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A Farmland Preservation Strategy for the Town of North Stonington

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**A FARMLAND PRESERVATION STRATEGY FOR
THE TOWN OF NORTH STONINGTON**

BY:

REBECCA J. PELLERIN

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF COMMUNITY PLANNING**

**UNIVERSITY OF RHODE ISLAND
1998**

**A FARMLAND PRESERVATION STRATEGY FOR
THE TOWN OF NORTH STONINGTON**

**RESEARCH PROJECT
OF
REBECCA J. PELLERIN**

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Abstract

This study researched and analyzed the various techniques that are being utilized across the United States to protect and preserve agricultural lands. These preservation strategies were applied to the rural town of North Stonington, Connecticut. North Stonington has been experiencing extensive growth and development pressures over the last eight to ten years. These growth pressures have threatened and will continue to threaten the town unless an effective farmland preservation plan is adopted and effectively implemented.

This study describes in detail each of the primary preservation techniques that have had the most success in protecting farmlands. Some of the techniques originate at the state or county level, while others can be formulated at the local level. The package of tools that this study has recommended combines several of these preservation strategies, taking into consideration both the strengths and weaknesses of each. The combination of tools allows for a variety of techniques to be utilized at varying costs and degrees of complexity.

The Town of North Stonington can use this study as a starting point for creating its own farmland preservation program. The most important thing for the town to do is to act early before more significant losses ensue. The town should actively integrate the farming community in formulating this strategy and keep the rest of the town residents well-informed and motivated through educational programs about these strategies. The implementation of such a program requires dedication and enthusiasm on the part of both the residents and public officials. The residents and town officials of North Stonington have both of these qualities.

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Chapter 1: Introduction

Introduction

Starting in the 1960s and continuing on through the 1990s, there has been a rapid decline in the amount of productive agricultural land and open space in the United States. The Northeastern United States has been particularly affected by this consumptive land use pattern. Increased amounts of land are being consumed per person because of large-lot zoning and a more dispersed population. The decline of metropolitan areas has resulted in the concentration of new residential, commercial and industrial development in the countryside. This expansion into the countryside increases the cost of community services and can create conflicts between rural and urban landowners. This in turn has caused the conversion of rural, agricultural lands to non-farm, urban uses. The resulting pattern of sprawling development and the unnecessary conversion of farmlands to non-farm uses emphasizes the need for more effective measures to protect agricultural lands and open space resources.

Of the 2.3 billion acres that make up the United States, 940 million is privately owned (Daniels and Bowers, 1997, 8). Of this 940 million acres of privately owned land, farmers own or lease almost all of it. There are 360 million acres of cropland and 50 million acres more of potential cropland. While this is seemingly sufficient farmland to grow crops and raise livestock, it is the quality of the farmlands being lost that raises concerns. Over 1 to 1.5 million acres of farmlands are being lost a year. (Daniels and Bowers, 1997, 8). Agricultural lands tend to be level to gently sloping and well-drained. This not only makes them attractive for farming but also makes them even more attractive

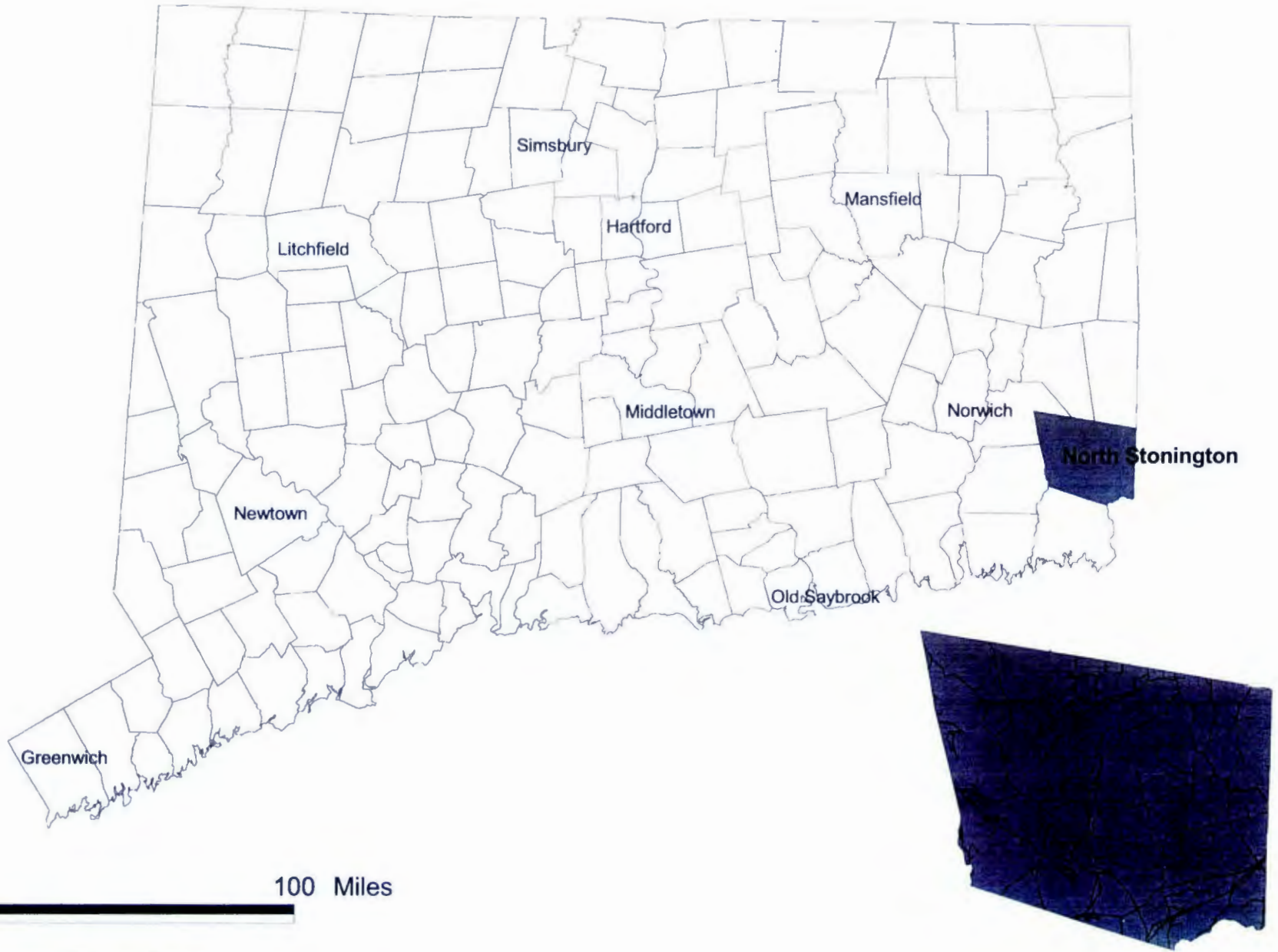
to development. This is where the problem lies. Farmers start to see their financial gains declining as technology improves and worldwide markets open up. They decide to sell their land to developers in order to make a profit for themselves before they lose it all. There needs to be a way to stabilize the land base and make farming more financially attractive to farmers themselves. With the loss of farmlands comes the loss of agriculturally-related jobs resulting in an imbalance in the local economy as farmland is converted into houses. Property taxes go up in order to pay for the new public services and facilities required by the new residents, namely schools. This pattern is evident in North Stonington, Connecticut.

