]."

Rovang recommends that planners stay in close contact with farm organizations and civic groups to explain the zoning ordinance and avoid surprises. He believes that having farmers on the planning commission can make enforcement easier. Farmers on the planning commission can be the "first line of inquiry" for other farmers and rural residents who have questions about what uses are permitted in the agricultural protection zone.

APZ AND AGRICULTURAL TAX PROGRAMS

In most states, farmers receive significant tax benefits from differential assessment programs. Non-farm residents incur higher local property tax bills to compensate for the lower valuations of agricultural lands under differential assessment. Even though studies have proven that differential assessment simply corrects inequities in the tax system, the programs have been criticized on the grounds that they give farmers tax breaks without any assurance that the farm and ranchland under differential assessment will remain in agriculture. APZ can increase the likelihood that this farmland will not be developed.

Wisconsin has a circuit-breaker tax relief program that allows farmers to take state income tax credits based on their local property tax. Eligibility for tax relief is tied to local planning and APZ. Farmers may not apply for income tax credits under the state's farmland preservation credit program unless their county has adopted a farmland preservation plan. Farmers with land in jurisdictions that have both a farmland preservation plan and an exclusive APZ ordinance are eligible for larger credits than those in communities that do not have APZ. This requirement created a very strong incentive for local governments to adopt APZ. While farmers in many communities around the country have opposed agricultural protection zoning, Wisconsin farmers have lobbied local governments to approve APZ ordinances[20].

APZ AND AGRICULTURAL DISTRICTS

Only two of the 16 states with agricultural district programs require agricultural zoning on land enrolled in an agricultural district. In Delaware, land proposed for inclusion in a district must be zoned for agriculture, and must not be subject to any major subdivision plan. Rezoning land in an agricultural district is prohibited, and land uses are limited to "agricultural and related uses." Although Delaware does not have APZ, residential development in agricultural districts is limited to housing for the landowners, relatives and farm employees. The maximum residential density is one dwelling for every 20 acres owned in the district; but no more than 10 acres total may be used for housing[21].

Minnesota has two agricultural district programs. In the Twin Cities Metropolitan Area, only "long-term agricultural land" is eligible for enrollment in an "agricultural preserve." Long-term agricultural land is defined as "land in the metropolitan area designated for agricultural use in local or county comprehensive plans...and which has been zoned specifically for agricultural use permitting a maximum residential density of not more than one unit per quarter-quarter[22]."

Under Minnesota's statewide Agricultural Land Preservation law, a county must develop an agricultural land preservation plan and a set of regulations implementing the plan in order to become eligible to create agricultural preserves[23]. The plan must:

- be integrated with comprehensive county and municipal plans;
- identify land currently in agricultural use;
- identify areas in which development is occurring or likely to occur in the next 20 years;

- identify existing and proposed public sanitary sewer and water systems;

- classify land suitable for long-term agricultural use and take note of its current and future development; and

- determine present and future housing needs representing a variety of price and rental levels, and identify areas adequate to meet the demonstrated or projected needs.

Regulations must address at least the following elements:

- designation of land suitable for long-term agricultural use and the creation of exclusive agricultural use zones, allowing for conditional, compatible uses that do not conflict with long-term agricultural use;

- designation of urban expansion zones where limited growth and development may be allowed;

- residential density requirements and minimum lot sizes in exclusive agricultural use zones and urban expansion zones; and

- standards and procedures for county decisions on rezoning, subdivision and parcel divisions[24].

Only owners of land that has been designated for exclusive long-term agricultural use under an approved agricultural preservation plan may apply for the creation of an agricultural preserve[25].

Both Delaware and Minnesota provide tax benefits to landowners who enroll their land in an agricultural district. In Delaware, landowners who enroll in a district are eligible for the state PACE program; in Minnesota, landowners are protected from municipal annexation and unreasonable local regulations. These benefits partially compensate farmers for any loss in equity due to restrictions on land use. Kentucky's law also limits municipal governments' ability to annex land enrolled in agricultural districts.

The Delaware and Minnesota agricultural district programs also address the impermanence of APZ. In Delaware, landowners who enroll in an agricultural district must sign a 10-year covenant. In Minnesota, agricultural district agreements are terminated eight years after the landowner or county files an expiration notice.

APZ AND PURCHASE OF AGRICULTURAL CONSERVATION EASEMENTS

State and local governments have invested more than $880 million in programs to purchase agricultural conservation easements on agricultural land. Yet PACE programs can protect only a fraction of the land necessary to sustain local farm economies. If the land surrounding protected properties is developed, land use conflicts and the loss of agricultural services may make it difficult or impossible to continue operating the restricted farms. APZ can

ensure that the land surrounding conserved farms remains in agriculture. It can also protect large areas from development until funds are available for purchase of permanent easements.

Carroll County, Md., enacted APZ in 1978 after a county study found that non-farm development was threatening agricultural viability. The new 184,000-acre agricultural protection zone covered 64 percent of the county. Density was reduced from one residence per acre to one unit per 20 acres. The county began participating in the state PACE program at the same time. It also agreed to provide increased funding for public services in designated growth zones. The PACE program helped "sell" APZ to the farm community.

King County, Wash., approved a PACE program in 1979, and began acquiring easements in 1985. As part of its farmland protection program, the county created "agricultural production" zones in 1985, with minimum lot sizes of up to 35 acres. Most easement purchases were in these zones.

APZ AND TRANSFER OF DEVELOPMENT RIGHTS

By combining APZ with PACE, communities can address the concern that APZ decreases farmers' equity. A transfer of development rights (TDR) program can accomplish the same purpose. When Thurston County, Wash., changed the zoning in its agricultural areas from one unit per five acres to one unit per 20 or 40 acres, county planners promised that they would develop PACE and TDR programs to allow landowners to sell the development potential they were losing under the new ordinance. Under the new ordinance, maximum densities in the agricultural protection zones are either one unit per 20 acres or one unit per 40 acres. The PACE and TDR programs, however, give landowners the option of selling one development right for every five acres, which was the density permitted prior to the adoption of APZ.

OBSERVATIONS

Many farmers oppose APZ because it limits potential uses of their land. Opposition is likely to be strongest in communities where significant non-farm development has already taken place, threatening the long-term viability of commercial agriculture. If the jurisdiction does not have additional policies to support agriculture, such as agricultural districts, PACE, TDR or programs to promote farm products, agricultural land owners may feel that enactment of APZ is an attempt to preserve open space at the farmers' expense.

APZ is more likely to be acceptable to farmers in areas where the agricultural economy is strong, and when it is one element in an integrated program of land use and economic strategies to promote and support farming. Farmers are also more likely to support APZ if they are closely involved in the process of revising the zoning code. In some communities, farmers have actively campaigned for more restrictive zoning to protect their land from development.

In Napa County, Calif., enactment of APZ during the early 1970s divided the agricultural community. Some farmers supported the establishment of large minimum lot sizes to contain urban growth, while others opposed new restrictions that could limit property values[26].

One group of landowners unsuccessfully sued the county when it approved an APZ ordinance with 20-acre minimum lot sizes. As the county's wine industry became more profitable, however, opposition to agricultural zoning decreased. Minimum lot sizes increased from 20 to 40 acres. In 1994, the Napa County Farm Bureau supported amendments to the ordinance which increased lot sizes to 160 acres in some grape-growing areas. The lesson to be learned from Napa is that farmers are more likely to support agricultural zoning when farming is profitable.

Black Hawk County, Iowa, has one of the nation's oldest and most-studied APZ ordinances. The ordinance is strongly supported by the county's farmers, despite the fact that it restricts their ability to sell land for development. Lyle Waters, a retired farmer and action chairman for the farm bureau in Black Hawk County, speaks for many of his neighbors. "Zoning has been a godsend for us," he states emphatically. "We've kept urban sprawl pretty much contained to the cities. On the whole, [the Farm Bureau] has backed county zoning pretty much 100 percent[27]."

Farmers Lobby for APZ in Walla Walla County, Washington

Some farmers have actively lobbied local governments for APZ to protect their land from development. In 1991, a small group of farmers in Walla Walla County, Wash., led a successful campaign to enact exclusive APZ in one of the most fertile areas of the county. "We have some of the best agricultural land in the world here," boasts farmer and activist Jeanne Brewer[28].

Farmers in the Russell Creek area of Walla Walla County grow wheat, beans, peas and oilseed crops on unirrigated land. To be commercially viable, farms must be large; most operations encompass thousands of acres. Parts of the Russell Creek area are just five miles from the growing city of Walla Walla, however, and development of non-farm residences on 20-acre lots increased during the 1980s. To protect the area from conversion, 56 landowners signed a petition asking that the zoning be changed from one residence per 20 acres to one per 120 acres. A survey conducted by the group of farmers found that a majority of the area's landowners supported, did not object to, or would not be affected by the proposed zoning change. One farmer expressed the feelings of many of his neighbors when he wrote on his survey, "This is a farming area not intended for housing development in any form. Someone must help feed the country; Russell Creek farmers are trying to do that[29]."

The zoning change was approved in 1992. Jeanne Brewer believes that maintaining the zoning at 120 acres will be enough to protect the land in Russell Creek. The challenges will be to prevent changes in the zoning, and to limit development in other important farming areas in the county[30].

APZ is the only farmland protection technique that can prevent development of large tracts at low public cost. It seems to be successful under two different sets of circumstances. In many predominantly rural counties in the Midwest and West, planners and farmers rely on comprehensive plans and APZ ordinances to maintain the agricultural land base. In these jurisdictions, places such as Black Hawk County, Iowa, Whitman County, Wash., Clinton County, Ind., and dozens of Wisconsin counties, APZ was enacted when agriculture was the dominant land use, development pressure was minimal to moderate, and the price of land in rural areas was close to its value for farming. Farmers in these areas had no strong motivation to oppose APZ when it was implemented because they planned to keep their land in farming. APZ has been successful in these areas because it has helped keep farms extensive and profitable. Farmers support APZ because they do not feel that it has limited their options. Most have no desire to sell land for development, and they see zoning as a means of preventing any of their neighbors from doing so.

In the mid-Atlantic states, western Washington and California, APZ is being used as one component of comprehensive agricultural land protection programs. In areas such as Carroll and Montgomery Counties in Maryland, Lancaster County, Pa., Sonoma County, Calif., and Thurston County, Wash., farming is still profitable, but development pressure is strong and the price of land is generally far higher than its value for agriculture. APZ alone cannot address the economic challenges that farmers face in rapidly growing communities. These jurisdictions have combined APZ with PACE and TDR programs that allow farmers to retain their equity in the land, and provide a source of cash that can be used to adapt their operations to changing conditions. The combination of APZ and PACE has been particularly successful in protecting farmland in urban-influenced counties in Maryland and Pennsylvania. Some of these communities also have publicly funded programs to promote and market local farm products.

The experience with APZ over the past 25 years suggests an important lesson for rural communities that are just starting to address the challenges of protecting agricultural land from development. APZ is most effective when it is implemented before the threat to farmland becomes severe. The effectiveness, and political acceptability, of APZ in areas that are experiencing strong urban growth often depends on the local government's commitment to other programs that support farming.

For more information on farmland protection, contact the Farmland Information Center at http://www.farmlandinfo.org or call (413) 586-4593.

APPENDIX B: USES PERMITTED IN EXCLUSIVE AGRICULTURAL, GENERAL AGRICULTURAL AND RURAL SETTLEMENT ZONES IN SPOKANE COUNTY, WASH.

APPENDICES

Chapter 14.637

EXCLUSIVE AGRICULTURAL, GENERAL AGRICULTURAL AND RURAL SETTLEMENT ZONES MATRIX

Section:

14.637.020 Use - Residential/Business/Service/Industrial

	EA	GA	RS
Aboveground tank storage of liquefied petroleum gas (LPG)	P-Acc.(1)	P-Acc.(1)	P-Acc.(1)
Adult Bookstore	N	N	N
Adult Entertainment Establishment	N	N	N
Auto wrecking, junk and salvage yards	N	C.U.	N
Automobile/truck/painting/repair	N	N	C.U.
Business and professional office	N	N	P(1)
Caretaker's residence	N	N	N
Community residential facility *(8 or fewer residents)*	N	N	N
Community residential facility *(greater than 8 residents, no more than 25 residents)*	N	N	N
Community treatment facility *(8 or fewer residents)*	N	N	C.U.
Community treatment facility *(greater than 8 residents, no more than 20 residents)*	N	N	N
Conditional Accessory Unit	N	C.U.(1)	C.U.(1)
Contractor's Yard	N	C.U.	N
Dependent Relative Manufactured (Mobile) Home	C.U.	C.U.	C.U.
Dormitory	N	P	P
Duplex	C.U.	P-Acc.(1)	P(1)
Fraternity, sorority	N	P	P
Home industry	C.U.	C.U.	C.U.
Home profession	P-Acc.(4)	P-Acc.(4)	P-Acc.(4)
Household pets	P	P	P
Machine shop	N	N	C.U.
Manufactured home	P(1 & 2)	P(1 & 2)	P(1 & 2)
Manufactured home park	N	N	P(2)
Multifamily dwelling	N	N	N
Neighborhood retail or service business	N	N	P(1)
Nursing home, convalescent home	N	N	N

Prison, jail, or institution 1. Maximum security 2. Minimum security 3. Work release 4. Correctional facility	N	C.U.	N
Retirement apartment	N	N	N
Self-service storage facility	N	N	C.U.
Single-family dwelling	P(1)	P(1)	P
Solar collector and associated systems	P-Acc.	P-Acc.	P-Acc.
Storage Structure, detached, private	P	P	P
Tank Storage of critical material			
Aboveground	P-Acc.(1)	P-Acc.(1)	N
Belowground	P-Acc.	P-Acc.	P-Acc.
Tire Salvage Yard	N	C.U.	N
Transitional community facility *(8 or fewer residents)*	N	N	N
Transitional community facility *(greater than 8 residents, no more than 20 residents)*	N	N	N

Other uses as determined by the Hearing Body in public hearing as an amendment to the Zoning Code.

14.637.040 Use - Public and Semipublic

	EA	GA	RS
Archery, rifle, gun, pistol ranges/clubs	N	C.U.	N
Cemetery	N	C.U.	N
Church	N	P	P
Commercial composting storage/processing	N	C.U.	N
Community hall, club or lodge	C.U.	P(1)	P
Community recreational facility	N	N	C.U.
Community swimming pool	N	N	P
Community transit center	N	N	P
Day care center	N	N	C.U.
Day care center *(in a church or a public or private school)*	N	P(1)	P(1)
Family day care home	P	P	P
Fire station	P(1)	P(1)	P
Golf course	N	P(1)	N
Hospital	N	N	N
Incinerator	N	C.U.	N
Landfill	N	C.U.	N
Library	N	N	P
Medical office or emergency clinic	N	N	P
Mini day care center (in a dwelling)	N	P	P
Mini day care center (not in a dwelling)	N	N	P
Nonmotorized trail system	C.U.	C.U.	N
Nursery school	C.U.	P	P

Park and ride facility	N	C.U.	P
Park, public	N	P	P
(including caretaker's residence)			
Post office	P(1)	P	P
Private repeater facility	P	P	P
Public utility local distribution facility	P	P	P
Public utility transmission facility	P(1)	P(1)	P(1)
Racetracks	N	C.U.	N
(horses, dogs, autos, go-carts, snowmobiles, off-road vehicles, motorcycles)			
Recreational area, commercial	N	C.U.	C.U.
Recreational vehicle park	N	C.U.	C.U.
Sanitarium	N	N	N
Schools - public and private			
1. Kindergarten	C.U.	P	P
2. Elementary	C.U.	P	P
3. Middle	C.U.	C.U.	C.U.
4. Junior High	C.U.	C.U.	C.U.
5. High	C.U.	C.U.	C.U.
6. Junior college	C.U.	C.U.	C.U.
7. College or university	C.U.	C.U.	C.U.
8. Expansion of existing public or private schools or addition of accessory structure on adjacent property	P	P	P
Sewage sludge land application	P	P	N
Solid waste hauler	N	N	C.U.
Solid waste recycling/transfer site	P(1)	P(1)	C.U.
Solid waste recycling/transfer site, private	P(1)	P(1)	C.U.
Tower	P(1)	P(1)	P(1)
Tower, private	P-Acc.(1)	P-Acc.(1)	P-Acc.(1)

Other uses as determined by the Hearing Body in public hearing as an amendment to the Zoning Code.

14.637.060 Agricultural, Silvicultural and Agriculture-related

	EA	GA	S
Agricultural processing plant, warehouse	C.U.	P	N
Agricultural product stand	P(1)	P(1)	N
Airstrip for crop dusting and spraying	C.U.	C.U.	N
Airstrip, personal	P(1)	P(1)	N
Airstrip, private	N	C.U.	N
Animal clinic - veterinary - large and small animals	N	P	C.U.
Animal raising and/or keeping	P	P(1)	N
Beekeeping, commercial	P	P	N
Beekeeping, hobby	P	P	P-Acc.(1)
Cultivation of land (commercial)	P	P	N
Dairy	P	P	N
Farm machinery sales and repair	P(1)	P	P
Feed lot	C.U.	C.U.	N

Feed mill	P	P	N
Fertilizer application facility	C.U.	P	N
Fish hatchery	N	P	N
Floriculture (flower growing)	P	P	N
Gardening	P	P	P
Gasohol plant, commercial use	N	C.U.	N
Gasohol plant, personal use	P(1)	P(1)	N
Grain elevator	P	P	P
Grazing	P	P	N
Greenhouse-commercial	P	P	N
Hazardous waste treatment and storage facilities, off-site	N	N	N
Hazardous waste treatment and storage facilities, on-site	P-Acc.(1)	P-Acc.(1)	P-Acc.(1)
Horse boarding and training	N	P	N
Horticulture (vegetable growing)	P	P	N
Kennel	N	C.U.	N
Kennel, private	N	C.U.	C.U.
Nursery-wholesale	P	P	N
Orchard	P	P	N
Pigeon, performing/show	P-Acc.	P-Acc.	P-Acc.
Riding stable	N	P	N
Sawmill and lumber mill	N	P(1)	N
Transient-agricultural labor residence	C.U.	C.U.	N
Tree farming	P	P	N
Truck gardening	P	P	N
Vineyard	P	P	N
Winery	C.U.	P	N

Other uses as determined by the Hearing Body in public hearing as an amendment to the Zoning Code.