The Town of North Stonington

The Town of North Stonington is a rural, agricultural community located in southeastern Connecticut (Figure 1). This area of the state is in the midst of a variety of development pressures and new economic activity since the inception of the Mashantucket-Pequot Indian run bingo-hall in 1986 and the creation of a high-stakes casino entertainment complex in 1992, both located in Ledyard, Connecticut. The Town of North Stonington is literally in the backyard of these new entertainment facilities. The area has seen a rapid influx of new hotels, commercial centers, restaurants, and other tourist-related services and activities as well as increased levels of traffic congestion and residential development. These new pressures on area towns and specifically the Town of North Stonington has started to take its toll on local services and facilities as well as negatively impact the rural character that has long-defined the area as a quiet, agricultural community.

Figure 1

Connecticut Cities and Towns



2a



0 100 Miles

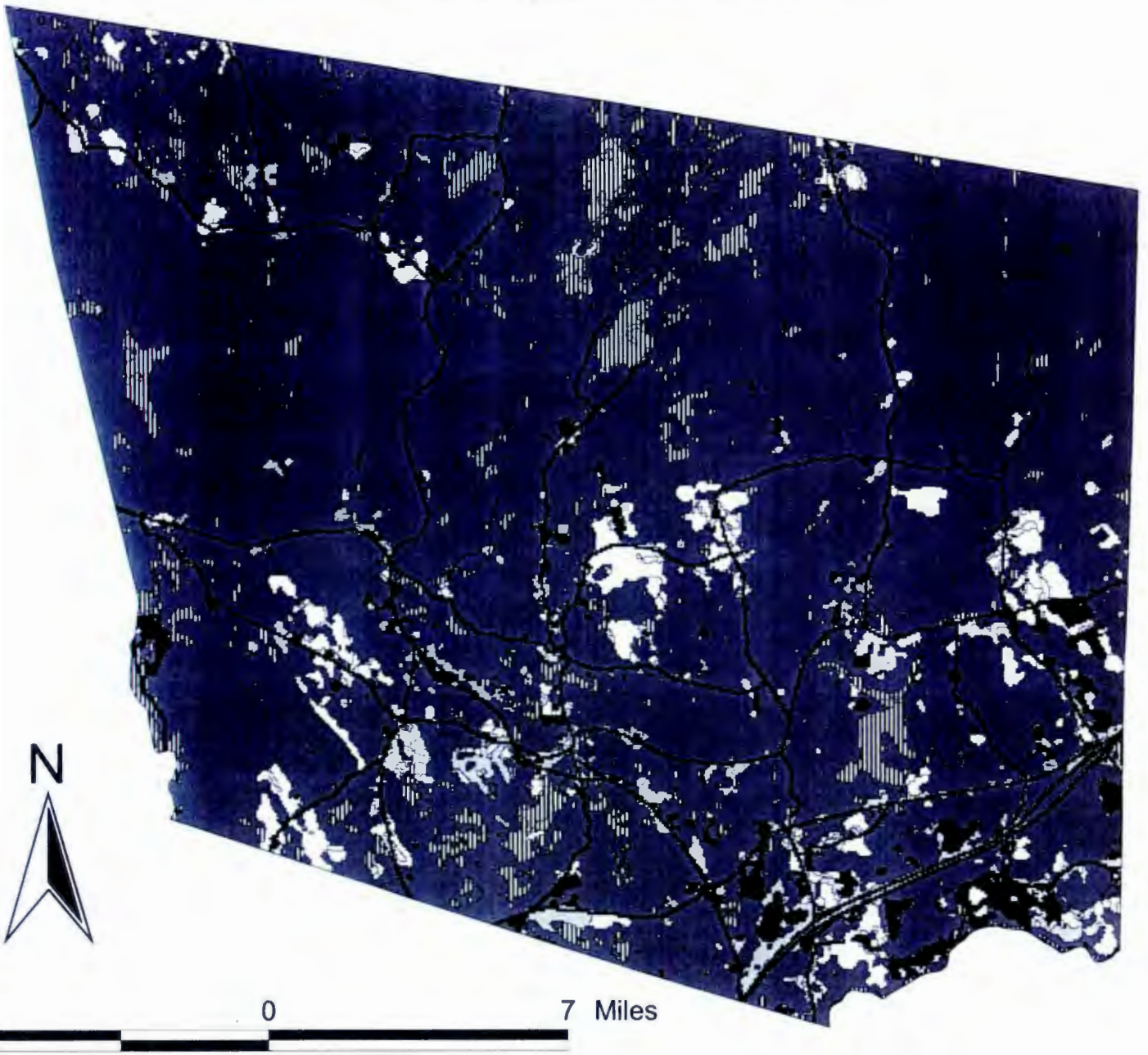
Town Boundary

North Stonington

Given North Stonington's close proximity to the Foxwoods Resort Casino, it is becoming a "bedroom community" for casino employees. The town currently has quite low residential density levels (77 people per square mile) and a 1988 population of 4,490, but these numbers will rapidly change as new residential development continues to increase in the area. The large-lot single-family residential housing unit dominates as the typical dwelling unit at ninety-three percent of the total housing stock. This type of housing consumes large amounts of land and will become a problem in the future as population levels grow and large-lot zoning continues to preside as the dominate land use strategy (Figure 2). The rural amenities that make up North Stonington make it very attractive to new residential settlers. It is these same rural amenities and specifically the area farms and farmlands that are being threatened by all of this new growth and development. While there is an overwhelming desire to preserve the town's rural character and limit development that occurs, there is also the need to attract economic development in an effort to reduce the reliance on residential property taxes. Dairy farming comprises a large part of the local economy, but if increased development pressures continue, these farms will be lost. Finding a way to preserve these farms while promoting some economic development is needed in North Stonington. Zoning alone can not achieve the objectives of preserving farms and farmlands as well as other open space areas.

Little is being done in the town to combat these new development pressures. Presently, the town is without an official town planner. There is a Planning and Zoning Commission that is dealing with all of the planning-related issues facing the town on their own, but given that this is a part-time commitment for most members, they can not

North Stonington Land Uses



Land Uses

-  Impervious Surfaces, Developed Areas
-  Turf, Grasses, Pasture, Soil, Hay & Corn
-  Deciduous & Coniferous Forest
-  Water Bodies & Wetlands
-  Baren Lands & Roads
-  Town Boundary

devote a significant amount of time to any one area. Some sort of strategy needs to be adopted that will help deal with these new growth and development issues as they continue to surface in the area. Case in point is the recently defeated proposal for a Six Flags theme park in North Stonington. Over one year ago, a proposal for a Six Flags adventure theme park was presented to the Town of North Stonington. This theme park would have consumed 600 acres of former farmland that was sold to the Mashantucket-Pequot Indians. Luckily, the proposal was defeated and the theme park will not be coming to the North Stonington. The problem remaining is that the land is still owned by the Mashantucket-Pequot Indians and is still zoned for Industrial use. This means that something else of significant impact could still be proposed for the large parcel.

Developing a Farmland Preservation Strategy

This problem of new growth and development pressures is exacerbated by the fact that farmers are selling out to these pressures. The proposed Six Flag site used to be farmland. A farmland preservation strategy for the Town of North Stonington would help to combat these new pressures and help protect area agricultural lands from future threats. This study will provide an overview of preservation efforts and make recommendation for how the Town of North Stonington can deal with the new pressures on area agricultural lands. Appendix A provides an example of how agricultural preservation can fit into the local comprehensive plan or plan of development.

Following this Introduction, Chapter Two will encompass a review of relevant literature on why farmland preservation is necessary, what the role of the federal government has been in preserving agricultural lands, what farmland preservation techniques are being utilized across the country, analyze the effectiveness of each

technique, and attempt to predict what the future holds for such farmland preservation efforts.

Chapter Three will examine the preservation efforts currently being utilized by the Town of North Stonington. This chapter will begin with the basic foundation for an agricultural lands retention policy for the town and describe the community development goals that relate to farmland preservation. Then there will be a discussion on the preservation strategies that have been or are currently being utilized by the town. The chapter will end with a brief overview of what the future holds for the town in its efforts to preserve area farms and farmlands.

Chapter Four provides a thorough examination of the farmland preservation techniques being utilized across the country. The purposes and functions of each strategy are described in detail along with some real examples of strategies being employed and the effectiveness of the strategy in actually preserving agricultural lands. The chapter concludes with an overview of the importance of choosing a package of preservation tools.

Chapter Five provides a set of recommendations and implementation strategies that have been selected from the techniques outlined throughout the paper. It reviews what the ingredients for a successful preservation plan include, what choices a community has in choosing a preservation strategy, and puts together a package of tools that North Stonington can use in preserving its farms and farmlands. This chapter also examines general implementation measures to effectuate the preservation plan and outlines the basic steps in administration of any preservation program.

Chapter Six provides a conclusion to the paper and summarizes the findings of the research and information collected.

Chapter 2: Literature Review

Introduction

Over the last thirty years, there has been a rapid decline in the amount of productive agricultural land and open space in the United States, especially in the Northeast. Agricultural land is being taken out of farm use and converted to non-farm, suburban or urban uses. The decline in farmland adjacent to metropolitan areas is a function of urbanization and suburbanization spreading further and further away from the central city and merging into the countryside. This suburban growth is facilitated by the array of government subsidies ranging from housing to transportation. The federal government has given tax breaks to new homeowners, and these new homeowners continuously choose the countryside and suburbs as their home. There is also the simple fact that people like the amenities that the countryside and rural areas provide: Scenic views, open space, recreation and conservation areas, as well as wildlife habitats. Agricultural lands help to provide these rural amenities.

Several strategies to preserve farmland have been adopted by states and local governments around the country. These farmland preservation techniques and their effectiveness will be summarized below. Several authors have written on this topic and offer various opinions on the impacts, usefulness, and effectiveness of each strategy. There has also been some discussion on the role of the federal government, or lack thereof, in helping to preserve America's farms. The literature on farmland preservation often offers pieces of advice to states and local governments on the future of farmland

preservation and what the future holds for their area with or without the use of the multitude of preservation approaches. These projections will also be discussed below.

Why is Farmland Preservation Necessary?

Since the 1960s there has been a rapid increase in the number of acres converted from agriculture to non-farm uses. The most prevalent factor in this land conversion seems to be the suburbanization of the countryside. Suburbanization has been defined by Vail as the economic and demographic expansion into rural areas that is not induced by the growth natural resource-based industries (Vail, 1987, 23). Signs of this suburbanization are new housing for year-round, vacation and retirement purposes, more commuter traffic, shopping centers, industry, and new recreational complexes. This movement into the suburbs has been termed the “back to the land” movement (Vail, 1987, 24). Residents and businesses that were formerly located in the city have found cheaper labor, land, public services and taxes in rural areas. People want to raise their children and retire in the quiet countryside.

These forces have caused higher land prices, rents, and taxes, which in turn cause higher farm production and operating costs and prevent new farmers from entering the industry. As suburbanization invades the countryside, new zoning, nuisance suits, and environmental regulations further threaten the farming operations (Vail, 1987, 24). However, there are some who believe that instead of hurting the agricultural economy, suburbanization has actually helped. Fischel believes that agricultural operations do not need the vast amounts of land that people think they need. He uses the capital utilization model to suggest that the total land area in a region does not constrain crop production, because there are several substitutes for land available: machinery, fertilizer, pesticide,

and buildings (Fischel, 1984, 82). He sees suburbanization and urbanization as helping agriculture by providing part-time jobs to farmers who are looking to supplement their income and by providing a direct market for their products and services. Vail agrees with Fischel's argument and adds that farmers have better access to services and supplies and new land lease agreements can be made between farmers and their suburban neighbors (Vail, 1987, 27). Road-side produce stands also do well in suburban areas.

Fischel does not think that a single-family home on a large parcel of land can cause the entire area to be paved over and built-out. Instead of blaming urbanization on subsidies, he believes that issues like pollution, high crime rates, declining quality of schools, and declining levels of public services in the city are the reasons for the movement into the suburbs (Fischel, 1984, 88). Fischel agrees with the problematic nature of losing the critical mass of farms to non-farms uses. This critical mass of farms supports the local equipment and feed dealers who supply the farm. If the farms go, so do the businesses that are dependent on them.

A more detailed breakdown of the reasons behind land conversions has been outlined by Dunford (1984), offering several factors behind these recent and on-going conversions. First, the profitability of farming influences conversions based on the varying prices of products and services, the costs of production, income taxes, and property taxes. If the profitability of farming decreases, so will the amount of farmland in production. Second, the demand for urban conversion based on population growth, investments in infrastructure, and construction activity will influence conversion rates. As populations grow and the demand for new houses, roads and utilities increase, the amount of agricultural land will decrease. Third, several different economic factors will

cause a decline in agricultural land based on the rate of appreciation of land, general price inflation, interest rates, and the availability of mortgages. If land is worth more, farmers will tend to sell it to take advantage of the windfalls from urbanization. Also, if mortgages are more readily attainable, more and more people will be able to build homes, further taking over agricultural and other rural land. Fourth, demographic factors such as the age of the farmers, the availability of heirs to farm the land, and the general attitudes towards the farming lifestyle will influence conversions. If there are no heirs in the family or if family members do not wish to continue farming, the land will be converted to non-farm uses. Lastly, certain land-specific factors will lead to conversion. Favorable location near services and facilities, good slope and drainage factors, the availability of developable sites, and the value of farmland for alternative uses could all cause the potential conversion of farmland to non-farm uses (Dunford, 1984, 191).

Farms provide several necessities and amenities to a community. They can provide sufficient food and fiber at reasonable prices to meet the needs of the people, bring local economic benefits that come from a viable agricultural industry, allow for more efficient, orderly, and fiscally sound urban development, and provide open space and other environmental amenities such as scenic views and recreation and conservation areas (Gardner, 1984, 20).

The Northeastern part of the United States is subject to several of these threats to agricultural land conversion. There is a strong demand for development and relatively low returns to local farming. These two factors alone have led to increased economic pressure to convert farmland to non-farm uses. States and towns in the Northeast may apportion more money and resources to farmland preservation for several reasons. First,

the maintenance of the local agricultural sector broadens local economic diversity, therefore strengthening the multiplier effects as farm equipment suppliers and other local businesses benefit from a strong agricultural economy. Second, farmland gives rise to several non-market benefits such as watershed maintenance, wildlife habitat, scenic views, as well as clean air, water and land. Third, urbanization has an irreversible quality that agriculture does not. Once an area is urbanized, it is highly unlikely that it will be converted back to rural uses. Lastly, local farmland allow area residents to limit their reliance on outside sources for food and other farm products (Mackenzie & Cole, 1987, 251).