14.637.080 Index of Letters and Symbols

P Permitted use.

P(1) See Chapters 14.638 (EA), 14.640 (GA) and 14.642 (RS) for specific standards for locating and approving these uses.

P(2) See Chapter 14.808 for required Manufactured Home development standards.

P(3) See Chapter 14.812 for required Solar development standards.

P(4) See home profession definition.

P-Acc. Permitted accessory use.

C.U. Conditional use.

C.U.(1) See Chapter 14.816.

N Not permitted use.

APPENDIX C: SAMPLE NATURAL RESOURCE EASEMENT FROM FREMONT COUNTY, IDAHO.

RESOURCE MANAGEMENT EASEMENT

_____ are the owners of real property described as follows:

In accordance with the conditions set forth in the decision of Fremont County dated _____, approving a permit for residential development on the above described property, and in consideration of such approval, Grantors grant to the owners of all property adjacent to the above described property, a perpetual nonexclusive easement as follows:

1. The Grantors, their heirs, successors, and assigns acknowledge by the granting of this easement that the above described property is situated in an agricultural area and may be subjected to conditions resulting from commercial agricultural operations on adjacent lands. Such operations include the cultivation, harvesting, and storage of crops and livestock raising and the application of chemicals, operation of machinery, application of irrigation water, and other accepted and customary agricultural activities conducted in accordance with federal and state laws. These activities ordinarily and necessarily produce noise, dust, smoke, and other conditions that may conflict with Grantors' use of Grantors' property for residential purposes. Grantors hereby waive all common law rights to object to normal and necessary agricultural management activities legally conducted on adjacent lands which may conflict with Grantors' use of Grantors' property for residential purposes and grantors hereby grant an easement to adjacent property owners for such activities.

2. Nothing in this easement shall grant a right to adjacent property owners for ingress or egress upon or across the described property. Nothing in this easement shall prohibit or otherwise restrict the Grantors from enforcing or seeking enforcement of statutes or regulations of governmental agencies for activities conducted on adjacent properties.

This easement is appurtenant to all property adjacent to the above described property and shall bind to the heirs, successors, and assigns of Grantors and shall endure for the benefit of the adjoining landowners, their heirs, successors, and assigns. The adjacent landowners, their heirs, successors, and assigns are hereby expressly granted the right of third party enforcement of the easement.

IN WITNESS WHEREOF, the grantors have executed this easement dated this_____ day of _____, 19____.

Grantor _____

STATE OF

COUNTY OF

On this _____ Day of_____ , 19_____ , before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known/proved to me to be the person/s whose name/s subscribed to the within instrument and acknowledged to me that _____ executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in the certificate first above written.

_____

Notary Public for the State of
Residing at:
Commission Expires:

ENDNOTES

1. *Village of Euclid v. Ambler Realty Company*, 272 US 365 (1926).

2. Robert E. Coughlin, *The Adoption and Stability of Agricultural Protection Zoning in York County, Pennsylvania* (Philadelphia, Pa.: University of Pennsylvania Department of City and Regional Planning, 1993), pp. 15-16.

3. American Resources Information Network, *Summary of State Takings Legislation* (Washington, D.C., January 1, 1997).

4. *Ibid.*

5. Robert P. Benner, "Saving Oregon's Farmland" (unpublished address to the Oregon Board of Agriculture, February 15, 1996).

6. John DeGrove, communication with John Keene, 1995.

7. Robert E. Coughlin, *The Adoption and Stability of Agricultural Protection Zoning in Lancaster County, Pennsylvania* (Philadelphia, Pa.: University of Pennsylvania Department of City and Regional Planning, 1992).

8. *DeVita v. County of Napa*, 9 Cal. 4th 763 (March 1995). The Court held that the county's General Plan could be amended by citizen initiative.

9. Story County Planning and Zoning, *County Development Plan* (Nevada, Iowa, 1993), p. 3.

10. Lancaster County Planning Commission, *Lancaster County Comprehensive Plan* (Lancaster, Pa., 1991), pp. 9-11.

11. San Mateo County Planning and Building Division, *Section 6350, San Mateo County Zoning Regulations: Planned Agricultural District.*

12. Sonia A. Johannsen and Larry C. Larsen, "Corn Suitability Ratings: A Method of Rating Soils for Identifying and Preserving Primate Agricultural Lands in Black Hawk County, Iowa," in Frederick R. Steiner and John E. Theilacker, *Protecting Farmlands* (Westport, Conn.: The AVI Publishing Company, 1984), pp. 112-115.

13. Scott County, Iowa, Zoning Ordinance (Davenport, Iowa amended 1993), p. 25.

14. James R. Pease, Robert E. Coughlin, Frederick R. Steiner, et al., "State and Local LESA Systems: Status and Evaluation," in Steiner, Pease and Coughlin, *A Decade with LESA: The Evolution of Land Evaluation and Site Assessment* (Ankeny, Iowa: Soil and Water Conservation Society, 1994), p. 64.

15. Coughlin, *op. cit.*, pp. 18-19.

16. Chuck Donley, Assistant Planning Director, Routt County, Calif., telephone conversation with Robin Sherman, April 4, 1997.

17. Wilbur Moeller, telephone conversation with Robin Sherman, September 1996.

18. Government Code, Section 54790.2.

19. Phil Rovang, telephone conversation with Robin Sherman, February 1997.

20. Roger Cliff, director of government relations, Wisconsin Farm Bureau, Telephone conversation with Robin Sherman, March 18, 1997.

21. Delaware Code Annotated Title 3, Section 909 (a).

22. Minnesota Statute Chapter 473H.02.

23. Minnesota Statute 40A.04.

24. Minnesota Statute 40A.05.

25. Minnesota Statute 40A.09.

26. Mary E. Handel and Alvin D. Sokolow, *Farmland and Open Space Preservation in the Four North Bay Counties* (Davis, Calif., University of California, 1994).

27. Lyle Waters, telephone conversation with Robin Sherman, September 1996.

28. Jeanne Brewer, interview with Robin Sherman, June 1996.

29. *Ibid.*

30. *Ibid.*

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Coughlin, Robert E. *The Adoption and Stability of Agricultural Protection Zoning in York County, Pennsylvania.* Philadelphia, Pa.: University of Pennsylvania Department of City and Regional Planning. 1993.

Coughlin, Robert E. *The Adoption and Stability of Agricultural Protection Zoning in Lancaster County, Pennsylvania.* Philadelphia, Pa.: University of Pennsylvania Department of City and Regional Planning. 1992.

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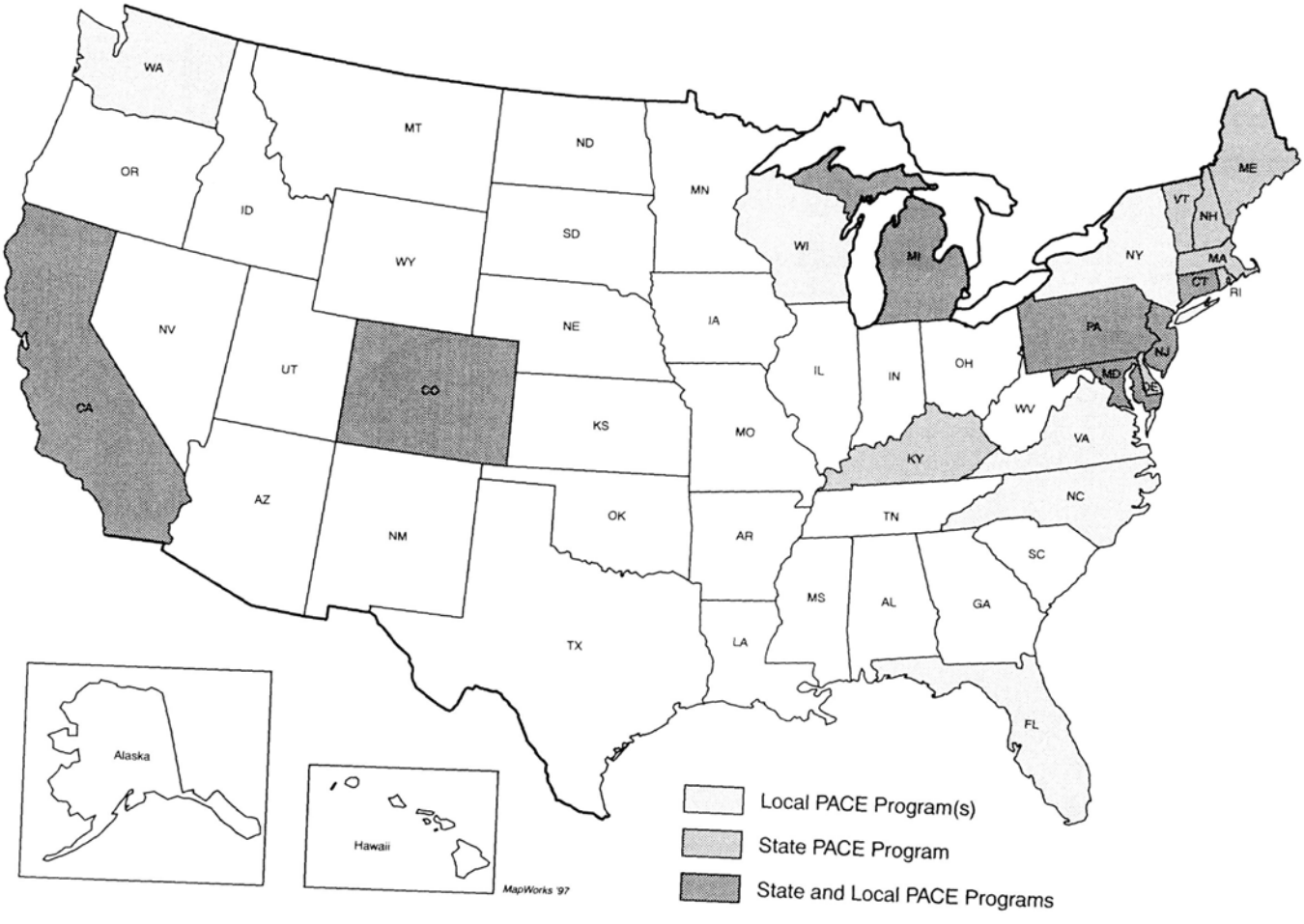
Thompson, Edward, Jr. "Zoned for Agriculture." *County Journal,* November 1983, pp. 84-95.

CHAPTER 3: PURCHASE OF AGRICULTURAL CONSERVATION EASEMENTS

MAP 3.1: STATES WITH PACE PROGRAMS, 1997



American Farmland Trust

BRIEF DESCRIPTION OF PACE

The purchase of agricultural conservation easements (PACE) refers to programs that pay property owners to keep land available for agriculture. PACE is known as Purchase of Development Rights (PDR) in many locations (see glossary for terms).* Typically, landowners sell agricultural conservation easements to a government agency or private conservation organization. The agency or organization usually pays them the difference between the value of the land for agriculture and the value of the land for its "highest and best use," which is generally residential or commercial development.

Legal covenants impose a conservation easement that "runs with the land," prohibiting all future owners of the property from developing it—or using it in any manner that negatively affects its future agricultural viability—unless the document establishing the easement provides that the easement may be terminated for cause or at the end of a specified period of time. After selling an easement, the landowner retains all other rights of ownership, including the right to farm the land, prevent trespass, sell, bequeath or otherwise transfer the land to others. An agency or organization that buys an easement does not acquire the right to build anything on the land, but only the right and responsibility to prevent development.

FUNCTIONS AND PURPOSES OF PACE

PACE compensates landowners for permanently limiting non-agricultural land uses. PACE programs serve four principal functions that contribute to farmland protection:

- PACE prevents non-agricultural development that would effectively foreclose the possibility of farming. Because such development often conflicts with neighboring agricultural operations, PACE helps protect their economic viability as well.

- Removing the development potential from farmland generally reduces its future market value. This may help facilitate farm transfer to the children of farmers and make the land more affordable to beginning farmers and others who want to buy it for agricultural purposes. The reduction in market value may also reduce property taxes and help prevent them from rising.

- PACE provides landowners with liquid capital that can enhance the economic viability of individual farming operations and help perpetuate family tenure on the land. For example, the proceeds from selling agricultural conservation easements may be used to reduce debt, expand or modernize farm operations, invest for retirement or settle estates. The reinvestment of PACE funds in equipment, livestock and other farm inputs may also stimulate local agricultural economies.

- PACE gives communities a way to share the costs of protecting farmland with landowners. Non-farmers have a stake in the continuation of agriculture for a variety of reasons, including keeping locally grown food available and maintaining scenic and historic landscapes, open space, watersheds and wildlife habitat. PACE allows them to "buy into" the protection of farming and be assured that they are receiving something of lasting value. Landowners are given a financially competitive alternative to development as a means of cashing in a fair percentage of the equity in their land.

* In practice, there is no difference between PACE and PDR. Both terms refer to programs that use public money to prevent farmland from being converted to non-agricultural use. As a matter of terminology, some states, such as Massachusetts, do not allow farmland protection programs to purchase easements. Instead, the state pays for a negative restriction on development. In California, on the other hand, the state and local governments buy easements, because farmland protection programs cannot actually buy "development rights."

BENEFITS AND DRAWBACKS OF PACE

BENEFITS

- PACE protects farmland permanently, regardless of who owns it.
- Participation in PACE programs is voluntary.
- PACE can be implemented by state or local governments, or by private organizations.
- PACE provides farmers with cash, helping them address the economic challenges of farming in urban-influenced areas.
- PACE programs can protect ecological as well as agricultural resources.

DRAWBACKS

- PACE is expensive.
- PACE can rarely protect enough land to eliminate development pressure on unrestricted farms.
- Purchasing easements is time-consuming.
- Monitoring and enforcing easements requires an ongoing investment of time and resources.

TRENDS IN PACE

BRIEF HISTORY

Suffolk County, N.Y., pioneered the purchase of easements as a farmland protection strategy. Suffolk, which occupies the eastern end of Long Island, has been the highest-grossing agricultural county in New York for more than two decades. The process of designing the county PACE program and winning political support for a $21 million bond to fund it started in 1974. Funds were appropriated in 1976, and the first deals were closed in 1977.

Following Suffolk County's lead, Maryland and Massachusetts authorized PACE programs in 1977, Connecticut in 1978 and New Hampshire the following year. One impetus for these programs was an increased concern for regional food security in the wake of gasoline shortages and fears of an "energy crisis." Growing concerns about the loss of open space also contributed to the enactment of PACE programs. King County, surrounding Seattle, Wash., began the first PACE program in the West during the same period.

The 1981 U.S. Department of Agriculture's National Agricultural Lands Study reported on these early PACE efforts. The publicity may have been partly responsible for the expansion and diffusion of PACE during the 1980s: Rhode Island (1981), New Jersey (1983), Vermont (1987), Maine (1987) and Pennsylvania (1987) authorized programs during this period. California's Marin County inaugurated an innovative program in 1980 by partnering local

government with a private land trust. Encouraged by the success of earlier programs, specific PACE authorizing legislation has been adopted during the 1990s in Delaware (1991), Kentucky (1994), California (1995) and Michigan (1996).

Local PACE programs also continued to expand during this period. Forsyth County, N.C., created a PACE program in 1986. In 1987, Montgomery County, Md., adopted PACE to complement its successful transfer of development rights program. Montgomery was followed closely by Howard, Carroll and other Maryland counties that wanted to supplement the state's program. California voters passed a statewide bond referendum in 1988, which provided funds for local PACE programs in Marin, Monterey, Sonoma and other counties. Since then, other local jurisdictions around the nation have started PACE programs, among them Peninsula Township, Mich. (1994), Pittsford, N.Y. (1996), Virginia Beach, Va. (1995), Branford, Conn. (1996) and Skagit and Thurston Counties, Wash. (1996). Tables 3.1 and 3.2, pps. 86 and 87 include information on state and selected local PACE programs.