States outside of the Northeast have also seen a marked increase in the number of farmland conversions. The states with the most success in curbing these conversions is Oregon. The goals of the Oregon Farmland Preservation Program seem to act as a good reference point and guide for other states and municipalities looking to preserve their agricultural lands. The main goal is to “preserve agricultural lands and maintain them for farm use consistent with existing and future needs for agricultural products, forest and open space” (Knapp & Nelson, 1992, 132). This program calls for an inventory of farmlands and the use of exclusive farm use zones (to be discussed further below) to preserve them. The conversion of farmlands can only occur if the following criteria are considered and met: environmental, energy, social, and economic consequences; unavailability of alternative suitable locations; demonstrated need that is consistent with the above-stated goal; 4.) converted use is compatible with agricultural land; and Class I, II, III and IV soils are retained. Table 1 provides a description of these soil classes. Overall, the farmland preservation goal enables local governments to use the exclusive

Table 1: Land Capability Ratings

Soils Class	General Slope	Erosion Factor	Limitations
Class I	Slight	Slight	Few limitations that would restrict use
Class II	3-8%	Moderate	Some limitations; use conservation practices
Class III	8-15%	High	Many limitations; use special conservation practices
Class IV	15-25%	Severe	Many limitations; very careful management required
Class V			Very low productivity: pasture, range, woodland, wildlife use
Class VI			Severe limitations; few crops, pasture, woodland, wildlife uses
Class VII			Very severe limitations; no crops, use only for range, pasture, wildlife
Class VIII			Most limited; use only for range, woodlands, wildlife, aesthetics

Source: Daniels, Thomas and Deborah Bowers. 1997. *Holding Our Ground: Protecting America's farms and Farmlands*. Washington, D.C.: Island Press. USDA, Natural Resource Conservation Service.

farm use zone to protect farmland, and establishes explicit criteria to determine what constitutes 'farmland' (Knapp & Nelson, 1992, 133).

There are several proponents of a farmland preservation program that include exclusive farm use zones and other agricultural districts or zones, but there are also those who oppose it. Gardner (1984) feels that if land is 'immobilized' in agricultural use, the future direct financial gains that could be obtained from price appreciation and change in use will be needlessly lost. He also feels that if prime agricultural land can not be used for urban uses, demand will simply shift to other areas zoned for such uses. The wealth will be conferred on these latter landowners, not the farmers. Gardner sees the fixed use of land in agricultural zones as defeating the goal of more efficient and orderly urban form. He feels the resulting pattern of land use with agricultural zones will only be more efficient if the developable parcels are properly located, proficient in producing urban amenities, and cost less to bring public services and facilities to them (Gardner, 1984, 24).

Defining farmland is a critical component to any farmland preservation program. Historically, farmland has been defined by the physical characteristics and quality of the operations to produce food and fiber. Recently, the definitions have become more specific, based on such qualities as soil, profitability of the land, location of the land, and the type of product to be raised on the farm. The Soil Conservation Service of the U.S. Department of Agriculture classifies prime agricultural soils as those in Class I, II, I & II, III, and IV (Gardner, 1984, 19-20). The less flexible definition will help to keep speculators from taking advantage of preservation techniques that offer financial incentives to farmers.

Farmland preservation programs have generally been started through enabling legislation at the state level and implemented at the local level. Most land use issues work this way. The land use controls used do not always work to meet the goals of farmland preservation or mediate other land use conflicts. Although there has not been any correlation between farmland preservation and the planning strategy utilized (Alterman, 1997, 220), more than stringent local land use controls are needed. There are several competing goals over different land uses. The degree and extent of the conflict is related to the degree of urbanization, the rate of population growth, and the subsequent population density (Alterman, 1997, 221). To deal with these competing goals and land use conflicts around farmland preservation, a comprehensive package of techniques is called for. No single tool will significantly impact the rate of farmland conversion.

The “common property” aspect of open farmlands is rarely addressed by local land use policies. If farmland is continuously seen only as a commodity to be bought and sold, and little regard is given to the non-market benefits, the “individualistic and

competitive search for recreation, beauty, and tranquility of the countryside may be ultimately self-defeating” (Vail, 1987, 34). The view of farmland as merely a commodity has caused the decline and conversion of these lands to urban and suburban uses. The use of former farmlands as a golf course or a onetime feed and farm equipment store as a gift boutique undermines the true rural character of the countryside and is not the same as the social and economic lifestyle that agriculture nurtures and supports (Vail, 1987, 39).

Role of the Federal Government

There is no national vision nor coherent strategy for the future of this country’s farmlands (Daniels and Bowers, 1997, 75). Traditionally, land use policies have been the domain of state and local governments. The federal government does influence farmland protection through its taxation policies, legal rulings, and farm lending and subsidy programs. It negatively influences farmland preservation when federal highway projects, federal grants for local sewer and water projects, and annual mortgage interest deduction policies for homeowners subsidize the conversion of millions of acres of farmland to non-farm uses (Daniels and Bowers, 1997, 76).

The limited involvement of the federal government continued as a food surplus and seemingly ample supply of land made farmland preservation a back-burner item until the late 1970s and early 1980s (Alterman, 1997, 221). The 1970s brought a higher world demand for food, vulnerability to development pressure, and conservative estimates that meant land could be easily and inexpensively brought into production (Fletcher, 1984, 198). The importance of agricultural exports in off-setting the trade deficit became more prevalent as well. The pressure on farmlands to be converted to non-farm uses became more and more obvious through the 1970s. During the 1967-75 period, 24 million acres

of rural land, not just farmland, was converted to urban uses (Fletcher, 1984, 200). This stirred some concern in the federal government, but they still thought technological breakthroughs would bring them through any crisis.

There have been efforts made by some congressmen to put farmland preservation on the table, but they often failed to achieve any real progress. Congressman James Jeffords (Rep, VT) tried to make changes in the attitude of the federal government towards farmland preservation. He introduced legislation in 1977 to establish a commission to study the problem of farmland conversion and provide guidelines for federal agencies to follow in analyzing farmland conversion issues, but his efforts fell short and was not approved. It was not until 1979 when the National Agricultural Lands Study (NALS) of the U.S. Department of Agriculture (USDA) and the Council on Environmental Quality (CEQ) was introduced, that any significant policy was introduced by the federal government to deal with farmland conversions.

The National Agricultural Lands Study (NALS)

This interagency agreement between the USDA and the CEQ was created under the Carter Administration in 1979. The purposes of the study were to: determine the nature, rate, extent, and cause of the conversion of agricultural lands to non-agricultural uses; evaluate the economic, environmental, and social consequences of agricultural land conversions, as well as the methods being used to stop the conversions; and recommend administrative and legislative actions that would reduce the farmland losses resulting from these conversions (Platt, 1985, 436). The results showed a substantial shift in urban to rural migration, causing the farm to non-farm conversions. Forty percent of the housing constructed in the 1970s was located in rural areas. Farmland conversions were

occurring three times as often in the 1970s than they were in the 1960s, from 1.1 million acres a year to 3.1 million acres a year (Alterman, 1997, 222).

The study also found that ninety percent of the conversions were caused by federal plans, such as economic development programs, capital improvement projects, as well as housing and environmental programs (Gray, 1984, 230). There was little effort made on the part of federal agencies to consider the impacts of their programs on agricultural lands. One of the most significant findings of the NALS was the fact that the United States would have to bring practically all of its potential cropland into production by the year 2000 in order to meet domestic and export demands (Gray, 1984, 231).

The NALS final report made statements about the real threats to farmland and the consequences of conversions to non-farm uses, but made it seem less threatening by stating that the effects would not be evident until far into the future. It did not attach any urgency to the matter. The final report mentioned little if anything about the non-market amenities that farmlands generate, instead focusing solely on the economic value of farmland in producing food and fiber (Fischel, 1984, 81). There was also a lack of a real in-depth evaluation of state and local programs being utilized to preserve farmland. The effectiveness of these programs in terms of political acceptance, cost, and administrative efficiency would have been helpful (Gray, 1984, 227).

The results of this study have been highly criticized because of the limited scope of the study, the lack of the budget and authority to conduct the study, the lack of external guidance, and the circumstances under which the study was conducted given the volatile world economy at the time (Platt, 1985, 436). The data that the study generated was also questioned for many reasons, the first of which deals with the methods used to calculate

the rate of urbanization. The methods used had an upward bias in the trend in urbanization from the 1960s into the 1970s. The definition of an urbanized area was more inclusive in the 1970s than in the 1960s, therefore skewing the rate of urbanization during this time period. Second, alternative sources of data showed different statistics on housing, road, and other construction than the NALS generated. Lastly, alternative estimates and checks on the NALS data (using the U.S. Census of Agriculture) suggested that the rate of urbanization found by the study was far lower than it showed in its findings (Fischel, 1984, 81). The foundation of the NALS was the Natural Resource Inventory of the USDA. This inventory was also held under much criticism, thus making the NALS findings even more questionable (Gray, 1984, 227).

The NALS made the determination that government intervention was necessary to stop the farmland conversions and to encourage states and local governments to adopt comprehensive policies to manage growth and preserve farmlands. Some have argued that the federal government is too remote from local situations and land use issues to have any significant role in farmland preservation. As stated above, most land use decisions are made at the state and local level, not the federal level. Any sort of detailed federal agricultural policy would not work well because every state, region, and town are different and have distinct needs and unique resources available to work with. The federal government could give technical assistance to states and towns who are trying to implement farmland preservation programs and put together any relevant information that would help them in their efforts (Jeffords, 1984, 7). Fischel sees the NALS recommendations as hurting farmers and benefiting anti-development interests as potential developable farmland is restricted to only agricultural use. He does not see why

American families should have to “forgo suburban homes in order to feed Russian cows”(Fischel, 1984, 93-95)!

Legislative History

Jeffords has outlined what a constructive and useful federal policy would look like in his article entitled “The Loss of US Cropland: Whose Issue is it?” in *Protecting Farmland* (Steiner & Theilacker, 1984). He feels that there should be an effort made to minimize the impacts of federal programs on conversions of agricultural land, as well as a reassessment and reshaping of any federal farm programs already in place. He also sees the need for a nation-wide inventory of the problems associated with agricultural land conversion and the solutions already being utilized as a way to get a national perspective on the issues. The various programs could be analyzed to determine their effectiveness in preserving farmlands. At the same time, the federal government could offer financial and technical assistance to state and local governments, and help coordinate efforts among agencies and various levels of government involved in farmland preservation (Jeffords, 1984, 8).

The federal government would seem best suited to provide the above-mentioned technical and financial assistance to state and local governments incorporating farmland preservation into their comprehensive planning process. The Farmland Protection Policy Act of 1981 would address these issues. The policies adopted by the federal government had not readily considered the potential impacts on farmland before this act. A second role for the federal government would be to ensure that their projects (such as highways, waste-water treatment facilities, and water resource development projects) consider and

minimize the negative, even if inadvertent, impacts they could have on agricultural lands (Fletcher, 1984, 200-201).

Farmland Protection Policy Act of 1981

This act was created as a part of the 1981 Farm Bill (Public Law 97-98) to “minimize the extent to which federal programs contributed to unnecessary and irreversible conversion of farmland to non-farm uses” (Fletcher, 1984, 202). It also emphasized coordination of federal programs with state and local programs to preserve farm and other resource lands. The USDA acted as the primary agency under this program and worked to establish measures to pinpoint the effects that federal programs have on these conversions.

Under this act, each federal agency must identify and review any construction projects using federal funding that would result in the conversion of farmlands to non-farm uses (Daniels and Bowers, 1997, 77). These agencies must also determine whether alternative locations or designs would lessen the impacts on farmlands. Before a commission or agency can pursue a project, a proposal for action must be completed that would outline the activities that would be carried on. Since 1986, federal agencies must submit a Farmland Conservation Rating Form (AD-1006) to the local office of the Natural Resources Conservation Service when a federally funded project may cause unnecessary conversions. Since 1994, the Department of Agriculture must report the impacts of federal programs on farmlands to Congress (Daniels and Bowers, 1997, 77). The act also allows the USDA to provide state and local governments with pertinent information on the quality, restoration, maintenance, and improvement of agricultural lands (Fletcher, 1984, 202). Educational programs were also to be established under this

act. Congress has acted slowly in actually funding any technical or informational assistance programs thus far.

The Farmland Protection Policy Act does not require any state or local governments to adhere to any specific farmland protection policies. Funding can be withheld from projects that may negatively impact farmlands, but does not require that the project be altered in any way just to minimize these impacts (Daniels and Bowers, 1997, 77). This act does not apply to lands that are zoned for non-farm uses, such as housing, commercial and industrial uses. The Farmland Protection Policy Act may not be used by individuals or groups of individuals to fight a federally funded project that may cause farmland conversions.

Land Evaluation and Site Assessment System

As part of the Farmland Protection Policy Act, a farming rating system was created to enable federal agencies as well as local governments to identify those projects which would cause the unnecessary conversions disallowed under the act. The land evaluation and site assessment (LESA) system rates the quality of land for farming as the first step and then rates the surrounding economic, geographic and social factors that evidences the level of development pressure being exerted on the area (Daniels and Bowers, 1997, 78). Each set of factors has a different point score attached to it.

The LESA system is quite useful to local governments looking to identify the land capability, soil productivity and important farmlands in their community. It is an objective, numerically based and most importantly flexible way to evaluate an area's lands. The information that it generates on land capability is the most useful. It indicates soil limitations and potential for crop production, pasture, and development uses (Daniels

and Bowers, 1997, 78). This covers uses for land for both agriculture and development. Local governments can include a variety of locally-oriented factors to the LESA equation. This adapts the evaluation and assessment to local needs and characteristics. By 1996, LESA had been used in 30 states by over 220 governments (Daniels and Bowers, 1997, 81).