TABLE 3.1: STATE PACE PROGRAMS, 1997

State	Year of Inception	Acres Protected	Farms Protected	Funds Spent To Date	Funding Source
California	1995	0	0	$0	State appropriation, FPP
Colorado	1994	1,878	3	$610,000	A portion of lottery proceeds, FPP
Connecticut ✗	1978	25,566	169	$74,835,100	State bonds, FPP
Delaware	1991	15,961	65	$18,950,000	Appropriations from special capital fund, FPP
Kentucky	1994	0	0	$0	Governor's Capital Construction Fund, FPP
Maine	1987	464	2	$430,000	State bonds
Maryland ✗	1977	128,031	884	$140,637,690	Agricultural transfer tax, portion of real estate transfer tax, FPP
Massachusetts	1977	39,334	430	$95,000,000	State bonds, FPP
Michigan	1994 *	79	2	$709,600	Withdrawal penalties from state circuit breaker program, FPP
New Hampshire					
APP	1979	5,500	35	$5,100,000	State appropriations
LCIP	1987	6,232	22	$5,349,008	State bonds
New Jersey ✗	1983	34,972	234	$167,826,221	State bonds, FPP
Pennsylvania	1988	91,813	730	$186,000,000	Cigarette tax, state bonds, county allocations, FPP
Rhode Island	1981	2,429	31	$13,199,525	State bonds, FPP
Vermont ❖	1987	54,466	162	$29,071,276	State bonds, real estate transfer tax, Farms for the Future Pilot
TOTAL		**406,725**	**2,769**	**$737,718,420**	

* First agricultural conservation easement purchase.
✗ Funds spent to date does not include administrative costs.
❖ Figures as of 8/1/96. Vermont received $1,000,000 from the FPP in the fall of 1996.
APP: Agricultural Preservation Program.
LCIP: Land Conservation Investment Program. The program was terminated in 1993.
FPP: Federal Farmland Protection Program.

Programs in Colorado, Maine and Vermont are multi-purpose programs; the figures in the table represent easement acquisitions on farmland.

Programs in California and Colorado do not purchase easements. Instead, these programs provide funding to local governments and land trusts.

TABLE 3.2: SELECTED LOCAL PACE PROGRAMS, 1997

Jurisdiction	Year of Inception	Acres Protected	Farms Protected	Funds Spent To Date	Funding Source
California					
Marin County	1980	25,504	38	$17,000,000	State bonds, 10% of unallocated county funds
Sonoma County	1990	22,850	60	$34,000,000	.25% sales tax, state bonds
Colorado					
City of Boulder✗	1984*	1,092	6	$6,833,732	Sales tax
Florida					
Green Swamp Land Authority	1994	12,826	22	$10,500,000	Appropriations from state agencies and a water management district
Michigan					
Peninsula Township	1994	724	10	$1,253,000	Property tax increase, state grants. FPP
New York					
Southampton	1980	765	19	$5,640,000	Municipal bonds, FPP
Southold❖	1986	627	24	$5,010,000	Property tax increase
Suffolk County	1974	5,568	139	$26,000,000	Municipal bonds, FPP
North Carolina					
Forsyth County	1986	1,236	20	$1,869,965	County budget reserve, FPP
Pennsylvania					
Buckingham Township	1996	137	3	$1,100,000	Municipal bonds
Virginia					
Virginia Beach	1995	48	1	$267,016	Property tax increase, cellular phone tax
Washington					
King County	1979	12,691	209	$54,113,724	Municipal bonds, FPP
San Juan County	1990	670	5	$1,419,401	Real estate transfer tax
Wisconsin					
Dunn	1996	174	1	$260,000	Property tax increase
TOTAL		**84,912**	557	**$165,266,838**	

* First agricultural conservation easement purchase.
✗ Funds spent to date does not include administrative costs.
❖ Figures as of 8/1/96. Southold received $100,000 from the FPP in the fall of 1996.
FPP: Federal Farmland Protection Program.
Boulder's Open Space Department is a multi-purpose program that also purchases land in fee; the figures in the table represent easement acquisitions on farmland.

At this writing, several states, including Illinois and Ohio, are actively considering the adoption of PACE programs. Arizona, North Carolina, West Virginia and Wisconsin have PACE enabling legislation, but have not yet adopted programs. These and other states may be encouraged by the Federal Agricultural Improvement and Reform Act of 1996, known as the "1996 Farm Bill," which authorized $35 million in federal matching funds to assist state and local PACE programs.

ACCOMPLISHMENTS

PACE programs have achieved a noteworthy track record during the past two decades. As of May 1996, 11 states had passed legislation creating statewide PACE programs. An additional four states authorize and provide funding to local PACE programs. Collectively, state and county programs have protected 490,967 acres of farmland, investing more than $750 million—an average of $35 million a year. Connecticut, Maryland, Massachusetts, New Jersey, Pennsylvania and Vermont have mature PACE programs that account for more than 75 percent of all the acreage protected. Maine, New Hampshire, and Rhode Island have operated less active programs to which fewer resources have been committed, and California, Colorado, Delaware, Kentucky, Michigan and New York have up-and-coming PACE programs that are on the verge of attracting significant funding. After 20 years of activity at the state and local level, Congress approved limited federal matching funds for PACE in the 1996 Farm Bill.

In most states, farms protected by PACE tend to be clustered in areas where the land is of superior quality, the community has been especially active in trying to protect its agriculture, or both. In Massachusetts, for example, the fertile Connecticut River Valley region is a target area. Most of the farmland protected by the Commonwealth of Pennsylvania is concentrated in Lancaster, Chester, Berks and other southeastern counties that account for almost half of the state's total agricultural production. In California, Marin and Sonoma Counties, north of San Francisco Bay are the center of PACE activity, with some purchases along the coast in spectacular agricultural areas like the Salinas Valley, where three crops of vegetables a year are commonplace.

CHALLENGES

Even the most active state PACE programs are unable to keep up with farmer demand. A recent study found that for every landowner who sold easements to state or local programs in 1995, six other landowners had to be turned away for lack of funding[1]. Though some of them will be able to sell easements in subsequent years, there is a limit to how long many landowners can wait. The states with the most active PACE programs collectively lost three times as much prime farmland, and 10 times as much other agricultural land, as they protected with PACE from 1982 to 1992[2].

Meanwhile, a new challenge is emerging for the older PACE programs. Massachusetts, Connecticut, King County, Wash., and Suffolk County, N.Y., report that some restricted properties are being purchased as estates by wealthy individuals who do not intend to farm the land on their own or, in some cases, keep the land in agriculture at all. This trend raises serious policy concerns for PACE programs in the long term.

While a PACE property which is resold as an estate may be technically available for agriculture in the sense that it is not covered with houses, once the value of the land increases beyond its agriculture value, it is less likely that a commercial farmer will be able to buy it. Owners of these "PACE estate farms" may rent their land to commercial farmers or continue to farm it themselves, but the conversion of commercial farms to estates raises troubling social questions: Does it matter who owns the land as long as it is farmed? What if the land is available for agriculture in the future but is not currently farmed? If a commercial dairy farm is converted to an estate that is kept in hay, has PACE achieved its purpose? Should public funds be used to subsidize the purchase of rural estates?

Administrators of the Massachusetts Agricultural Preservation Restriction (APR) Program have come up with an innovative strategy to keep restricted properties from being resold as estates. Since 1995, covenants imposed by the program give the state an option to purchase restricted properties at their agriculture value. The state may assign these options to farmers who wish to purchase the land. This provision is expected to deter new landowners from building estate houses or other non-agricultural structures on restricted properties, because it will prevent them from recovering the cost of their investments at resale. (See Appendix D, p. 108 for sample easement language reserving an option to purchase protected land at its agricultural value).

ISSUES TO ADDRESS IN DEVELOPING A PACE PROGRAM

ISSUES AND OPTIONS

The ability of PACE programs to achieve their objectives depends on how programs address several core issues:

- What kind of farmland to protect, which areas to target and how to set priorities?
- What restrictions to put on the use of the land?
- How much to pay for easements?
- How to raise purchase funds?
- How to distribute state funds among local jurisdictions?
- How to administer PACE programs?
- How to monitor and enforce easements?

An analysis of how current programs have addressed these issues reveals their strengths and weaknesses and offers guidance to jurisdictions contemplating the adoption or improvement of PACE programs. State and local programs have slightly different roles to play and must be evaluated accordingly.

Land use is regulated at the local—not the state—level, and local governments have the direct power to make decisions about the future of their communities. Comprehensive planning can ensure that easements are purchased in areas where agriculture is most likely to persist and thrive. Local governments may also elect to protect additional resources with PACE programs, such as scenic landscapes and wetlands. Property owners are accustomed to dealing with their local governments on land-related issues, and town and county PACE programs can

offer their residents a timely, financially competitive alternative to selling land for development. County and municipal PACE programs should be evaluated in light of how well they protect farmland at the local level, thereby effectively helping agricultural producers resist the pressures of urbanization.

In New England, state-run PACE programs have performed many of the same functions as local programs. But PACE programs in states with strong county governments perform somewhat different roles. One of these functions is to empower local communities to implement PACE programs according to their individual needs. States can use their superior financial resources to channel funds to localities, leaving counties and towns to make decisions about purchase priorities and program administration. Decentralization of decision-making allows PACE programs to be responsive to the needs of landowners at the local level. However, state governments are in a better position to determine the relative importance and vitality of agriculture in various localities and regions. Many states establish priorities and distribute funds accordingly. In fulfilling these somewhat contradictory roles, state programs must strike a balance between local control and broader statewide priorities.

DESCRIPTIVE ANALYSIS OF PACE PROGRAMS

What kind of farmland to protect, which areas to target and how to set priorities?

Few, if any, jurisdictions have enough money to purchase easements on all their farmland. Therefore, PACE programs set standards that specify what kind of farmland to protect and what priority to give individual parcels of land. Programs identify farmland protection objectives and priorities by applying criteria, identifying targeted land on maps, or both.

Typically, states establish minimum or screening criteria for farmland quality. In Pennsylvania and Maryland, the state PACE agency certifies local programs that use these guidelines. To win certification, counties must demonstrate that they have addressed the issue of land quality. In smaller states, such as Massachusetts, Connecticut and Delaware, the state PACE agency sets its own criteria for purchases.

At the local level, some jurisdictions identify specific agricultural production zones where PACE purchases will be made. These zones generally correspond to areas designated in comprehensive land use plans where agriculture is the preferred use and development is discouraged or prohibited. These local map-based approaches to establishing PACE objectives are reinforced in some states, among them Pennsylvania, Maryland and California, that require PACE purchases to be consistent with local land use plans.

The issue of setting priorities is another matter. Priority criteria are used to determine which landowners will receive the first offers to purchase easements. The predictability of receiving an offer, as determined by such criteria, often plays an important role in landowners' decisions about whether to develop or protect their land. In practice, state and local programs often use the same criteria for screening and setting priorities. An emerging trend, however, is illustrated by innovations in Delaware, where the state PACE program is using a computerized geographic information system (GIS) to establish "strategic" statewide farmland protection priorities. Other jurisdictions use point systems to select and rank applications to PACE programs. (See Appendix E, p. 111 for a sample point system for ranking PACE applications.)

Among the factors most commonly used to establish PACE objectives and priorities are:

Measures of farmland quality such as soil classification or crop yields

Soil is the basic resource of agriculture, but not all soils are equally good for farming. Most PACE programs target farms with soils that are the most productive, versatile or unique in their crop-producing capability. USDA's Natural Resources Conservation Service maintains detailed soil maps for virtually every important farming area of the nation, making it relatively simple to develop screening and priority criteria based on soil classification. Maryland, for example, requires that half the acres of PACE farms have Class I-III soils, the best in the state. Pennsylvania has a similar standard, and also requires that crop yields equal or exceed the county average. In addition, applications to Pennsylvania's PACE program are rated on the use of agricultural best management practices to control nutrients and prevent soil erosion.

Many programs at both the state and local level have point systems for determining PACE priorities in which soil capability is an important factor. Connecticut awards up to 20 points (of a possible 100) to farms with a high percentage of prime and statewide-important soils. Some programs use Land Evaluation and Site Assessment (LESA)—a numeric system of rating farmland quality—for this purpose.

Delaware used a GIS composed of a series of six data "layers" to develop the statewide Agricultural Lands Strategy Map. Each layer contains information on a different factor: soil quality, sewer availability, land use/land cover, the percentage of each area devoted to agriculture, the level of economic investment in agriculture in a given area, and the presence of important natural resources such as wetlands and wildlife habitat. Individual parcels of land were given a score for each factor, and the layers received different "weights" according to their importance; soil quality received the highest weight. Scores for each layer were multiplied by the layer weight. The layers were then superimposed, and the six separate scores for each parcel were added. The highest-scoring areas in each county appeared on the final Agricultural Lands Strategy Map in dark green. These green areas receive the highest priority for the state PACE program.

Farm size

Many states require that farms be of a certain minimum size to qualify for PACE. Maryland rarely purchases easements on farms of less than 100 acres. Pennsylvania generally will not purchase easements on less than 50 acres, although it will make an exception for farms that are at least 10 acres and are used to produce specialized crops unique to the area or are adjacent to a previously protected farm. Connecticut's scoring system for PACE applications awards more points to larger farms. California sets no minimum acreage, but its law specifies that farms must be large enough to remain economically viable. The point systems used by some states and localities to establish PACE priorities often favor larger farms, on the theory that they are the most commercially viable. Large minimum farm size may not, however, be an appropriate criterion in some urban-influenced areas, where small, intensive operations such as nurseries and vegetable farms are more profitable than extensive grain or livestock operations.

Strategic location of farms

The desirability of real estate, it is said, is determined by three key factors: location, location and location. Though the location of a farm is not the only important criterion for purposes of establishing PACE objectives and priorities, it is certainly a critical one.

Generally, states and localities protect farms that are neither too close to urban development to remain agriculturally viable nor so far from urban areas that there is little risk of their development. One of the best examples of this balancing act is the Pennsylvania PACE mandate to target "areas...devoted primarily to agricultural use where development is occurring or is likely to occur within the next 20 years[3]." Montgomery County, Md., gives preference to and pays higher prices for farms within one-quarter mile of its urban growth boundary. This guideline serves two purposes: It targets the landowners most tempted to sell land to speculators and erects a legal and economic barrier to possible water and sewer extensions into the county's designated Agricultural Reserve.

Other jurisdictions have similar approaches. For example, Connecticut gives preference to farms that are surrounded by other farms rather than subdivisions. Maryland and California state programs favor farms that are located within master-planned agricultural protection zones. Maryland, Pennsylvania and Delaware buy easements only on farms that are enrolled in an agricultural district. Many states try to buy easements on farms that are close to land already protected by PACE or conservation easements. Again, a LESA system can be used to evaluate the location as well as the quality of farmland for purposes of setting PACE priorities.

Environmental, cultural or scenic qualities: multipurpose PACE programs

Though environmental, cultural and scenic qualities of farms are not necessarily vital to farm survival, these features are often of foremost importance to the general public that pays for PACE programs. All other factors being equal, superior natural or cultural resources on a farm, such as wetlands or an historic cemetery (which an easement could protect), could make the difference in acquisition priority. Several PACE programs take such criteria into account. California, for example, considers the extent to which each proposal meets "multiple natural resource conservation objectives, including, but not limited to, wetland protection, wildlife habitat conservation and scenic open-space preservation[4]." Adams, Chester and Lancaster Counties in Pennsylvania all award points to farms that have or are adjacent to historic sites or exceptional environmental resources. Vermont has a unique multi-purpose program designed to protect farms and natural areas and provide affordable housing.

Vermont Housing and Conservation Board: protecting Vermont's quality of life

Vermont is one of the nation's most rural states. Farms and forests define its landscape, and many residents still depend on the land for their living. The state's pastoral beauty is one of its primary attractions to tourists, who spent more than $2.12 billion in Vermont in 1996[5]. During the 1980s, however, economic prosperity in New York and southern New England fueled demand for country homes in Vermont, resulting in pressure to develop farmland and forests. Houses sprang up on the edges of dairy farms along Lake Champlain and atop mountain ridges. At the same time, rising property values made it difficult for many low-income Vermonters—including farm employees—to compete in the housing market.

In 1986, a coalition of conservationists and housing advocates proposed an innovative solution to these problems: a fund that would finance low-income housing projects and protect important agricultural and resource lands. In 1987, the Vermont legislature approved the creation of the Vermont Housing and Conservation Trust Fund, stating that the "dual goals of creating affordable housing for Vermonters, and conserving and protecting Vermont's agricultural land, historic properties, important natural areas and recreational lands are of primary importance to the economic vitality and quality of life of the state[6]."

The fund is financed through general appropriations and administered by the Vermont Housing and Conservation Board (VHCB), a quasi-public agency that makes grants to state agencies, municipalities and nonprofit organizations for the purposes of providing affordable housing and purchasing easements. Between 1987 and 1996, VHCB funded the acquisition of easements on 47,000 acres of farmland, conserved an additional 45,000 acres for wildlife habitat and recreation and financed the development of affordable housing for more than 8,000 Vermonters[7].

Generally, purchases of agricultural conservation easements are made by the Vermont Department of Agriculture or the nonprofit Vermont Land Trust or Upper Valley Land Trust. Important resource lands are conserved by state natural resource agencies or The Nature Conservancy, and grants for housing projects are given to community land trusts, community development corporations and other social service organizations. Sometimes, however, a project fulfills more than one goal.

In the town of Addison, on the southeast shore of Lake Champlain, VHCB worked with the Vermont Department of Agriculture, Food and Markets, the state Department of Fish and Wildlife and The Nature Conservancy to protect more than 800 acres of farmland and wetlands. Purchases of easements on three parcels protected working dairy farms from imminent development and preserved public access to the Whitney and Hospital Creeks. In one case, the Vermont Department of Fish and Wildlife purchased buffers along the creeks in fee simple to provide public access. In another case, an agricultural conservation easement provided for public access to the creeks. All three easements in the area included a provision that prevents the landowners from selling exclusive hunting and fishing rights, thus keeping the land available for public use[8].

The use of PACE to protect water resources and wildlife habitat is an emerging trend. In 1996, New York City approved a plan to purchase easements on farms that are more than 100 miles from downtown. The city is using PACE and working with the nonprofit Watershed Agricultural Council to prevent the development of subdivisions—and polluting septic systems—in its watersheds. In central Florida's Green Swamp, PACE is protecting the scarce supplies of fresh water that lie beneath low-intensity cattle farms.