Debt-Reduction-for-Easements Program

The 1985 Farm Bill included a debt-reduction-for-easements program. This program was created during a time of serious farmers' debt in the Midwest and southern United States. There was a reduced demand for U.S. crops as worldwide crop production soared. Crop prices were reduced and farmland values continued to fall. It became harder and harder for farmers to get loans to keep them afloat. The Farmers Service Agency had been utilized in the past as an agency of last resort for farmers who could not get loans elsewhere. The 1985 Farm Bill included a provision that enabled the Farmers Service Agency to reduce farmers debt obligations if they donated conservation easements on their non-productive lands (Daniels and Bowers, 1997, 81). Many farmers had inquired about this program, but few have actually participated in it. The 1985 Farm Bill also allowed the Farmers Home Administration (FmHA) to place easements on land that was obtained through default on FmHA loans.

Farms for the Future Act

The Farms for the Future Act was a state-oriented program created as part of the 1990 Farm Bill. It was touted as the first big break for states attempting to preserve their farmlands. It was the first time that federal funds were made available for direct assistance to state farmland preservation programs (Daniels and Bowers, 1997, 82). The

federal government would be allowed to lend money to states to purchase development rights or conservation easements on valuable farmland. States were to be allowed to borrow up to \$10 million a year for five years to be able to purchase these easements by matching one dollar for every two dollars obtained in loans. The program has been virtually extinguished and is no longer functioning.

1996 Farm Bill

After the Farms for the Future program failed to achieve the expectations for preserving farms and farmlands, the 1996 Farm Bill introduced new legislation that would provide more money to states and local governments that were attempting to preserve farmlands in their area. In a similar fashion to the 1990 Farm Bill, conservation easements could be purchased to preserve valuable farmlands. This time \$35 million was available over seven years. The federal government was trying to spur on new farmland protection programs at the state and local level being created to take advantage of the available federal funding. In Section 338 of the 1990 Farm Bill, the Secretary of Agriculture would purchase easements of not less than 170,000 acres but not more than 340,000 acres (Daniels and Bowers, 1997, 83). The main objective of this more recent program was to protect soils by limiting the non-agricultural uses of the land. The results of this program have been limited given the lack of adequate funding made available for the easement purchases on at least 170,000 acres.

A Modified Role for the Federal Government

The federal government needs to become more effective in its funding for farmland preservation. It is one thing to create a program and quite another to actively promote and actually implement it. The federal government has been involved in trying

to get farmers to use better farming practices to reduce erosions and run-off problems associated with agricultural operations. The 1985 Farm Bill included a Conservation Reserve Program for owners of highly erodible cropland. The federal government paid farmers of to remove these lands from production for ten years. This program has saved 670 million tons of soil per year (Daniels and Bowers, 1997, 84). However, according to the 1992 Natural Resources Inventory, 2.1 billion tons of cropland soil are still being lost each year to erosion. The Conservation Reserve Program has successfully encouraged the use of better farming practices that have lead to less pesticide use, cleaner water, and more wildlife habitat (Daniels and Bowers, 1997, 84). It also required the creation of conservation plans for highly erodible lands by the 1990, to be implemented by 1995. Without these plans, farmers can not take advantage of federal funding.

The 1990 Farm Bill also included a Wetlands Reserve Program that attempted to restore and permanently protect 975,000 acres of wetlands and adjacent farmland by the year 2002. As of 1997, the USDA had purchased easements on 375,000 acres of wetlands at \$600 per acre (Daniels and Bowers, 1997, 84).

The federal government will seemingly continue to have a small but direct role in farmland preservation. The main obstacle keeping the federal government from successfully preserving more farmland is the lack of coordination with state and local governments. While the federal government tends to influence farm incomes, state and local governments tend to influence farmland preservation. Both farm income policies and farmland preservation policies need to be better coordinated if they are to successful.

Farmland Preservation Programs

Purposes

The primary and most obvious purpose of farmland preservation programs is to protect and preserve agricultural lands from conversion to urban and suburban uses. There have been a wide variety of strategies used to preserve farmlands, ranging from traditional regulatory land use controls to incentive-based differential tax assessments. Each mechanism chosen to preserve agricultural lands is unique in that each region employing the tool has a different physical and political environment and a different set of circumstances mandating the need for a preservation program. No single tool works alone to reach the goal of effective farmland preservation. It has been found that a comprehensive approach to preserving agricultural lands works best, as it incorporates a variety of strategies to address a complex web of issues involved in the preservation process. An overview of each of these preservation strategies will be given below, followed by an evaluation of the effectiveness of each mechanism and the potential market implications and legal repercussions that could occur if the strategies are utilized.

Preservation Techniques

The first farmland preservation program was established in Maryland in 1956. This program utilized an incentives-based taxation policy as a means to help farmers remain viable in the face of high property taxes (Furuseth & Pierce, 1982, 192). This Maryland program saw these high property taxes as forcing farmers to sell their land because they could not afford the property taxes levied on their farmland. Such tax-based programs began the farmland preservation movement. These differential tax assessment programs will be discussed further below along with a variety of other strategies

including the following: agricultural zoning; agricultural districts; transfer of development rights, purchase of development rights; land banking; land trusts; right-to-farm laws; and urban growth boundaries.

The 'first generation' (Lapping, 1984, 175) of farmland preservation policies include differential tax assessments. The general objective of these tax assessments is to tax agricultural lands at their use value not their market value for a certain time period determined by the state or local government. The purpose of this lower assessment is expected to allow farmers to remain in a viable farm practice by reducing the property taxes paid. There are three different types of tax assessments: preferential, deferred, and restrictive agreements. The preferential programs makes an assessment on the current use of the land rather than the market value of the land. The preferential program does not penalize landowners if they convert their land to non-farm uses during the time period allotted for the preferential tax assessment (Miner, 1975, 56-57). The differential program works the same as the preferential, but does penalize landowners if they convert their land to a non-farm use during the time period in which they were to receive the use-value assessment (Miner, 1975, 57). A rollback tax is usually levied against the landowner equal to the amount of tax they saved in receiving the use-value assessment. To qualify for this assessment, a minimum level of farm income per acre must be demonstrated, the land must have been in agricultural use for a given period of time, or the land must have a minimum length of tenure within the family (Atash, 1987, 200). The third group of differential assessments deals with restrictive agreements. These agreements are made between the landowner and the local or state government. The landowner agrees to restrict the use of their parcel for a certain amount of years in return

for tax concessions. The landowner must give sufficient notice of a change in use before converting the land. The state or local government chooses who can and can not receive these benefits (Miner, 1975, 58).

The 'second generation' of farmland preservation programs include agricultural districting, agricultural zoning, purchase of development rights (PDR) and the transfer of development rights (TDR). Agricultural districts are established to allow landowners to take advantage of use-value assessments on their property. These districts are created for a fixed but renewable period of time. In order to qualify as an agricultural district, there is usually a minimum size of farmland required, a contiguity of parcels, and sufficient land available for an economically viable farming practice (Atash, 1987, 210). The first agricultural district was created in Suffolk County, New York in 1966 and an Agricultural District Law was created in New York 1971 as well. The Agricultural District Law called for the continued viability of commercial farming in the face of extensive urban development pressures. This law required that new regulations bear a direct relationship to public health and safety. It also limited the eminent domain provisions if active farmland was involved (Bills & Boisvert, 1987, 233-234). Landowners must petition the state to become an agricultural district and after a complex process of review can become established as such for a set number of years, after which the district can be renewed.

Agricultural zoning is also another approach to farmland preservation. It can include exclusive agricultural use zones, very low density controls, large lot zoning, subdivision restrictions, prime agricultural lands preservation, or lot frontage control (Conn, 1984, 99). The purpose of agricultural zoning is to direct residential growth into designated areas that are more amenable to development (Conaway, 1987, 277). This

helps to limit the number of dwelling units or other structures on prime agricultural lands.

The subdivision of lands by speculators are thus limited. Agricultural zoning reaffirms the priority placed on preserving farmlands.

The zoning chosen can be exclusive or non-exclusive. Exclusive zones prohibit all non-farm uses in the agriculturally zoned area, while non-exclusive zones focuses on farm uses, but does allow some non-farm use if certain standards are met (Atash, 1987, 201). Exclusive zones tend to be mandatory and are oftentimes quite effective at preserving farmland. It is important that these zones are consistent with the local comprehensive plan. The more pressure there is for development, the more support these zones get. Farmers in general tend to oppose any type of zoning because it reduces the value of their property by limiting the development potential. The public at large and politicians tend to like the agricultural zoning because it is simple and cost-efficient.

The PDR program is often seen as the most effective tool at permanently preserving land in agricultural use. With the PDR program, landowners are allowed to sell their right to develop their land to the state or local government, a land trust, or another conservation organization. In this way the land is preserved permanently in agricultural or open space use and the landowner is compensated through the sale of the development rights. The main problem with the PDR program is the cost. Oftentimes, there is little or no permanent or regular funds available to purchase these rights. Towns often use a bond issue or other public funds to get the money for such open space purchases (Daniels, 1991, 421). It tends to be well-received by both farmers and the public at large because of the permanent preservation of the land and the compensation it offers to farmers. It offers a middle ground between continuing in farming - and

potentially losing money - or selling the land outright to development - and losing the farm (Daniels, 1991, 421). The primary goal of a PDR program is to protect the best and most productive agricultural lands, as well as keeping farmland affordable for future generations, providing working capital to farmers, and helping landowners overcome estate planning problems (Freedgood, 1991, 329). PDR programs tend to redefine the countryside in a manner that is consistent with the demands of the both farm and non-farm interests (Pfeffer & Lapping, 1995, 33). Several states, concentrated in the Northeast, have utilized the PDR program to preserve farmlands and open space, proving to be quite successful in permanently preserving these areas (Freedgood, 1991, 329).

The TDR program is another preservation program comparable to the PDR. The TDR allows a landowner in a designated sending or preservation area to sell their right to develop their land to a landowner in a receiving or development area. The title to the land remains with the selling landowner (Rose, 1975). These sending and receiving areas should complement the town's comprehensive plan (Garrett, 1987). A market usually forms for the buying and selling of these rights. If the TDR program is lacking an effective and efficient market, the program will likely fail. The TDR program can be voluntary or mandatory. The voluntary program usually involves a variety of incentives, such as allowing increased development densities in the receiving area for participating landowners (Moore, 1991). There is a required number of development rights needed to build in the receiving area. Without the development rights, development can not occur. This process tends to be more complex and can be more costly than many towns and landowners are willing and able to endure. The TDR program tends to work better in already built-up areas and not as well in more rural areas. The effectiveness of the TDR

in preserving farmland has been questioned. The critical mass of farms is not maintained by a TDR program, thereby defeating the purpose of a farmland preservation program.

The 'third generation' of techniques deals with land banking, right-to-farm laws, and urban growth boundaries. Public land banking deals with a local government acquiring available land and 'banking' it for future development. In this way, a local government can control the pace and direction of development (Fisham, 1975, 61). The town is able to limit the premature development of land. The main objectives sought in land banking is the promotion of a rational pattern of development in the face of development pressures and urban sprawl, and the reduction in the cost of land through a land market that eliminates speculation (Fisham, 1975, 65). Instead of letting critical lands be developed, the town steps in and 'saves' it. The land can be put into a developed use in the future, but it is better managed and directed than if it were left alone. A town can lease the land to farmers for continued agricultural use as well. A publicly owned greenbelt effectively stops sprawl in its tracks. It absolutely precludes any development (Kelly, 1993, 95).

Right-to-farm laws have emerged in the efforts to protect farmlands as well. Although not considered a farmland preservation 'strategy' per se, these laws help maintain the viability of farms by protecting farmers from 'nuisance' suits. Nuisance lawsuits deal with the infringement on either a public or private right to the reasonable use or enjoyment of property. Public nuisances deal more with the health, safety and morals of the community at large, while private nuisances deal with the individual rights of a property owner. Landowners who live next to a farming operation may file a nuisance suit against the farm if the odors, noise, or other pollution coming from the farm

interferes substantially with the use and enjoyment of their property or negatively impacts the health and safety of the community (Lapping & Leutwiler, 1987, 211). Right-to-farm laws protect farmers from these claims. They state that standard farming practices are a reasonable land use despite the potential adverse impacts they might have (Lapping & Leutwiler, 1987, 211). These laws emphasize the importance of farming as an essential land use above all other uses. In order to qualify to receive the benefits of these laws, a landowner must demonstrate that they are a 'farmer' by definition. The definition of 'normal' operations needs to be flexible in order to ensure that the mechanisms being used are covered by the definition of 'farmer' (Fischel, 1984, 92).

Urban containment or urban growth boundaries are the last preservation strategy in the third generation of techniques. The best example and description of this strategy can be demonstrated by Oregon's land use planning program. An urban growth boundary (UGB) separates urban from rural land uses. It actually delineates, by a drawn boundary line, where urban development can and can not take place in a given area (Knapp & Nelson, 1992, 39-40). Inside of the UGB, development can take place, but outside the boundary, development is limited. The primary objectives of the UGB in Oregon are to: 1. preserve prime farmland; 2. allow for efficient provisions of public services; 3. reduce air, water, and land pollution; and 4. create an 'urban ambiance' (Knapp & Nelson, 1992, 40). The UGB should encompass sufficient area to be able to accommodate enough housing, industry, commercial, recreation, and open space uses until the year 2000. The land outside of the boundary will remain in rural use until the year 2000 as well. The UGB is a prime example of the use of a growth management strategy as part of a farmland preservation program. Most UGB programs are run by the state (Kelly, 1993,

53), not local governments, but this should not preclude a local municipality from incorporating an UGB into an overall farmland preservation program.

Effectiveness of Farmland Preservation Techniques

As a means to discuss the effectiveness of different preservation techniques, four different categories have been created: comprehensive-mandatory; integrated-voluntary; indirect-police power; and indirect-financial (Furuseth & Pierce, 1982, 196-199). The comprehensive-mandatory program includes both direct and indirect incentives as well as land use controls. Given that it is mandatory in nature, the strategies used under this type of program compel local governments and individuals to participate. In order to alleviate the effects of a mandatory program, financial incentives are used in conjunction with it. This comprehensive-mandatory approach emphasizes the importance of farmland preservation over other land uses. A comprehensive program can be expensive in its efforts to identify resources to be protected, and in the establishment of an administrative system to implement and monitor such programs (Furuseth & Pierce, 1982, 196). Programs included in this type of program are exclusive agricultural zones, differential tax assessments, and land banking. The comprehensive-mandatory programs have proven to be the most effective of the four categories.