The California Agricultural Land Stewardship program, created in 1995, allows the state to make grants for land improvements on farms protected by agricultural conservation easements. Grants may be made for projects that:

- enhance the agricultural value of land protected by easements and promote long-term sustainable agricultural use, such as water supply development and revegetation of eroding streambanks;
- increase the compatibility of agricultural operations with sensitive natural areas;
- demonstrate new and innovative best management practices that have the potential for wide application;
- involve state and federal natural resource agencies; and
- are part of a coordinated watershed management plan[9].

Price of easements

Price is important in determining whether easements should be purchased from sellers and for setting priorities among competing parcels. Because it is related to the quality and location of land, price cannot be ignored in establishing objectives and priorities. Ultimately, the price paid for easements must be attractive to owners of the land that the state or community wishes to protect.

Most jurisdictions will not pay more than the appraised fair market value of easements. Generally, easements on farmland under the most intense urban pressure will carry the highest prices, while rights to land that is more remote will be less expensive. This results in a tradeoff between protecting a lot of land farther from cities and fewer acres closer to them.

Some PACE programs, including Maryland's state program and county programs in King County, Wash., and Suffolk County, N.Y., give priority to PACE applicants who are willing to discount the price of their easements. Many landowners do so to close the deal that, even at the discounted rate, can yield a significant cash return. Such "bargain sales" may also make the landowner eligible for a tax deduction.

Local commitment to farmland protection

Some state programs allocate additional funds to localities that bear some of the cost of acquiring easements. Maine gives preference to purchases involving either local government or private matching funds, and Massachusetts' APR program allows the state to consider a municipality's willingness to contribute funds in deciding whether to make an offer.

Pennsylvania and New Jersey both require local governments to bear part of the cost of purchasing easements within their jurisdictions, and New Jersey gives extra weight to PACE applications in communities where the local government has policies and programs to protect farmland.

To determine its funding priorities, the California PACE program measures the level of local commitment to farmland protection as evidenced by:

1. The general plan and related land use policies of the city or county;
2. Policies of the Local Agency Formation Commission (see glossary);
3. California Environmental Quality Act policies and procedures;
4. The existence of active local agricultural land conservancies or trusts;
5. The use of an effective right-to-farm ordinance;
6. Applied strategies for the economic support and enhancement of agricultural enterprise; and
7. Other relevant policies and programs[10].

California's approach helps integrate PACE with other farmland protection techniques.

Other factors

Though location plays a critical role in whether farmland will be developed, other factors contribute to the risk, such as the tenure of the land and the financial circumstances of the landowners. Harford County, Md., awards extra points to PACE applications from full-time farmers who own their land. In Adams County, Pa., PACE applicants receive points for duration of farm ownership—the longer the farm has been in the family, the higher priority it receives. Farm families that derive a majority of their income from agriculture also receive extra points. Montgomery County, Md., pays more for easements on farms owned by families that earn income from agriculture. These criteria are designed to target PACE funds to family farm operations.

Connecticut has a scoring system for PACE applications that awards points to farms that are being offered for sale on the open market or are in estate probate. New Jersey also awards points for financial hardship. Many local PACE programs are administered by directors or boards composed largely of farmers who are very familiar with the agricultural community and apply an informal "needs" test in determining who shall receive first priority in selling easements. Care must be exercised in such circumstances to ensure that personality conflicts and politics do not prejudice the selection process and undermine the program's credibility.

A few PACE programs give priority to farmers who use good stewardship practices. Adams, Chester and Lancaster Counties in Pennsylvania and Harford County, Md., give credit to applicants who have an approved conservation plan.

Private land conservation organizations often "pre-acquire" farms on the open market, with the intention of reselling easements to a PACE program and the land to another farmer. While farms owned by land trusts are not generally at high risk for development, Pennsylvania and California laws explicitly stipulate that ownership by a private land trust does not disqualify land from PACE programs, and Vermont's PACE program works closely with land trusts. These and other states encourage private organizations to work with landowners who might not be willing to sell an easement to a government agency or who need to sell an easement more quickly than a public program could act.

What restrictions to put on the use of land?

Agricultural conservation easements restrict non-farm uses such as residential subdivisions and commercial development. Most jurisdictions, including Maryland, New Jersey and Pennsylvania, allow subdivision of land for agricultural purposes, subject to some controls to ensure that the land will continue to be viable for commercial farming.

Some jurisdictions, including Maryland, Delaware and Pennsylvania, allow lots to be created for employee housing or children of the current owner, to help perpetuate the farming operation. Typically, these lots must be small (one to two acres is common), located on the least productive soils and otherwise pose minimal interference with agricultural operations. Massachusetts, in contrast, requires landowners to separate existing residences and any reserved building lots from land they enroll, to make protected farms less attractive as potential rural estates and to ensure that land will remain affordable to farmers. Suffolk County, N.Y., recommends that landowners reserve a building lot for future residential construction.

The Marin Agricultural Land Trust in Marin County, Calif., also allows landowners to reserve a building site on properties with easements. During the 1980s, King County, Wash., allowed landowners to reserve the right to develop houses on their properties. The price that they received for easements was reduced according to the value of the reserved lots. Since the sales were made, luxury houses have been constructed on several properties enrolled in the PACE program. At least 10 parcels, encompassing approximately 890 acres, have been subdivided[11].

Many programs permit commercial development related to the farming operation on protected land. Connecticut allows the construction of "buildings for animals, roadside stands and farm markets for sale to the consumer of food products and ornamental plants, facilities for the storing of equipment and products or processing thereof..." Massachusetts allows the construction of permanent structures for agriculturally related retail sales with prior written approval. California's PACE legislation states that easements shall not prevent the construction and use of structures necessary for agricultural production and marketing, including barns, machine shops, packing sheds, cooling facilities, greenhouses, roadside stands, livestock watering facilities, energy generation equipment and fencing, provided that the agricultural productivity of the land is not impaired. Easements may also provide for housing for farm employees and farm family members[12].

In contrast, Suffolk County, N.Y., strictly limits commercial structures. Farmstands are permitted, provided they are no larger than 500 square feet, are designed for seasonal use and

are used primarily to sell products grown on the property[13]. Requests to build greenhouses are addressed on an individual basis[14]. In general, temporary greenhouses that can be easily disassembled are permitted, while those that require permanent foundations are prohibited.

If commercial uses are permitted on protected land, programs must be careful that the location, size and appearance of agricultural structures do not undermine public support of the PACE program by marring the beauty of the countryside or posing a nuisance to neighbors. When Connecticut allowed a large poultry production house to be built on one of the first farms it protected, its PACE program was set back several years by legal and political controversy.

Problems have also arisen from the construction of extensive equestrian facilities on farms protected by PACE. New Jersey permits barns, tracks and riding rings as an adjunct use to horse breeding facilities. Polo grounds are allowed as a non-commercial recreational use as long as the land remains available for agriculture. Permanent polo facilities such as grandstands and lights are prohibited[15]. In Southampton, N.Y., a state court rejected a request to construct a polo facility on land protected by Suffolk County's PACE program. The easement limited use of the land to agricultural production. The judge who decided the case found that "the breeding of horses for purposes other than actual sale is not agricultural production[16]."

When considering which commercial activities to allow, PACE programs need to strike a balance between allowing farmers to adapt their operations to be profitable and protecting properties from development that would compromise farming or make the land unaffordable for other farmers to purchase in the future. King County, Wash., addressed the issue of commercial uses by prohibiting landowners from covering more than 5 percent of their properties with non-tillable surfaces.

Most PACE programs do not restrict farming operations, although some require landowners to implement a soil and water conservation plan. Generally, there are two schools of thought on requiring soil and water conservation on farmland protected by PACE. One view is conservation should not be mandatory, since landowners can be trusted to take care of the land once it is restricted to farming, because its agricultural potential will decline if the soil is allowed to erode. The other view holds that if landowners can indeed be expected to take adequate care of the land, they should have no objection to demonstrating that they have implemented a conservation plan. Landowners who receive federal funds under the Farmland Protection Program must comply with a conservation plan, including less intensive use of highly erodible land.

Some jurisdictions offer at least the option of restricting farming activities to protect or provide public access to environmental amenities. For example, Montgomery County, Md., pays landowners an incentive bonus on top of the PACE purchase price if they agree to implement a conservation plan.

In 1996, the Vermont Housing and Conservation Board adopted guidelines for establishing buffer strips on farms protected by PACE. The guidelines define buffers as "corridors of land between a readily defined natural feature, such as the top bank of a waterway, and land uses, such as agriculture, that disturb naturally occurring vegetation[17]."

VHCB will not agree to accept buffer provisions in an agricultral conservation easement unless another agency or organization with resource management expertise will co-hold the easement. Buffers may be used "when current or potential land uses on the farm property could harm habitat and natural processes that are considered to be especially significant," such as waters that have been designated as Outstanding Water Resources by the state or critical habitat for fish or wildlife species, as determined by the Commissioner of Fish and Wildlife[18].

VHCB buffer easements must include a buffer management plan, which may describe broad resource protection goals, but may not dictate specific farming practices. Management plans should be funded by and prepared in cooperation with a natural resource agency or private conservation organization, such as the state department of fish and wildlife or The Nature Conservancy. VHCB guidelines explicitly state that acceptance of buffer easements should be voluntary, and that conservation organizations and state agencies should not imply that landowners must accept a buffer provision as a condition of selling an agricultural conservation easement[19]. The restrictions imposed by buffers will be taken into account when the value of a property is appraised. VHCB will pay for any decreases in agricultural values that result from buffers under the new policy[20].

In general, the type and degree of restrictions imposed by a PACE easement are likely to be reflected in the purchase price. Any permitted non-farm development should reduce the price paid for the easement, while limitations on agricultural use and permission for public access can be expected to increase the purchase price.

Valuation of easements

Easement prices can influence the kind of farmland that is protected and its priority. But prices are also important because public accountability requires that government agencies not overpay for easements. In practice, prices range from as little as $425 per acre in remote areas of Vermont to up to $10,000 per acre in Massachusetts and as much as $20,000 per acre in New York's Suffolk County. The Vermont Housing and Conservation Board will not pay more than $975 per acre, with a per-project cap of $250,000. If a farm easement is worth more than $250,000, VHCB may buy it in stages over several years. Private foundations also contribute to easement purchases.

The price of easements has historically been determined through professional appraisals. The value of the easement is typically the difference between the appraised fair market value of the property before and after restrictions on nonagricultural land use are imposed by the easement. The theory is that landowners should receive the same return on farming the land and investing the proceeds of the sale of the easement as they would from simply selling the property for development. The IRS requires the use of appraisals to determine the value of conservation easements that can be deducted from income and estate taxes.

Appraisals appear to have worked reasonably well for most jurisdictions operating PACE programs, but may have resulted in the loss of some farms that state or local governments would have liked to protect. Appraisals take a long time, often six months or more. They also tend to be expensive—appraisals for the Massachusetts APR program generally range from $2,400 to $5,000[21], appraisals in Vermont range from $1,800 to $2,000[22].

They are subjective and therefore open to legitimate question. Many programs either require or allow more than one appraisal, with the final offer reflecting an average or some other negotiated price. Doing multiple appraisals compounds their cost—landowners usually pay for the second opinion—and extends the time consumed by the process.

The nature of the before-and-after appraisal method also creates a dilemma for PACE program managers: in general, the better the farm, the lower the easement value. The problem is that appraisals measure what developers are willing to pay for farmland, not what farms are worth to society. Consider two farms of the same size in similar areas—an overgrown, run-down farm with poor soils and few agricultural improvements, and a well-maintained farm with prime soils, a new barn and processing building, a machine shop and a manure pit. Common sense says that society should pay more to protect the second farm. But using the before-and-after appraisal method would probably result in a higher easement value on the first farm for two reasons. First, farmers would be willing to pay more for the second farm than the first. The "after" value of this farm would thus be higher, reducing the difference between restricted and fair market value. Second, the improvements on the second farm are worth a lot to a farmer, but they're a nuisance to a developer—few homeowners want industrial buildings and a manure pit in their backyard. So the two farms are at best equal in terms of fair market value.

Finally, appraisals tend to result in higher prices for easements in high-development areas where farms have the lowest chance of survival. Yet where development pressure is severe, PACE may work best when combined with agricultural protection zoning. APZ can stabilize land use, protecting those who sell easements from conflicts with neighbors and giving the community time to acquire easements over a large amount of farmland. Logically, higher prices for easements should be paid in areas protected by zoning to compensate for the reduction in the development value of land that it causes. But the appraisal method does just the opposite, because agricultural protection zoning often depresses the market value of farmland.

The problems with appraisals have led some jurisdictions to experiment with other methods of valuing easements. Among the most interesting is the point system developed by Montgomery County, Md. The Montgomery County program values an easement based on the characteristics of the farm that make it desirable for development, and on the agricultural and scenic values that it provides. Though many jurisdictions use point systems to determine PACE priorities, Montgomery County was the first to convert points directly into dollars, translating farm acreage, prime soils, crop value, road frontage, use of conservation practices and proximity to the edge of the county's Agricultural Reserve boundary directly into the purchase price through a formula. Offering prices range from approximately $1,200 per acre for small tracts of remote, relatively poor land to more than $4,000 per acre for large farms with good soils near the suburban fringe.

Montgomery County's point system is popular with both landowners and elected officials. As a double check, the price range is periodically compared with sample appraisals. Another advantage of this method is that it is very efficient: Since all the point factors are readily determinable from maps and a site visit, putting a price tag on an easement takes very little time and costs much less than an appraisal (see Appendix F, p. 116 for a sample easement valuation form). Harford and Howard Counties in Maryland and San Juan County, Wash., also

use point systems to value easements. The San Juan County Land Bank adopted the system for its PACE program in 1996, although it continues to use appraisals to value easements on coastal properties and land within urbanized areas.

Methods of payment

Landowners are generally paid for easements in a single cash lump sum at settlement. However, some landowners are concerned about the high capital gains tax they would owe as a result of the transaction. In addition, banks will often require farmers to use the proceeds from sale of an easement to pay off their mortgages. Occasionally, a farm family may find that they actually owe more money in taxes than they have available in cash after the sale. To accommodate the needs of landowners, some states, including Connecticut, Kentucky, Maryland, New Jersey and Pennsylvania, offer installment payments over a period of between three and 40 years. Installment payments can help agencies leverage their available funds by entering into more transactions. This can be important to the success of a PACE program in locations where development pressure is severe. However, programs must be assured of future cash flow to fulfill the installment payment commitments they have made.

Howard County, Md., finances its installment purchase PACE program by offering landowners "securitizable contracts" in payment for easements. These financial instruments provide for annual, tax-exempt interest payments with the principal amount due in 30 years. At any time, the landowner can convert the contract into a security (similar to a bond) that can be sold on the open market to recover the principal amount, that then becomes taxable. The county funds the program by purchasing zero-coupon bonds payable in 30 years at approximately 10 cents on the dollar—thus affording it significant financial leverage—while fulfilling annual payment obligations with a dedicated 1/4-percent tax on all real estate transactions in the county. Several other jurisdictions, including Harford County, Md., Mercer and Burlington counties in New Jersey, Virginia Beach, Va., and Southampton, N.Y., use this method.

Franklin Land Trust Installment Loan Forgiveness Program

In states that do not offer an installment purchase option, a land trust may be able to negotiate flexible easement payment terms. The Franklin Land Trust in western Massachusetts has developed a creative twist on installment purchase of easements. The land trust essentially negotiates deals in which farmers agree to sell easements and continue farming in exchange for debt forgiveness. This strategy is useful only for farmers who have mortgages on their land. The installment forgiveness program offers substantial benefits to the farmer, the land trust and the public. The farmer saves a significant amount of money on taxes. The land trust benefits from positive publicity. And the public benefits because the land stays in active farming. The contract allows the farmer to end the agreement at any time if he wants to stop farming. Ending the agreement, however, requires the land trust to forgive the entire mortgage immediately, leaving the farmer with a large tax bill. This is a strong incentive for the farmer to keep the land in active agricultural use.

Yet another method of "paying" for easements is to persuade sellers to discount the price. As discussed above, several jurisdictions do this by according higher priority to discounted purchases. Others educate landowners about the federal income and estate tax benefits of bargain sales. The value of any price discount that is not offered in exchange for a higher purchase priority is deductible as a charitable contribution in the year of the transaction, subject to a limit of 30 percent of the landowner's adjusted gross income. If not fully used to offset that year's taxes, the value can be carried forward to reduce taxes in each of the following five years.

How to raise PACE funds?

There is no magic way to raise funds for PACE. "Whatever works" is the rule. The most common approaches are annual appropriations and bonds. Maryland uses real estate transfer taxes. Other jurisdictions have found creative sources of funding, including property taxes, private contributions, matching funds and special-purpose taxes.

General obligation and special purpose bonds

Bond funding often offers the advantage of ensuring a predictable flow of funds for several years. Bonds can be authorized directly by the appropriate legislative authority, as in Massachusetts and Connecticut, or by voter referendum, which has been the practice in New Jersey, California, and King County, Wash. Particularly in the case of new PACE programs, referenda give elected officials the comfort of knowing that the public supports farmland protection. For example, the Pennsylvania legislature put a $100 million bond issue to public referendum before the legislature voted on the issue. These referenda often pass with a 60 percent or greater margin, but this is not always the case. In King County, Wash., voters turned down two bond issues to fund PACE before the program was finally approved in 1979. The county continues to have trouble convincing voters to pay for PACE: An open space bond which included funding for farmland protection was defeated in 1996.

Annual appropriations

Vermont and several Pennsylvania counties authorize expenditures on PACE from general or discretionary funds. The pay-as-you-go system has the drawback of uncertainty from year to year, which is problematic for farmers who intend to sell easements as part of their long-term financial plans.

Real estate transfer taxes

Maryland is the leading state using real estate transfer taxes to fund PACE. Revenues generated by a 1/2-percent tax on the value of all real estate transfers are divided between parkland acquisition and farmland protection. Maryland has an additional conversion tax on land that is removed from agricultural production, which ranges from 3 percent to 5 percent of the sale price, depending on the type and condition of the property. Conversion tax revenues are devoted exclusively to PACE. Howard and Harford Counties have their own real estate transfer taxes. Michigan also has a conversion tax that was previously used for parks but which will now be dedicated to a new PACE program. An advantage of this approach is that

the level of funding varies directly with development pressure, increasing when landowners are most tempted to sell but declining when the real estate market cools.

Dedicated increment of property taxes

A growing number of local jurisdictions are funding PACE with a dedicated increase in property taxes. In 1994, voters in Peninsula Township, Mich., agreed to a $1.25 per $1000 in assessed value property tax levy for a 15-year period. Virginia Beach, Va., voters approved a 1.5-cent increase in local taxes to fund PACE. Thurston County, Wash., was already using revenues from an optional local tax of 6.5 cents per thousand to fund open space acquisition when a PACE program was approved in 1996. Revenues from the tax are now being shared between parks and the new PACE program.

Private contributions

Private land trusts sometimes contribute toward the purchase of agricultural conservation easements. Vermont's state PACE program makes the most of its easement purchases through grants to land trusts, which have been very successful in raising matching funds from private foundations. The Vermont Land Trust receives an average of two dollars in private contributions for every dollar it receives from the VHCB[23]. In 1996, the average purchase price of agricultural conservation easements in Vermont was $747 per acre, but the average cost to VHCB was only $551 per acre[24]. Marin Agricultural Land Trust in California also uses a combination of public and private funding sources.

Matching funds

Many state PACE programs require local jurisdictions to contribute part of the purchase price. In Maryland, for example, the cost is split 60 percent state, 40 percent county. In Pennsylvania, the percentage of the local share varies with the significance of local agriculture to the state. Counties with high annual farm commodity sales have to put up less money for every dollar in state PACE funds, thus deliberately targeting state funds to these counties. The New Jersey program will not pay more than 80 percent of the fair market value of an easement or the actual easement purchase price, whichever is lower. The actual cost sharing formula for any particular easement purchase depends on the landowner's asking price. The difference between the state contribution and the easement value must be made up from county or township funds or by a donation from the landowner.

Matching requirements leverage state PACE funds and encourage local governments to invest in farmland protection. Maryland and Pennsylvania, the two states that have protected the most farmland with PACE, both require local governments to bear part of the cost of protecting farms.

Federal funding

The 1996 Farm Bill passed by Congress authorizes the U.S. Department of Agriculture to provide $35 million over six years in farmland protection matching grants to states and localities that have obtained state approval to purchase easements. In 1996, 13 state and 24

local PACE programs received a total of $14,325,000 in federal matching funds[25]. The Massachusetts APR program received $500,000 in federal matching funds through the Intermodal Surface Transportation Act (ISTEA) in 1996. The funds are dedicated to purchasing restrictions on farms along scenic roads in the Connecticut River corridor.

In Vermont, the VHCB has used the federal Debt-for-Easements program as a funding mechanism for PACE. Under the program, a farmer's debt owed to the federal Rural Economic and Community Development Administration may be canceled in exchange for donation of a conservation easement to VHCB and/or the nonprofit Vermont Land Trust. At least three Vermont farms have been protected through this program to date[26]. Easements negotiated through this program, however, prohibit almost all agricultural activities—land may occasionally be used for pasture or hay. For this reason, the Debt-for-Easements program is not a viable option for most farmers.

Other sources

The potential sources of funding for PACE are limited only by imagination and politics. Pennsylvania uses a cigarette surtax; Sonoma County, Calif., has a dedicated local sales tax; Solano County, Calif., created a special tax district, and Virginia Beach, Va., raises money for PACE from a cellular phone tax. The city of Davis, Calif., makes developers pay for PACE through a unique farmland mitigation program. Maine has a state-sponsored credit card that raises money to acquire important natural resource lands. In Michigan, farmers who are enrolled in the state circuit-breaker tax relief program may be required to pay back taxes if they convert their land from agriculture. These funds are dedicated to PACE. Regardless of the source, if a PACE program does not have reliable funding, landowners cannot incorporate the sale of easements into their long-term financial planning. This detracts from the ability to offer landowners a competitive alternative to development when they need it.

How to distribute PACE funds?

The distribution of funds among and within local jurisdictions is an important issue for state PACE programs, as well as for counties that distribute PACE funds to towns or townships. Generally, a tradeoff must be made between targeting limited funds to protect the most important farmland—which is usually concentrated in just a few localities—and spreading them around for political reasons, to ensure that a broad constituency for program funding will continue to exist.

When Pennsylvania implemented its PACE program in 1988, it faced the challenge of distributing funds among 67 counties, six of which—Adams, Berks, Chester, Cumberland, Lancaster and York—account for 42 percent of the state's agricultural production and much of the farmland under urban pressure. It created a computerized formula that is used to distribute PACE funds among counties at the beginning of each year on the basis of real estate activity and value of farm products sold in each county. The formula also accounted for county matching funds as an indication of local commitment to protecting farmland. This system resulted in the concentration of funds in the six counties where farmland protection was of most critical concern, while enabling more than 20 other counties to have a piece of the pie. As more counties became interested in PACE, however, the distribution formula was changed to spread funds more evenly across the state.

Maryland splits total PACE funds in half and divides one half equally among its 23 counties. The other half is allotted to those counties that put up matching funds in proportion to their respective contributions. In both Pennsylvania and Maryland, state funds allocated to counties but not used by them to purchase easements go back into the funding pool for redistribution among counties that are actively pursuing PACE. In Maryland, counties that run their own PACE programs may receive 75 percent of the proceeds of the 3- to 5-percent conversion tax on farms that are developed within their jurisdictions. This tends to concentrate funds in fast growing counties in the Piedmont—as did the matching fund formula—rather than the agriculturally more important but slower-growing Eastern Shore.

How to administer PACE programs and enforce easements?

Addressing all the questions that arise in the administration of PACE programs is beyond the scope of this publication, but several issues stand out.

Governing structure

Effective governing structures must be efficient, yet reflect the broad political constituency necessary to maintain support for a PACE program over time. In most states and localities, ultimate decision-making authority rests with a politically appointed board or committee composed of public officials and representatives of the agricultural community. A salaried program administrator, usually employed by the agency responsible for agriculture, oversees day-to-day program operations. In states like Pennsylvania and New Jersey, where counties have a greater role in the PACE programs, many administrative functions are delegated to local boards and administrators. Active state PACE programs commonly employ one to four full-time staff people; local programs may not have their own dedicated staff, but generally require the equivalent of at least one full-time position.

Legal documentation and formalities

Because easement purchases transfer titles to interests in real property, they must be legally sound. Most important, the deed must spell out clearly the rights and responsibilities of the landowner and easement holder. Programs must require a title search to discover defects that could render the deed unenforceable, and the deed must be recorded formally in the appropriate local land records.

Where bonding is used to raise funds, state law must be followed to ensure that funding is secure. The King County, Wash., program suffered an early setback when program detractors challenged the procedure used to issue its initial bonds in court on a technicality. As a result, program administrators had only three years to make acquisitions before a sunset clause took effect.

Monitoring and enforcement

Agricultural conservation easements are only as effective at protecting farmland as the effort used to enforce the restrictions they impose on the use of land. A systematic monitoring program is essential. Enforcement responsibility, however, can repose in either the state or community, or both. In Pennsylvania, this responsibility is delegated to local program administrators, who visit protected properties to observe whether development or other restricted uses have occurred. Program administrators typically oversee the development of lots for family members and farm employees that are permitted by some PACE programs. The state attorney general is usually given responsibility for enforcing state-held easements, which can be an advantage because local officials may be under more peer pressure to be lenient with friends and neighbors. In Vermont, private, nonprofit land trusts monitor easements[27].

Monitoring and enforcing easements over time requires a long-term commitment. This commitment must be maintained even if the program is no longer acquiring easements. Restricted properties change hands over time, and new owners may be unfamiliar with the provisions of the original covenant, or even unaware of its existence. Local government officials such as building inspectors, assessors and members of planning and zoning boards must also be reminded of the existence of easements to ensure that they do not approve inappropriate development on restricted properties.

King County, Wash., stopped acquiring easements in 1987, and program staff were assigned to other projects. In 1991, a county audit concluded that "monitoring of the Farmland Preservation Program properties was inadequate to provide reasonable assurance that the easements acquired under the program would be effectively preserved[28]." As a result of the auditor's findings, King County hired someone to monitor easements. The cost of this function in 1997 was $55,000.

Termination of easements

Most easements purchased through PACE programs are intended to be permanent, but the programs generally outline a set of conditions under which easements may be terminated and a process for doing so. In California, Delaware, Maryland and Pennsylvania, landowners must wait at least 25 years before requesting that an easement be terminated. In each of these states, the local governing body in the area where the farm is located must hold a public hearing on easement termination. One important condition for termination is a local government finding that profitable farming is no longer possible on the land.

In Connecticut, easements may be terminated with approval of the Commissioner of Agriculture and by popular vote in the town where the property is located. Other programs make provisions for terminating easements when agriculture is no longer a feasible use of the land. In Massachusetts, a two-thirds vote of both houses of the state legislature is required to terminate easements for the public good. All PACE programs require landowners to repay the difference between agricultural value and fair market value at the time the easement is terminated. In Delaware, owners must also repay any real estate transfer taxes and gift and death taxes saved while the land was under easement.

In 1996, Forsyth County, N.C., began negotiating to sell an easement back to one of the landowners in the PACE program. The easement on the 67-acre tobacco farm was purchased in 1988, when most of the surrounding land was in agricultural use. By the mid-1990s, the farm was largely surrounded by houses. The remaining farmland was under option to developers, and the farmer could no longer lease enough land to operate his farm economically. NRCS District Conservationist Michael Washington guesses that there are probably four other parcels restricted by agricultural conservation easements, encompassing approximately 150 acres, that are likely to become "landlocked" by development. He reflects, "If we had it to do over again, I would have bought [easements on] blocks of land in one place, instead of scattered here and there[29]." Forsyth County's experience is a stark reminder of why state and local governments need to take a strategic approach to protecting farmland.

RELATIONSHIP BETWEEN PACE AND OTHER FARMLAND PROTECTION STRATEGIES

PACE AND AGRICULTURAL PROTECTION ZONING

Because PACE is generally popular with farmers and non-farmers alike, it can build political support for agricultural protection zoning. APZ, when combined with PACE, can improve the odds of protecting enough local farmland to perpetuate agriculture. Because it requires no public expenditure, zoning can stabilize farmland use over a wider area far more quickly than PACE. But zoning regulations tend to reduce land values without compensation, so landowners bear the entire cost of protecting the land. For this reason, zoning is often opposed by farmers and others with an investment in farmland. By investing in agriculture through PACE, local governments may help overcome this initial resistance to zoning. And, as more and more farmland is permanently protected by PACE, the landowner constituency for maintaining agricultural zoning may expand, making it less likely that it will be repealed or weakened.

Yet APZ can also cause problems for PACE administrators. If downzoning reduces the market value of farmland, appraisals will result in lower easement prices, thereby reducing the incentive for farmers to participate in the PACE program. One solution to this problem is for communities to use a point system to measure the agricultural value of farmland, rather than appraisals, which measure the value of land for development.

PACE AND AGRICULTURAL DISTRICTS

In Maryland, Pennsylvania and Delaware, farmland owners must enroll their property in a state-approved agricultural district in order to be eligible for PACE. This requirement accomplishes several purposes. First, it gives farmers a strong incentive to form agricultural districts. Second, it increases the likelihood that protected farms will be located in an area where agriculture is economically viable. Finally, it limits development on farms while the landowners are waiting to sell easements.

PACE AND TRANSFER OF DEVELOPMENT RIGHTS

Transfer of development rights programs are similar to PACE in that they result in permanent conservation easements on farmland, but TDR transactions generally take place between private parties. A few jurisdictions have "TDR banks," which buy development rights in the same way that PACE programs purchase easements, but the banks have the authority to resell the development rights to other landowners.

A few counties, including Montgomery County, Md., and Thurston County, Wash., have both PACE and TDR programs. Montgomery County recently began banking the development rights it purchases from landowners through the PACE program. It does not yet have permission to sell these rights, but it may obtain this authority in the future. Thurston County is purchasing easements on farmland that provides environmental and open space values, while relying on TDR to protect other important agricultural land.

OBSERVATIONS

PACE has some important advantages over other farmland protection techniques. The programs protect farms permanently, and they are popular with farmers because they are voluntary and provide compensation. They generally enjoy broad community support and offer an opportunity for cooperation between state and local governments and private organizations. Increasingly, PACE is being used to protect important natural resources such as watersheds and wildlife habitat, creating a win-win situation for agriculture and the environment.

Yet the future of PACE programs will depend in large measure on how successfully they can address their most serious shortcomings: high public cost and the slow pace of acquisitions. As urban growth accelerates, PACE is even less likely to keep up with development pressure. The result may be "patchwork" patterns of protected farmland. These scattered blocks of land may become islands of open space among sprawling subdivisions, making it difficult for commercial farming operations to survive. Some people fear that farmland under easement may become a magnet for adjacent development because it is permanently protected open space.

The high cost and slow momentum of PACE programs bespeak a need for several policy innovations: becoming more deliberate and strategic about setting qualitative and quantitative farmland protection objectives; giving PACE time to work by employing other policy tools like agricultural protection zoning to stabilize agricultural land use; and making PACE more competitive in time and price by modifying or abandoning the appraisal approach to valuation. Finally, funding for PACE must increase and become more predictable.

For more information on farmland protection, contact the Farmland Information Center at http://www.farmlandinfo.org or call (413) 586-4593.

APPENDIX D: MASSACHUSETTS OPTION TO PURCHASE PROTECTED LAND AT AGRICULTURAL VALUE

APPENDICES

We, _____ (the "Grantors") for good and valuable consideration, receipt of which is hereby acknowledged, do hereby grant an option to Purchase Real Estate at Agricultural Value ("Option" to the Department of Food and Agriculture with the address of 100 Cambridge Street, Boston, Massachusetts, its successors and assigns (the "Grantee") for the purchase of land located at _____Street, _____, _____ County, Massachusetts described in Exhibit A of this Instrument (the "Premises").

The intent of this Option is to ensure that the Premises remains affordable for agricultural production and that its market value for other uses does not preclude its profitable use for agriculture. It is understood that this Option shall constitute a restriction that runs with the land and is binding in the event of a foreclosure on said Premises.

A. The Grantors agree that no sale of the Premises to any third party will occur without first offering to sell the Premises to the Grantee for a price (the "Offering Price") which shall be the greater of:

1) a) the full and fair market value of the Premises for commercial agricultural production, (plus the value of any improvements), as determined by an impartial appraisal which shall be conducted at the election of the Grantors and paid for by the Grantors; or
b) an amount equal to the agricultural value of the Premises as determined by the appraisal relied upon for the acquisition of this APR, which sum shall then be multiplied by the Inflation Rate, (plus the value of any improvements as determined by an independent appraiser), hereinafter defined. The Inflation Rate shall be equal to 1 plus the fractional increase for all Urban Consumers, Boston, All Items (1982-1984 equals 100) published by the Bureau of Labor Statistics, United States Department of Labor, or successor index published by the United States government appropriately correlated to the prior index by a published conversion factor, where indicated, from June 1, 1993 to the date of offer. At no time shall the fair market value be below_____, which is the agricultural value of the Premises at the time of the acquisition of the Agricultural Preservation Restriction; or

2) Where the bona fide offer is less than the greater of the two amounts determined by the procedures set forth in A(1) (a) and A(1) (b), then the Grantor agrees to offer to sell the Premises to the Grantee for this lesser amount.

3) In the event of an approved subdivision, recording of a subdivision plan, partition, or any other division of the Premises, or any portion thereof into two or more parcels, the offering price shall be determined pursuant to paragraph A(1) above.

4) All appraisals conducted for the purposes of this Option shall be conducted in accordance with the "Guidelines for Agricultural Appraisals" prepared by the Department as in effect at such time.

B. Any offer made by the Grantors to the Grantee pursuant to this agreement shall be carried out in accordance with the following procedures:

1) The Grantors shall provide to the Grantee: a) written notice ("Notice") stating their intent to sell the Premises; and b) a true, correct and complete copy of a bona fide offer from a third party to purchase the Premises.

2) Upon receipt of this notice, the Grantee shall have 120 days to notify the Grantor of its election to purchase the Premises for the Offering Price in accordance with said offer. The Grantor shall be notified of this election or waiver of the Option by written notice.

C. In the event that the Grantee elects to purchase the Premises, the deed shall be delivered and the consideration paid at the _____ County Registry of Deeds at 9 o'clock a.m. on the one hundred twentieth (120) day after the date of receipt by the Grantors of the notice of election to purchase or, if a Saturday, Sunday or holiday, on the next business day thereafter, and the deed shall convey a good and clear record and merchantable title to the Premises free of all encumbrances, and the Premises shall be in the same condition as it was at the time of the acceptance of such Offer, reasonable wear and tear and use thereof excepted. The date and time of the transfer may be amended by written mutual agreement of the parties.

D. The Grantor may sell the Premises, within one (1) year of the date of the Grantee's receipt of Notice, to the purchaser who has made a bona fide offer referred to in paragraph B(1) above, only in the event that the Grantee:

1) declines in writing to elect its Option within the specified time period; or

2) fails to waive its Option in writing within the specified time period; or

3) having elected its Option, fails to complete the purchase within the specified time period.

E. The obligations of the Grantor under this Option shall not apply where the transfer of ownership of the Premises will be a result of:

1) a gift for nominal consideration to the Grantor's spouse, parent, children, or grandchildren (whether by blood, marriage, or adoption), siblings and/or their children or grandchildren (whether by blood, marriage, or adoption);

2) the devise (or conveyance) of said Premises by the will or intestacy of the Grantor, their heirs, successors or assigns:

3) any sale of the Premises to a partner of the Grantor who is physically engaged in the day-to-day agricultural operation of the Premises.

F. Any notices required by this Option shall be in writing and shall be deemed delivered if delivered in hand or mailed, postage prepaid by certified or registered mail return receipt requested, addressed in the case of the Grantor to such address as may be specified in the Notice or if none, then to the Premises, and in the case of the Grantee, to the Department of Food and Agriculture, Chief, Bureau of Land Use, 100 Cambridge Street, Boston, MA 02202.

G. The Grantee may assign its Option at any time after providing the Grantor notice of its election to exercise its option in accordance with the terms of paragraph B(2) above, provided that the Option may only be assigned to a party which, in the Grantee's opinion, will use or facilitate the use of, the Premises for commercial agricultural production. Any assignment shall only be effective when made in writing, signed by the Commissioner of Food and Agriculture, and duly recorded with the appropriate registry of deeds.

H. Any waiver of the Grantee's option shall be in writing, signed by the Commissioner of Food and Agriculture, and in a form and format suitable for recording in the registry of deeds. This waiver shall serve to satisfy the Grantors' obligations under this Option to the Grantee with regard to the named buyer only.

I. The rights and obligations of each Grantor hereunder shall inure to and be binding upon the Grantor and the Grantors' heirs, legal representatives, successors in title and assigns. This instrument is not a deed. It does not purport to transfer a fee interest to the Grantee. No Massachusetts deed excise stamps are affixed hereto as none are required by General Laws c. 64D, Section 1, as amended.

WITNESS the execution hereof under seal this _____day of _____, 1996.

_____ _____

APPENDIX E: BURLINGTON COUNTY, NEW JERSEY CRITERIA AND FORMULA FOR RANKING PACE APPLICATIONS

REVISED CRITERIA - EASEMENT PURCHASE 1994

100 Point Scale

The evaluation of each easement purchase application shall be based on the merits of the individual application. Each application in turn contributes to the overall rank of the Project Area in which it is located. The weight factor assigned to each criterion indicates the relative importance of the specific criterion in relation to the other criteria.

The criteria listed below shall be combined to determine the degree to which the purchase would encourage the survivability of the project area in productive agriculture.

Priority will be given to soils which exhibit superior quality, require minimal maintenance and have a greater potential for long term viability for a variety of agricultural purposes. Factors to be considered are as follows:

A. Soils - weight 20
1. Land Capability System identified by the U.S.D.A., Natural Resources Conservation Service
2. Implementation of soil and water conservation measures.

Formula:

% Class I	x 40
% Class II*	x 25
% Class II	x 15
% Class III*	x 10
% Class III	x 05

Total weight = the sum of the categories.

* Submission of an approved conservation plan is required. The acreage which has soil and water conservation measures installed to overcome their limitations may use this category. The presence of conservation measures will be determined by verification of implementation of the approved conservation plan.

B. Soils - weight 15
1. Important Farmland Soils identified by the U.S.D.A., Natural Resources Conservation Service.

Formula:

% Prime	x 15
% SWI	x 10
% Local	x 05

Total weight = the sum of the categories.

C. Percent Tillable - weight 15
This criterion is added in order to more clearly identify those farms that are highly productive. It is believed that the lands that are currently available for production are often the only lands suitable for production. Whereas the soil criterion allocates points for the entire premises, this category only evaluates the land in production.

*Soil tests must be submitted and satisfactory pH, potassium and phosphorus levels noted.

Formula:

80% - 100% tillable	*15 or 12.5 points
60% - 79% tillable	*10 or 07.5
50% - 59% tillable	*05 or 02.5
49% tillable	0

D. Septic Limitations - weight 05
This criterion is included to evaluate the relative development potential of the applicant farm.

% Soils classified as slight limitation x 05
% Soils classified as moderate limitation x 02

Total weight = the sum of the categories.

E. Boundaries and Buffer - weight 20
Priority will be given to the greatest proportion of boundaries with buffers, which help protect the integrity of the individual application and/or project area from conflicting nonagricultural uses.

The following weights have been assigned to the factors to be considered.

A. Deed restricted farmland (permanent)	20 points
B. Restricted wildlife area or state owned land	18
C. Streams (perennial) and wetlands	18
D. Parks (limited access)	14
E. Military installations	14
F. 8 years programs [agricultural district] and EP applications	13
G. Highways (limited access)	10
H. Farmland (unrestricted)	06
I. Parks (high use)	05
J. Residential	0
K. Other (landfills, private golf courses)	*

* *Value to be determined on a case by case basis*

Formula:
Weight of buffer x % perimeter of application affected by buffer = total weight per buffer

F. Density - weight 10*
A rating of the "relative contiguity" of a given application to other applications, eight-year [agricultural district] program farms or deed restricted farms.

"Relatively Contiguous": means that there exists no additional development potential between the application parcel and the closest "program" property [property restricted by easement or enrolled in an agricultural district].

Formula: for each parcel, or chain of parcels, the applicant property is relatively contiguous with, the following point system applies: (note: this category is evaluated in the same manner as the SADC)

1. Easement Purchase properties	02 points
2. Other applicant properties	02
3. 8-year farmland programs	01

Total weight = the sum of the categories.

*** The CADB reserves the right to award an additional 10 points to the priority project areas.

G. Size - weight 05
Priority will be given to larger masses of farmland.

Formula:

> 150 acres	05 points
100-149 acres	03
80-99 acres	02
50-79 acres	01
20-49 acres	0

H. Local Commitment - weight 05
Priority will be given where municipal, county, regional and state policies support the long term viability of the agricultural industry.

Factors indicating support:
1. Financial contribution for current funding round at the local level.
2. Municipal adoption of a Right-to-Farm ordinance.
3. Zoning techniques are supportive of farmland preservation (ex. TDR program, mandatory buffering between development and existing agricultural operations, cluster zoning etc.)
4. Construction code fees charged for farm structures are at or below the state rate (.0008).
5. Establishment of an Agriculture Resolution/Advisory Board.

One point will be awarded for each factor.

I. Special Considerations - weight maximum of 05
Recognition of special considerations which cannot be adequately addressed in the previous categories.

1. Application supports other planning goals (ex. waterway, power easement or landfill buffer).
2. Historic significance.
3. Uniqueness of the agricultural operation.
4. Landowner is a full time farmer.
5. Imminence of change (ex. held by estate, property is for sale, foreclosure).
6. Other factors considered by the Board.

SCORING SHEET
EASEMENT PURCHASE APPLICATION

APPLICANT: _____ TOWNSHIP: _____

BLOCK: _____ LOT: _____ ACREAGE: _____

I. Soils: 35 points
Land Capability: 20 points

Approved conservation system: _____

Class I	acres: _____	%_____
Class II	acres: _____	%_____
Class III	acres: _____	%_____
Other	acres: _____	%_____

(%I x 40) + (%II x 15*) + (%III x 05*) = Total _____

Important Farmland: 15 points

Prime	acres:_____	%_____
SWI	acres:_____	%_____
Local	acres:_____	%_____
Unique	acres:_____	%_____
Other	acres:_____	%_____

(% Prime x 15) = (%SWI x 10) + (%Local x 05) = Total _____

II. Percent Tillable: 15 points

	Soil tests*	without soil tests
80%-100% tillable =	_____ (15)	_____ (12.5)
60%-79% tillable =	_____ (10)	_____ (07.5)
50%-59% tillable =	_____ (05)	_____ (0 2.5)
49% tillable =	_____ (0)	

Total_____

III. Septic: 05 points

Slight	acres:_____	%_____
Moderate	acres:_____	%_____
Severe	acres:_____	%_____

(%Slight x 05) + (%moderate x 02) = Total _____
**see adopted criteria for explanation*

IV. Boundaries and Buffer: 20 points
Total inches: _____

Inches	Land Use	Weight	x	%	=	Points
_____	Deed Restricted Farm	20	x	____	=	_____
_____	State or restricted wild area	18	x	____	=	_____
_____	Stream or wetland	18	x	____	=	_____
_____	Park (limited access)	14	x	____	=	_____
_____	Military Base	14	x	____	=	_____
_____	8-year program or EP applicant	13	x	____	=	_____
_____	Highway (limited access)	10	x	____	=	_____
_____	Farmland (unrestricted)	06	x	____	=	_____
_____	Park (high use)	05	x	____	=	_____
_____	Residential	0				

Total_____

V. Density: 10 points
Reasonably contiguous to:

_____	Deed Restricted Farms	_____ x 02 = _____
_____	Other applicant properties	_____ x 02 = _____
_____	8-year farmland programs	_____ x 01 = _____

Priority project area_____ (10 points)

Total_____

VI. Size: 05 points
> 150 acres= _____ (5)
100-149 acres= _____ (3)
80-99 acres= _____ (2)
50-79 acres= _____ (1)
20-49 acres= _____ (0)

Total_____

VII. Local Commitment: 05 points
One point for each factor:

1. Financial contribution for current funding round at the local level. _____
2. Municipal adoption of a Right-to-Farm ordinance. _____
3. Zoning techniques are supportive of farmland preservation. _____
4. Construction code fees charged for farm structures are at or below the state rate (volume x .0008). _____
5. Establishment of an Agriculture Resolution/Advisory Board. _____

Total_____

VIII. Special Considerations: maximum of 5 points
1. Application supports other planning goals (ex. waterway, power easement, landfill, buffer, etc. _____
2. Historic significance _____
3. Uniqueness of the agricultural operation _____
4. Landowner is a full time farmer _____
5. Imminence of change (ex. held by estate, property is for sale, foreclosure, etc.) _____
6. Other (list) _____

Total_____

APPENDIX F: EASEMENT VALUATION WORKSHEET FOR MONTGOMERY COUNTY, MARYLAND

Base:	all farms receive 100 base points	100
Size:	total farm acreage _____/05 =	_____
Land quality:	Acres soil class I _____/total acres_____= _____x 300 =	_____
	Acres soil class II _____/total acres_____ = _____x 200 = (or woodland 1)	_____
	Acres soil class III _____/total acres_____ = _____x 100 = (or woodland 2)	_____
	Approved and implemented soil conservation plan in place = 10 =	_____
Land tenure:	Farmer has $5,000 or higher annual gross farm income = 25 =	_____
Road frontage:	Total feet of road frontage _____/50 = (Maximum 5000ft)	_____
Agricultural zone edge:	Property is within 0.5 miles of the RDT zone border = 100 =	_____

Total points _____

Maximum easement value:

Total points _____ x Base value $7.50 = Max. Value $_____

Subtract 1 acre for each dwelling x number of acres _____

TOTAL EASEMENT VALUE $_____

ENDNOTES

1. Edward Thompson, Jr., *Winning Friends, Losing Ground: States and Local Communities Need a Federal Partner to Protect the Nation's Farmland* (Washington, D.C.: American Farmland Trust, 1995).

2. *Ibid.*

3. Penn. Chapter 14A, section 914.1(d) ii.

4. California Civil Code Chapter 931, Division 11252(b).

5. Varna Ramaswamy, Vermont Tourism Data Center, telephone communication with Robin Sherman, April 11, 1997. The figures for revenues from Vermont tourism are based on lodging and restaurants. If retail sales were included, the number would be higher.

6. 10 Vermont Statutes Annotated 301(a).

7. Vermont Housing and Conservation Board, *1996 Report to the General Assembly* (Montpelier, Vt., 1996), p. 1.

8. Alex Considine, John Roe and Kate Willard, "Protecting Important Natural Areas, Wildlife Habitat and Water Quality on Vermont Dairy Farms through the Vermont Farmland Protection Program," in *Environmental Enhancement Through Agriculture*, William Lockeretz, editor (Medford, Mass.: Tufts University School of Nutrition Science and Policy, 1996), pp. 255-264.

9. California Senate Bill No. 275, 1995.

10. California Code Chapter 931, section 10251.

11. Judy Herring, Farmland Protection Specialist, King County, Wash., interview with Robin Sherman, 1996.

12. California Senate Bill No. 275, 1995.

13. Suffolk County Code, chapter 8, section 6.

14. Minutes of Farm Select Committee Meeting, Suffolk County Planning Department, Suffolk County, N.Y., January 28, 1992.

15. Greg Romano, telephone conversation with Robin Sherman, December 23, 1996.

16. American Farmland Trust, Protecting Farmland or Farming: Oldest Purchase of Easements Program Grapples with Both, *Farmland Update* 4 (1) (Northampton, Mass.: American Farmland Trust, 1992), p.5.

17. Vermont Housing and Conservation Board, *VHCB Buffer Strip Guidelines for Farmland* (Montpelier, Vt., 1996), p. 1.

18. *Ibid.*

19. *Ibid.*, p. 2.

20. David Dolan, telephone conversation with Robin Sherman, January 6, 1997.

21. Bob O'Connor, O'Connor Real Estate, Inc., telephone conversation with Robin Sherman, January 3, 1997.

22. David Dolan, *op. cit.*

23. Alex Considine, *Agricultural Land Protection in Vermont*, presentation given at Land Trust Alliance Rally (Burlington, Vt., October 19, 1996).

24. David Dolan, *op. cit.*

25. Local programs included a water management district in Florida and a private land conservancy in North Carolina.

26. Jim Libby, *RECD Debt for Conservation Easement Program* (Montpelier, Vt.: Vermont Housing and Conservation Board, 1996); and David Dolan, *op. cit.*

27. David Dolan, *op. cit.*

28. Memorandum from Don Eklund, County Auditor, to King County Council Members, November 1, 1991.

29. Michael Washington, telephone conversation with Robin Sherman, January 3, 1997.

American Farmland Trust. Protecting Farmland or Farming: Oldest Purchase of Easements Program Grapples with Both, *Farmland Update* 4 (1). Northampton, Mass.: American Farmland Trust. 1992, p. 5.

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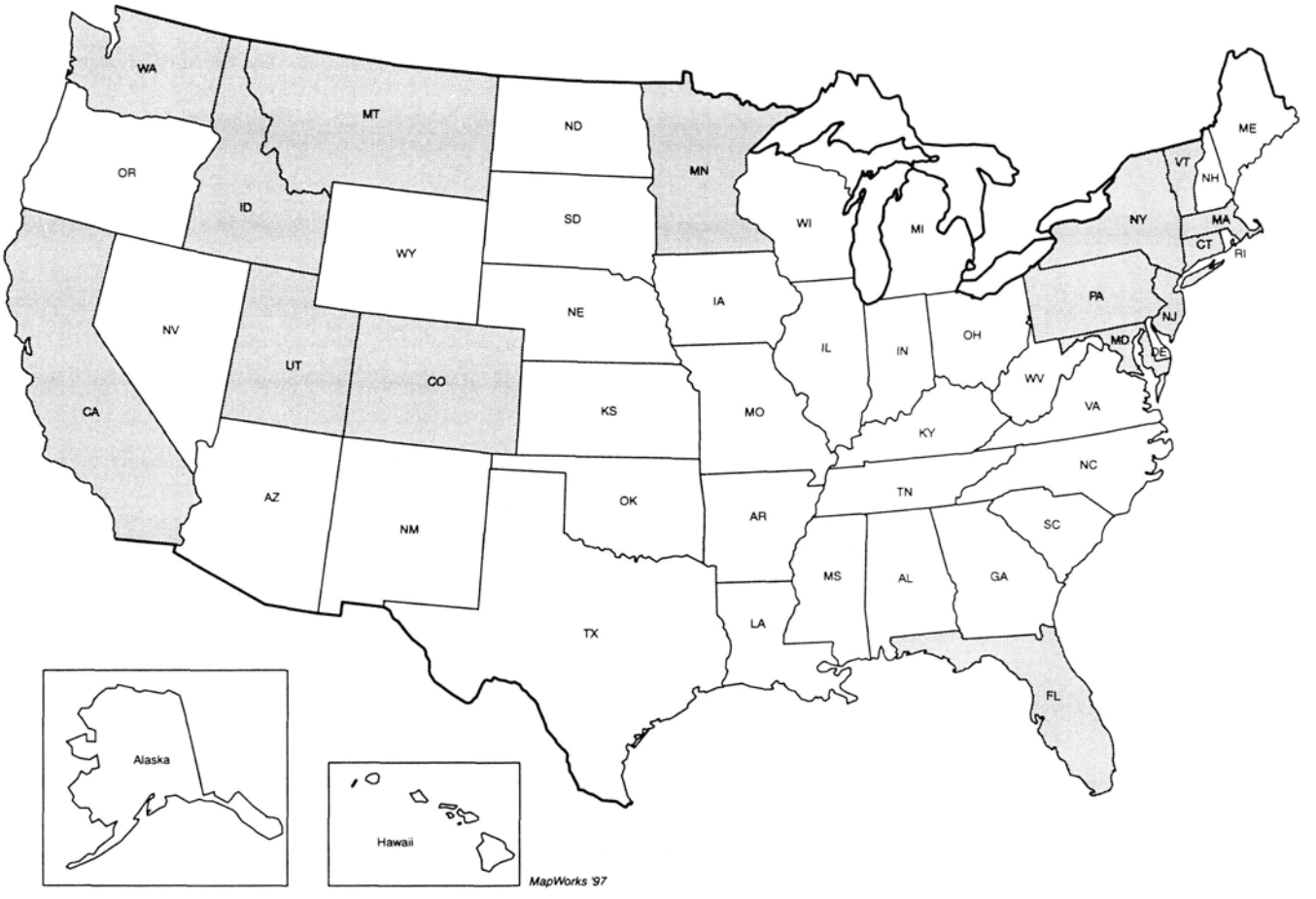
CHAPTER 4: TRANSFER OF DEVELOPMENT RIGHTS

MAP 4.1: STATES WITH LOCAL TDR PROGRAMS TO PROTECT FARMLAND, 1997



American Farmland Trust

BRIEF DESCRIPTION OF TDR PROGRAMS

Transfer of development rights (TDR) programs allow landowners to transfer the right to develop one parcel of land to a different parcel of land. Generally, TDR programs are established by sections of local zoning ordinances. In the context of farmland protection, TDR is used to shift development from agricultural areas to designated growth zones closer to urban services. The parcel of land where the rights originate is called the "sending" parcel. When the rights are transferred from a sending parcel, the land is restricted with a permanent conservation easement. The parcel of land to which the rights are transferred is called the "receiving" parcel. Buying these rights generally allows the owner to build at a higher density than ordinarily permitted by the base zoning. TDR is known as transfer of development credits (TDC) in California and in some regions of New Jersey.

TDR programs are based on the concept that property owners have a bundle of different rights, including the right to use land, lease, sell and bequeath it, borrow money using it as security, construct buildings on it and mine it, subject to reasonable local land use regulations. Some or all of these rights can be transferred or sold to another person. When a landowner sells property, all the rights are transferred to the buyer. When an owner conveys a right-of-way to a power company, only the right to use the land for the specific purpose is transferred. When a landlord leases an apartment to a tenant, the tenant gains the right to use the property for the term of the lease. TDR programs enable landowners to separate and sell the right to develop land from their other property rights.

TDR is a local technique used predominantly by counties, municipalities, towns and townships. There are two regional TDR programs for farmland protection that were developed to protect New Jersey's Pinelands and the pine barrens of New York's Long Island.

TDR programs are distinct from purchase of agricultural conservation easement programs because they involve the private market. Most TDR transactions are between private landowners and developers. Local governments generally do not have to raise taxes or borrow funds to implement TDR. A few jurisdictions have experimented with public purchase and "banking" of development rights. A TDR bank buys development rights with public funds and sells the rights to private landowners.

FUNCTIONS AND PURPOSES OF TDR PROGRAMS

TDR programs are designed to accomplish the same purposes as publicly funded purchase of agricultural conservation easement programs. They prevent non-agricultural development of farmland, reduce the market value of protected farms and provide farmland owners with liquid capital that can be used to enhance farm viability.

TDR programs also offer a potential solution to the political and legal problems that many communities face when they try to restrict development of farmland. Landowners often oppose agricultural protection zoning and other land use regulations because they can reduce equity. APZ can benefit farmers by preventing urbanization, but it may also reduce the fair market value of their land. When downzoning is combined with a TDR program, however, landowners can retain their equity by selling development rights.

BENEFITS AND DRAWBACKS OF TDR

BENEFITS

- TDR protects farmland permanently, regardless of who owns it.
- Participation in TDR programs is voluntary in the sense that landowners are never required to sell their development rights.
- TDR promotes orderly growth by concentrating development in areas with adequate public services.
- TDR programs allow landowners in agricultural protection zones to retain their equity without developing their land.
- TDR is a market-driven technique—private parties pay to protect farmland, and more land is protected when development pressure is high.
- TDR programs can be designed creatively to accomplish a variety of community goals in addition to farmland protection, including the protection of environmentally sensitive areas, the development of compact urban areas, the promotion of downtown commercial growth and the development of agricultural water supplies.

DRAWBACKS

- TDR programs are technically complicated and require a significant investment of time and staff resources to implement.
- TDR is an unfamiliar concept. A lengthy and extensive public education campaign is generally required to explain TDR to citizens.
- The pace of transactions depends on the private market for development rights. If the real estate market is depressed, few rights will be sold, and little land will be protected.

BRIEF HISTORY

TRENDS IN TDR

The National Agricultural Lands Study reported that 12 jurisdictions had enacted TDR programs to protect farmland and open space, but very few of these programs had been implemented by 1980[1]. In the 1980s and 1990s, many additional local governments adopted TDR ordinances. In California, for instance, the Tahoe Regional Planning Agency and more than sixteen other counties and cities enacted TDR programs to protect natural areas[2]. The number of farmland-oriented TDR programs also grew. By 1997, more than 40 local jurisdictions offered TDR as a farmland protection option (see Table 4.1, p. 123).

TABLE 4.1: LOCAL GOVERNMENTS WITH TDR PROGRAMS FOR FARMLAND, 1997

State/County	Date Ordinance Enacted	Acres of Farmland Protected	Total Acres Protected	Notes
California				
Marin County	not available	660	660	
San Mateo County	1986	40	40	Bonus rights awarded for development of agricultural water storage
San Luis Obispo	1996	0	0	Appraisals used to allocate development rights
Colorado				
Boulder County	1995	approx. 350	approx. 350	
Connecticut				
Windsor	1993	0	0	Open Space Preservation Program
Florida				
Palm Beach County	1992	0	640	County buys development rights on environmentally sensitive land
Idaho				
Fremont County	1992	not available	not available	
Maryland				
Calvert County	1978	not available	7,700	Sale of one right results in easement on balance of property
Caroline County	1989	not available	not available	
Charles County	1991	315	315	Sale of one right results in easement on balance of property
Harford County	1982	not available	not available	Sending and receiving parcels must be within 500 feet of each other
Howard County	1993	700	2,000	
Montgomery County	1980	38,251	38,251	Mandatory program
Queen Anne's County	1987	1,740	1,740	
St. Mary's County	1990	0	6	
Talbot County	1989	500	580	
Massachusetts				
Sunderland	1974	not available	not available	
Townsend		0	0	
Minnesota				
Blue Earth County	1977	not available	not available	
Montana				
Springhill Community, Gallatin County	1992	360	360	Mandatory program
New Jersey				
Lumberton Township, Burlington County	1985	0	0	
New Jersey Pinelands Commission	1981	5,180	13,364	Mandatory program

Table 4.1 continued on next page

State/County	Date Ordinance Enacted	Acres of Farmland Protected	Total Acres Protected	Notes
New York				
Eden	1977	31	37	
Perinton	1993	56	82	Open Space Preservation Program
Central Pine Barrens (Long Island)	1995	30	60	Program designed to protect environmentally sensitive land
Southampton	1972	0	232	
Pennsylvania				
Buckingham Township, Bucks County	1994	280	280	
Chanceford Township, York County	1979	not available	not available	
Codorus Township, York County	1990	40	40	Transfers between adjacent parcels in common ownership only
East Hopewell Township, York County	1976	20	20	Transfers between parcels in common ownership only
East Nantmeal Township, Chester County	1994	0	0	
Hopewell Township, York County	not available	not available	not available	
London Grove Township, Chester County	1995	0	0	
Lower Chanceford Township, York County	1990	200	200	Transfers between adjacent parcels in common ownership only
Manheim Township, Lancaster County	1991	190	190	County has TDR Bank
Shrewsbury Township, York County	1991	15	15	Rights may be transferred to low-quality farmland only
Springfield Township, York County	1996	not available	not available	
Warrington Township, Bucks County	1985	0	0	Rights used for commercial/industrial development
Washington Township, Berks County	1994	0	0	
Utah				
Tooele County	1995	0	0	
Vermont				
Jericho	1992	0	0	
South Burlington	1992	45	245	Open Space Preservation Program
Williston	1990	0	0	
Washington				
Island County	1984	88	88	
Thurston County	1995	0	0	Mandatory program

ACCOMPLISHMENTS

Local governments in Maryland have been very active in approving and implementing TDR programs. By 1995, nine Maryland counties had adopted TDR programs to protect farmland; three had placed substantial acreage under conservation easements (see Table 4.1)[3]. The TDR program in Montgomery County, Md., located immediately to the northwest of Washington, D.C., is the best example of the potential of TDR to protect farmland. By 1997, the county had protected more than 38,000 acres in its 89,000-acre Agricultural Reserve, and rights to build more than 6,000 houses had been shifted to the county's TDR receiving areas. (Sections of Montgomery County's zoning ordinance that create regulations for the TDR program are included in Appendix G, p. 140). Calvert and Queen Anne's Counties have protected more than 7,700 and 1,500 acres of farmland, respectively, through TDR. The six other counties that have TDR programs (Caroline, Charles, Harford, Howard, St. Mary's and Talbot) have protected little or no farmland to date.

In New Jersey, a TDR program is protecting an agricultural and environmentally sensitive area known as the Pinelands, covering almost a million acres in the south-central region of the state. Approximately 13,000 acres have been protected by the program since 1981, 39 percent of which were farmland.

The Pennsylvania legislature approved TDR authorizing legislation in 1988; at least 13 townships have created some form of TDR program to date. Several townships have not had any transfers and the rest have experienced a very modest number of sales of development rights. For the state as a whole, TDR programs to date have protected fewer than 500 acres.

CHALLENGES

Montgomery County's experience demonstrates that TDR can be a very effective farmland protection tool. Few TDR programs, however, have protected a significant amount of farmland. Some jurisdictions have had TDR ordinances on the books for more than a decade without completing a single transfer. The slow pace of transfers in other counties around the nation attests to the difficulty of implementing TDR programs.

In states where local governments have only those powers that the state legislature has expressly or implicitly delegated to them, local governments may need special enabling legislation to implement TDR.* In Virginia, county governments have tried and failed to implement TDR programs. Even in New Jersey, which has long sought to give local governments substantial power to manage their affairs, the lack of enabling authority inhibited the development of municipal TDR programs until 1993, when the power was delegated to them[4].

* Enabling legislation is necessary because TDR programs have ramifications for land title recording, real and personal property taxation, and security interests in restricted land, such as mortgages, judgments and liens.

ISSUES TO ADDRESS IN DEVELOPING A TDR PROGRAM

ISSUES AND OPTIONS

TDR is most suitable in places where large blocks of land remain in farm use. In communities with a fragmented agricultural land base, it is difficult to delineate a viable sending area. Jurisdictions must also be able to identify receiving areas that can accommodate the development to be transferred out of the farming area. Allocating this additional density can be difficult: The receiving areas must have the physical capacity to absorb new units, and residents of those areas must be willing to accept higher density development. Often, current residents of potential receiving areas must be persuaded that the benefits of protecting farmland outweigh the costs of living in a more compact neighborhood.

One of the most difficult aspects of implementing TDR is developing the right mix of incentives. Farmers must have incentives to sell development rights instead of building lots. Developers must benefit from buying development rights instead of building houses according to the existing zoning and subdivision standards. TDR programs are sometimes created in conjunction with APZ: New construction is restricted in the agricultural zone, and farmers are compensated with the opportunity to sell development rights. Thus, local governments must try to predict the likely supply of and demand for development rights in the real estate market, which determines the price.

In developing a TDR program, planners must address a variety of price-related technical issues. These issues include:

- What type of transfers should be permitted?
- Should the TDR program be mandatory or voluntary?
- Which agricultural areas should be protected?
- How should development rights be allocated?
- Where should development be transferred, and at what densities?
- Should all transactions be made on the open market, or should the local government buy and sell development rights through a TDR bank?

Because the issues are so complex, TDR programs are usually the result of a comprehensive planning process. This process helps a community envision its future and generally involves extensive public participation. The process of developing a community vision may help build understanding of TDR and support for farmland protection.

DESCRIPTIVE ANALYSIS OF TDR PROGRAMS

Types of TDR transfers

The term transfer of development rights is generally used to describe density transfer programs that involve monetary transactions. It may also refer to programs that transfer development rights between parcels in the same ownership. TDR programs that allow transfers between parcels in different ownership have the potential to protect much larger areas of land, but they are also far more complicated to implement and administer than programs that are limited to transfers of rights between tracts owned by one person. Arranged in approximate order of increasing complexity, the following types of transfers can be identified:

1. Same owner, same parcel transfers (cluster zoning).
Some zoning ordinances allow landowners to group houses on one section of a tract, on smaller lots than would ordinarily be permitted, so long as the average density for the development does not exceed the maximum allowable density permitted by zoning. The land that is saved by clustering may be restricted with an agricultural conservation easement. Clustering allows developers some flexibility to locate residences away from active farm fields, flood plains, marshy areas or steep slopes, and to concentrate them in areas most suitable for housing. In Howard County, Md., landowners in the resource conservation district have three options: clustering, transferring development rights out of the district or selling an easement to the county if funds are available for its purchase.

2. Lot merger.
The owner of two adjacent lots may combine them to be treated as one. The density allowed on one of the former lots can thus be transferred to the other. For example, San Mateo County, Calif., awards bonus development credits to landowners who merge contiguous parcels to form a larger parcel.

3. Transfer of development rights between adjacent properties in the same ownership.
This option allows a landowner to transfer development rights from one parcel to an adjoining parcel. Several townships in York County, Pa., allow farmland owners to transfer development rights to an adjoining parcel in the same ownership, but the receiving sites must be located on low-quality soil.

4. Transfer of development rights between non-adjacent tracts in the same ownership.
Owners of tracts in rural "sending" areas agree to restrict their use to farming or conservation, in exchange for permission to transfer the development rights to land they own closer to urban services. This approach is known as *proffers* in Virginia. Blue Earth County, Minn., also allows transfers between non-contiguous tracts in the same ownership.

5. Transfer of development rights to non-adjacent tracts in different ownership in the same local jurisdiction.
Development rights may be transferred between parcels in different ownership in the same jurisdiction; this involves monetary transactions between private parties. Rights may be transferred between private parties, or a government agency may purchase development rights and sell them to developers. Springhill Community in Gallatin County, Mont., uses this type of program.

6. Transfer of development rights from parcels in a designated rural "sending area" to non-adjacent tracts in different ownership in a designated "receiving area" in the same local jurisdiction.
This is similar to the previous example, except that the local government designates discrete sending and receiving areas. Lumberton Township, N.J., Manheim Township, Pa., and Island County, Wash., have this type of program.

7. Transfer of development rights from parcels in a designated rural "sending area" to non-adjacent tracts in different ownership in a designated "receiving area" across local boundaries.
In this type of TDR program, the sending and receiving areas are located in different local jurisdictions. This is the most technically complex type of TDR program, requiring cooperation between different levels of local government. Multi-jurisdiction TDR programs allow for comprehensive regional planning. The TDR program in Thurston County, Wash., allows development rights to be transferred from unincorporated areas of the county to receiving areas in any of the county's seven municipalities. Each municipality has a unique TDR receiving ordinance. In New Jersey, the Pinelands Commission manages a regional TDR program that allows transfers of development rights in an area that encompasses six counties and 22 municipalities.

Should the program be voluntary or mandatory?

The terms "voluntary" and "mandatory" can be confusing when used in reference to TDR. All TDR programs are voluntary in the sense that landowners are never legally compelled to buy or sell development rights. "Voluntary" TDR programs allow landowners in an agricultural area to sell development rights to parties with land in a receiving area, as an alternative to building on their own land. There is no reduction of density in the sending areas. The TDR program in San Luis Obispo County, Calif., for example, is designed to reduce the rate of development of old subdivided lots in rural areas. The program is "voluntary, incentive-based, and market-driven... Landowners are not obligated to use this technique to request an amendment to the general plan or to subdivide property in accordance with existing regulations[5]." Voluntary TDR programs simply provide a conservation option for landowners. The hope behind them is that the additional densities awarded to developers in receiving areas will be a sufficient incentive for them to purchase development rights from landowners in the sending areas at an attractive price.

In many jurisdictions, rural zoning allows the construction of homes on one-, two- or five-acre lots. If landowners are permitted to develop at these densities, too much non-farm residential development will occur and the area will likely be lost to farming. Mandatory TDR programs are designed to prevent fragmentation of farmland in a way that protects landowners' equity. They do not require owners of land in the sending area to sell their development rights. Rather, these programs apply agricultural protection zoning, reducing the amount of development that can occur in the sending area. If landowners want to realize their full equity under the old zoning, they must sell their development rights. Similarly, owners of property in the receiving area must generally buy the right to develop their land to its full potential. Mandatory TDR programs require local governments to ensure that adequate public facilities will be available in the receiving areas by the time the new development takes place.

In 1993, Thurston County, Wash., imposed agricultural protection zoning on more than 12,000 acres. Maximum residential density was decreased from one unit per five acres to one unit per 20 acres. In 1996, the county approved a TDR program. Landowners in the agricultural zones may now develop their land under the new zoning rules, or request the right to sell one development right per five acres. TDR programs in Montgomery County, Md., and the Pine Barrens of New Jersey used the same approach.

Voluntary TDR programs place few restrictions on landowners in the sending areas and usually give landowners in the receiving area relatively modest bonuses. For that reason, they are politically more acceptable than mandatory programs. However, they do not necessarily prevent new development in agricultural areas, nor do they provide strong incentives for concentrating development in growth zones. Several commentators have observed that voluntary programs have not been effective in conserving agricultural or other resource lands[6]. Because so few TDR programs have been fully implemented, it is difficult to determine whether mandatory or voluntary programs are more effective in practice.

Mandatory programs may run the risk of a legal challenge if development is too severely restricted in the sending area. A TDR program administered by Nevada's Tahoe Regional Planning Agency prohibited all development in environmentally sensitive areas. A landowner sued the agency, claiming that its actions amounted to a regulatory "taking," depriving her of all the value of her property. In defense of her claim, the landowner contended that "the TDR program has produced no sales and that her property has no marketable development rights." The Ninth Circuit Court of Appeals upheld a lower court finding in favor of the agency[7]; the landowner appealed to the Supreme Court and the case was scheduled for a hearing in 1997[8].

The TDR program challenged by the Nevada lawsuit was designed to protect environmentally sensitive land, not farmland. In general, courts have found that unless landowners are deprived of all economically viable use of their land, zoning that restricts development is not a regulatory taking. For communities considering a mandatory TDR program to protect farmland, this means that as long as agriculture is economically viable in the TDR sending area, the program is likely to be safe from a takings challenge.

To reduce the risk of a lawsuit and reassure landowners further, communities can study the potential market for development rights before implementing a mandatory program. The Thurston County Regional Planning Commission hired a Maryland firm with experience in Montgomery County to analyze the market for development rights in its seven cities. The study found that the market was likely to be marginal, and the county prepared to scrap its plans. Thurston County farmers, however, advocated the implementation of TDR, with the understanding that the market for development rights might not emerge for five to 10 years.

Which agricultural areas should be protected (the sending areas)?

TDR programs are generally the result of comprehensive planning. Through the planning process, communities determine where good farmland is located and where agriculture is economically viable. Variables considered in delineating sending areas include soil quality, slope, population density, land values and the existence of an infrastructure to support commercial agriculture.

As noted earlier, some jurisdictions that allow TDR do not have defined sending areas. Under the San Luis Obispo County, Calif., program, landowners must meet one of three separate sets of criteria to be eligible to transfer development credits. The TDC section of the county's zoning ordinance sets both specific and general criteria for agricultural land:

(I) *Specific Criteria.* The specific agricultural criteria are as follows:

(a) Land Capability. At least 50 percent of the site must contain Class I or II (irrigated or nonirrigated) soils based on the Natural Resources Conservation Service classification, and the site must be at least 40 acres in size (this may include multiple lots under common ownership or contiguous lots under different ownership).

(b) Grazing. Grazing land with a demonstrated continuity of production over 10 years and a minimum site size of 320 acres with at least 100 acres being well- to moderately-suited for rangeland as described in the Natural Resources Conservation Service soil reports. This may include multiple lots under common ownership that are operated as a single agricultural enterprise, or contiguous lots under different ownership.

(II) *General Criteria.* It is the policy of the county to designate sending sites that contain land with prime, unique or other productive soil, as well as make it possible for a family who would otherwise have to sell the land to retain the land and continue in active agriculture. The general agricultural criteria are as follows:

(a) Continue the demonstrated productive capacity of the land;

(b) Preserve an area with microclimates that support specific agricultural crop types;

(c) Retire the development potential within an area that depends on localized, limited groundwater resources; or

(d) Reduce the potential for erosion or support conservation of soil resources[9].

Jericho, Vt., used a modified Land Evaluation and Site Assessment system to identify individual parcels to be protected through TDR. LESA is a numerical method of evaluating farmland that measures development pressure as well as soil fertility. The town used LESA to rank all parcels larger than 25 acres. The top 25 percent of parcels were designated as prime agricultural parcels, and landowners were given the option to transfer rights from these tracts.

Geographic Information Systems also facilitate mapping relevant criteria and designating sending areas. Whichever method is used to designate sending parcels or areas, it is important to recognize that the more parcels of land that are eligible for TDR, the more development rights will be available for use in the receiving areas.

How will development rights be allocated?

Once a community has designated sending areas, it must choose a way to allocate development rights to landowners. Methods of allocating development rights include:

- By gross acreage owned based on the underlying zoning;
- According to the land's characteristics and its physical suitability for development; or
- By determining the cash value of each eligible parcel for development[10].

The gross acreage/zoning method is the most commonly used system of allocating development rights[11]. Many voluntary TDR programs, such as those in Jericho, Vt., and Windsor, Conn., set the number of transfers at the number of houses that landowners in the sending areas would be allowed to build under the current zoning. Under mandatory TDR programs in Montgomery County, Md., and Thurston County, Wash., development rights were allocated based on the zoning ordinance in effect before the enactment of TDR. In Montgomery County, landowners in the sending area are entitled to one right for every five acres, which was the permitted density prior to downzoning and hence a measure of lost equity (although the price of development rights does not necessarily reflect the value of five-acre lots under the old zoning). The current zoning allows one right per 25 acres. In Calvert County, Md., landowners in the sending areas are entitled to one development right for each acre, but five development rights are needed to build a house in the receiving areas.

New Jersey's Pinelands Transferable Development Credit Program keys the number of the development credits that a landowner will receive to the environmental significance and development potential of the conserved land. Owners of wetlands used for cranberry and blueberry production receive fewer credits than owners of upland parcels or cropland. One Pinelands Development Credit allows landowners to build four houses.

San Luis Obispo County, Calif., uses appraisals to determine the number of development credits awarded landowners in sending areas[12]. Landowners who wish to transfer credits are required to obtain a professional appraisal of the value of an easement on their land.** The easement value is then divided by 10,000 to determine the number of development credits. The actual sale price of the development credits is determined through negotiation between the seller and the buyer[13]. Table 4.2, p. 132 summarizes how several different jurisdictions allocate development rights.

** Easement value is generally the difference between fair market value and restricted value.

TABLE 4.2: ALLOCATING DEVELOPMENT RIGHTS IN SELECTED JURISDICTIONS

Jurisdiction	Method of Allocating Development Rights	Allocation Ratios
San Luis Obispo County, CA	Appraised easement value	Easement value/ 10,000=number of rights
Calvert County, MD	Gross acreage	Approximately 1 right per acre
Charles County, MD	Zoning	1 right per 3 acres
Montgomery County, MD	Gross acreage/zoning	1 right per 5 acres
Lumberton Township, NJ	Gross acreage and land characteristics	1 right per 2 acres depending on actual development potential
Pinelands Region, NJ	Gross acreage and land characteristics	1 credit/39 acres in non-productive wetlands 2 credits/39 acres of farmland/upland 1 credit/196 acres in productive wetlands
Island County, WA	Gross acreage	1 right per acre

San Mateo County, Calif., grants bonus development credits to landowners who develop or expand agricultural water storage facilities according to the schedule in Table 4.3.

TABLE 4.3: BONUS DEVELOPMENT CREDITS, SAN MATEO COUNTY, CALIFORNIA[14]

New Storage Capacity (acre-feet)	**Bonus Density** (dwelling units)
0 - 12.24	0.0
12.25 - 24.49	0.5
24.50 - 36.74	1.0
36.75 - 48.99	1.5
49.00 - 61.24	2.0
> 61.25	Density allocated at same rate

Once a sending area has been designated and an allocation method determined, the jurisdiction can calculate the maximum number of development rights that could be transferred by the program. Establishing the maximum number of available development rights is important in deciding how much land to incorporate in the receiving areas.

Zoning and TDR in Springhill Community, Montana

Springhill is an unincorporated farming community in Gallatin County, 10 miles north of Bozeman in south central Montana. The county has no zoning, and land use regulation is generally unpopular in Montana. The U.S. Forest Service owns about half of Springhill's 19,000 acres; most of the rest of the land is owned and used by ranchers. There are approximately 50 households in Springhill, and children still attend classes in the one-room schoolhouse built in 1906. Springhill may be a small rural community in a conservative western state, but it has an award-winning zoning ordinance and a TDR program carefully tailored to meet local needs.

In 1992, Springhill residents voted to create a special zoning district. The district allows for one house per 160-acre parcel as a matter of right. Every parcel, even those smaller than 160 acres, got one development right at the time the ordinance was adopted. If landowners already had houses on parcels that were 160 acres or smaller, their rights were committed. Landowners with at least 320 acres were entitled to two rights. In addition, landowners were allowed one additional right per 80 acres.

Landowners may use their development rights or sell them to other landowners in the district. To use additional or transferred development rights, however, landowners must obtain a special use permit. According to the standards for use of these additional or transferred rights, construction must be limited to 15 percent of the original size of the receiving parcel. The owner must then place a permanent easement on the remaining 85 percent of the parcel. Owners cannot site houses on prime agricultural land, in the middle of a productive field, in wildlife habitat or on hilltops. The creation of new roads is strongly discouraged.

The Springhill Community zoning ordinance and TDR program were the results of a two-year process that involved extensive community input. A citizen committee surveyed all the landowners in the community to determine what types of land use regulations would be acceptable. The resulting ordinance was approved by 89 percent of the residents, and it won a 1994 award from the American Planning Association. Since the ordinance was adopted, two landowners have transferred development rights on their own properties, permanently protecting approximately 360 acres.

Where should development be transferred (receiving areas), and how may rights be used?

In jurisdictions where development rights may be transferred only to adjacent parcels, there are no designated receiving areas. In York County, Pa., several townships permit development rights to be transferred to lots on adjacent parcels that are less suitable for farming than the sending site. The goal of these programs is not to transfer development out of agricultural areas, but to promote protection of the most productive land.

In most communities, however, the goal is to transfer development out of agricultural zones into more suitable areas. In these jurisdictions, receiving areas should have a concentration of public facilities such as roads, water supplies, sewer systems and social services, such as

schools and police and fire protection. Local governments should be prepared to construct the infrastructure in the receiving areas necessary to support higher densities.

Under most TDR ordinances, landowners in the receiving area are entitled to build at higher densities if they purchase development rights from landowners in the sending area. Communities determine both the number of dwelling units allowed under existing zoning and the density increment to grant buyers of development rights. For instance, if the permissible base density in the receiving area is one dwelling unit per acre without TDR, a landowner may increase density up to two dwellings per acre after purchasing a development right.

Zoning in the receiving area must create an incentive for developers to buy development rights. If the zoning allows high-density development, developers will simply build to maximum densities without development rights. Allowable densities should thus be lower than the market will bear. It is also important to ensure that the receiving area is large enough to create demand for development rights. The proposal for a TDR program in Montgomery County, Pa., recommends that the receiving area be large enough to absorb at least twice the number of development rights that could be generated in the sending area[15]. The concept behind the proposal is to promote competition for scarce development rights, which should drive up the price paid to farmers. Burlington County, N.J., recommends that the receiving area be able to accommodate 30 to 50 percent more new dwelling units than there are development rights[16]. In theory, the greater the additional density allowed on each receiving parcel, the more buyers should be willing to pay for development rights.

TDR and the Laws of Supply and Demand

The process of developing a TDR program and establishing a market for development rights takes time. Montgomery County, Md., established its 89,000-acre TDR sending area, known as the Agricultural Reserve, in 1980. It took another three years to designate receiving areas. Transactions began in 1983, at an average price of $2,500 per development right. In 1997, the total supply of development rights in the Agricultural Reserve fell below the county's TDR receiving capacity for the first time, and the average price of a development right had risen to $10,500[17].

Increasing residential density is only one of many potential uses of development rights. Several communities around the nation have taken innovative approaches to applying development rights. Under the TDR program in Thurston County, Wash., each of the county's seven cities wrote its own TDR receiving ordinance. Olympia, Washington's capital city, took an unconventional approach to allocating residential density. With strong demand for low-density urban residences, city officials wanted to encourage compact development to prevent sprawl and facilitate public transportation. They reasoned that under current market conditions, developers might not be willing to buy development rights to build at higher densities. They might, however, be willing to pay a premium to build at low densities. As a result, densities in Olympia's receiving areas range from four to eight units per acre. Under the new TDR receiving ordinance, developers can build five to seven units per acre by right, but must purchase development rights to build at the lowest and highest permissible densities. In theory, the

demand for large houses on quarter-acre lots will merit the cost of purchasing development rights. City officials believe that the receiving ordinance creates a win-win situation: If development rights are purchased, farmland in the county is being protected; if they are not used, then the city will have effectively discouraged sprawl within its borders. Excerpts from Olympia's ordinance regulating the use development rights are included in Appendix H, p.142.

A few jurisdictions have designed TDR programs to achieve multiple goals. The zoning ordinance for Warrington Township, Pa., states, "[t]oward achieving the purpose of promoting industrial and office development...and toward furthering the preservation of agricultural lands...landowners in [the Planned Industrial] district may be recipients of development rights transferable from the RA-Residential Agricultural District." Development rights may be used to build factories, wholesale and distribution facilities, and professional and business offices. Each development right permits a 1-percent increase in the otherwise allowable building coverage up to a maximum coverage of 45 percent, and a 2-percent increase in impervious surface coverage up to a maximum coverage of 85 percent[18]. Queen Anne's County, Md., also allows development rights to be used to increase the floor space of commercial buildings. Talbot County, Md., has 600 miles of shorefront land. The county located its receiving areas along the eroding shoreline. In order to build using transferred rights, developers are required to do shoreline mitigation.

High prices create good incentives for farmers to sell their development rights, but communities must strike a balance between creating incentives for sellers of development rights and addressing the concerns of residents in and near the receiving area. Residents often oppose the additional density that would result from use of TDR. When Calvert County, Md., initiated its TDR program, it let developers propose receiving zones in any area of the county outside the areas reserved for agriculture. The county then held public hearings to discuss the proposed receiving areas. According to Brooke Kaine, a Calvert County residential developer, this system "spawned a citizen's group in every area of the county." Kaine, who frequently purchases development rights for use in his projects, warns other communities that designating receiving areas is one of the most difficult elements of implementing a TDR program. "When you say 'increased density,'" he cautions, "people do not hear 'we're saving the farms[19].'" Several planners interviewed for this publication also reported that opposition to increased densities in receiving areas was a significant obstacle to implementing TDR programs.

What restrictions should be placed on land when development rights are transferred?

Most TDR programs require that an agricultural conservation easement be recorded on land after development rights are transferred. In Maryland's Charles and Calvert Counties, the sale of one development right requires landowners to record an easement on the entire parcel. This requirement is designed to prevent fragmenting the land into parcels that are too small to farm. In Calvert County, landowners are entitled to reserve one house lot per 25 acres, to a maximum of three. These lots may be sold or used to build houses for family members. For each lot used, farmers must subtract five development rights from their total entitlement.

Should all transactions be conducted on the open market, or should a TDR bank be established?

One concern about TDR programs is that the market for development rights is

unpredictable. Unless the demand for the type of housing anticipated by the program is very strong, the chances are remote that the development rights on any particular tract in the sending area will actually be attached to a real piece of property in the receiving area. In jurisdictions with mandatory TDR programs, landowners may claim that TDR does little to restore the equity that they lost when agricultural protection zoning was imposed. In jurisdictions with voluntary programs, farmers may sell lots if demand for development rights is slow.

One solution to this problem is a publicly administered TDR bank that uses a revolving fund to buy development rights from landowners in the sending area. Funds are replenished by selling the rights to developers. Start-up funding for TDR banks can come from tax revenues, the proceeds from bond issues or land acquisition programs[20]. Public TDR banks are similar to purchase of agricultural conservation easement programs in the sense that they use public funds to buy development rights. The main distinction between TDR banking and PACE programs is that the development rights stored in the "bank" can be sold to developers, and the jurisdiction can use the proceeds to purchase more development rights, whereas in PACE programs, development rights are permanently retired. In this sense, TDR banks can serve as a sort of revolving loan fund to finance farmland protection.

New Jersey's Pinelands Program established a TDR Bank in 1985. The bank serves as the central coordinating agency for the program and buys development rights under prescribed conditions. Its primary role is to encourage transactions through the private market. Data from draft copies of the 1996 report of the Pinelands Commission indicate that, since 1990, almost a third of all development rights sales have been to the bank, even though, by statute, it may only pay 80 percent of their market value[21]. Manheim Township, Pa., also has a TDR bank.

Calvert County, Md., implemented an adequate public facilities ordinance in 1992. The ordinance prohibits the development of new housing when public services such as schools and roads are not sufficient for new residents. In practice, the ordinance halts construction when schools are full and funds are not available for expansion. It also reduces demand for development rights. To ensure that farmers would still be able to sell development rights in years when the ordinance reduces growth, the county created a development rights "purchase and retirement" fund. Farmers may apply to sell up to 10 development rights per year to the PAR fund, which then extinguishes the rights.

TDR AND AGRICULTURAL PROTECTION ZONING

RELATIONSHIP BETWEEN TDR AND OTHER FARMLAND PROTECTION STRATEGIES

In mandatory TDR programs, APZ is used to stabilize land uses in the sending areas and to increase farmers' incentives to sell development rights. Montgomery County, Md., Thurston County, Wash., Springhill Community, Mont., Manheim and Shrewsbury Townships, Pa., and the Pinelands Transferable Development Credit program in New Jersey all rely on APZ to protect land in TDR sending areas. By giving farmland owners a way to retain their equity without converting land to non-agricultural use, TDR programs can reduce landowner opposition to APZ. Calvert County, Md., does not have agricultural zoning, but the county does require that dwellings be clustered on land in its sending areas, leaving a total of 80 percent of each parcel open and available for agriculture.