The integrated-voluntary approach also uses a combination of direct and indirect incentives and controls, but it is voluntary in nature. Most programs or strategies utilized under this type of approach are centered around enabling legislation at the state level. The enabling legislation often allows local governments to implement regulatory mechanisms and offer incentives to farmers as part of an effort to preserve agricultural lands. The initiative for these programs tends to come from the residents of the

community itself, making it more politically acceptable (Furuseth & Pierce, 1982, 198).

Programs utilizing the integrated-voluntary approach include differential tax assessments, agricultural districts, TDR, and executive powers.

The indirect-police power approach uses traditional land use planning methods and tax breaks to preserve farmland. Any agricultural protection programs tend to be just one component of a larger pool of land use policies, therefore it can become a secondary concern if other land use issues are found to be more important. The main objective with such a program is to create more orderly urban growth and more efficient allocation of urban services and facilities. The state and local government itself uses its power to influence the shape and direction of urban growth (Furuseth & Pierce, 1982, 198). The tools used with the indirect-police power approach include differential tax assessment, traditional land use controls, and tax breaks.

The indirect-financial approach to farmland preservation attempts to create a favorable environment for agricultural operations mainly through financial incentives. The individual property owners themselves choose to participate or not. There tends to be little coordination and a lack of clear-cut goals with this approach. It is inexpensive and fairly simple to implement, but there is little strength behind it. One of the most negative side-effects of this approach is that the financial benefits offered are not restricted to farmers, allowing speculators to take advantage of the benefits as well (Furuseth & Pierce, 1982, 199). The strategies utilized with this last approach are the differential tax assessments, PDR, and TDR.

Differential Tax Assessments

The main benefit of this program is the direct financial benefits conferred through the property tax reduction. There are problems with the level of participation given that it is voluntary and that there are strict requirements called for in order to be allowed to receive the benefits. Some have found the requirements to be too restrictive, barring a significant of farm owners from being able to participate (Bills & Boisvert, 1987, 239). It should be noted that the strict requirements may help in keeping speculators from benefiting. Another problem found with this approach is that the land may actually become more attractive to speculators. The farmland may be preserved in the short-term, but once the time-period allotted to receive the use-value assessment is up, the land can be converted, meanwhile a speculator or farm owner has received reduced tax assessments (Knapp & Nelson, 1992, 128).

Agricultural Zoning

In order for an exclusive agricultural use zone to be effective, the expectations that the land will be developed must be reduced. The land values inside and outside the zone must be affected. Land values should be lowered in the exclusive use zone as development is transferred outside the zone, thus reducing the attractiveness of the exclusive use zone for development (Knapp & Nelson, 1982, 142). Land in close proximity to the exclusive zones will be found to be very valuable because of the close proximity to the non-market amenities that the farm-use zones offer. A problem with non-exclusive use zones is that families looking to buy land with small acreage will be

forced to buy larger tracts than they really need, therefore retiring land from agricultural use and letting it go idle (Knapp & Nelson, 1982, 128).

Purchase of Development Rights

The PDR program has its share of pros and cons as well. Generally, the main strength of the program is that farmland is preserved permanently, it is voluntary, and fair compensation is given to landowners who sell their development rights. PDR programs also turn a fixed assets such as land into a liquid asset of cash payment (Daniels, 1991, 423). PDRs often find a lot of support among the general public and farmers. The main weaknesses of the program are that it is expensive, administratively complex and that it is voluntary. Farmland may not be preserved because the town either does not have the money or people will choose not to participate. It is also criticized because all future development options are sacrificed (Daniels, 1991, 423), but this seems to be the point of the program. PDRs do not guarantee that farming operations will continue into the future either. As with any program, a PDR program alone will not preserve sufficient farmland.

Transfer of Development Rights

The TDR program runs into some of the same problems as the TDR, given the expense and administrative complexity, but it can also benefit and confer wealth on the landowners who need it the least. Landowners furthest from urban development are the most likely to participate, while landowners closest to the development pressures are least likely to participate. In this way, the critical mass of farming operations will not be preserved (Nelson, 1992, 470). Only those landowners who choose to participate will have their land preserved. Farming can still be destroyed.

Right-to-Farm Laws

Right-to-farm laws are only somewhat effective in preserving farmland. It does not prevent farmland from being converted to urban uses. It only keeps nuisance suits from occurring, it does not reinforce the agricultural economy or maintain farming operations. If farming operations become more intense or are not utilized for more than one year, the right-to-farm laws will not even protect them either (Knapp & Nelson, 1992, 128-129).

Urban Growth Boundaries

Urban growth boundaries are effective if they impact land values inside and outside the UGB. They are also effective when they limit the supply of buildable land and force the infill and redevelopment of parcels within the boundary (Alterman, 1997, 228). Development becomes more capital-intensive, not land-intensive (Knapp & Nelson, 1992, 43). UGB also affect the location of development and directs growth into appropriate areas, therefore preserving agricultural and other resource lands. Landowners within the UGB close to the border enjoy the rural amenities that the agricultural lands offer, therefore increasing the value of their land and encouraging more development within the UGB.

What Does the Future Hold?

In order for farmland preservation strategies to have any significant impact on saving agricultural lands, it is important to include the following components:

- mandatory land use restrictions;
- incentives;
- effective land use planning;
- flexibility;
- coordination;
- supralocal control; and
- citizen support & cooperation

These components will help to ensure that farms and the farming economy will remain productive and viable (Dunford, 1984, 192-193). It is also important for states to inventory the agricultural land resource base and establish an effective monitoring system for the strategies and programs in place (Bushwick & Hiemstra, 1987, 189).

The utilization of the Land Evaluation and Site Assessment (LESA) program is an effective way to evaluate the quality of the land to be used for agricultural purposes and assess the viability of the land to sustain the agricultural economy (Coughlin et. al., 1994, 7). The LESA was given more prominence with the Farmland Protection Policy Act of 1981 mentioned above. This act required federal agencies to use the LESA program in analyzing the impacts of their projects on farmlands. Several local governments have adopted LESA programs as part of their farmland preservation programs. A variety of factors are used within each part of the LESA system. The land evaluation (LE) component usually relies on Soil Conservation Service data on soil quality, while the site assessment (SA) component relies on several factors including those relating to the economic viability of farming, lack of development pressure, policies and regulations that encourage continued farming operations, and other miscellaneous considerations

(Coughlin et. al, 1994, 12). LESA has been found to be a reliable program in distinguishing land that should remain in agriculture and the land that should be developed for urban and suburban uses.

Summary of Findings

Given all of the programs outlined above, it is important to reinforce the fact that a package of tools is necessary. No one strategy will work alone. Once the package of tools is chosen, it is equally important to effectively implement, enforce and monitor the program. Farmland preservation efforts need to be linked to economic viability of farming. If this is not done, the programs utilized will be preserving open space, but not the farming economy (Daniels & Nelson, 1986, 31). The programs chosen should be as cost-efficient and administratively clear as possible. It should also be mandatory in nature in order to get people to participate, but also offer other incentives to off-set the rigid orientation of the mandatory program (Atash, 1987, 206-207). An integrated approach works the best to preserve farmland. There are generally three different kinds of trade-offs seen with farmland preservation: private versus public good, present versus future needs, and equity versus efficiency considerations (Furuseth & Pierce, 1982, 202). These trade-offs need to be weighed on a case by case basis in order to guarantee the appropriateness of the actions taken. State oversight with local implementation of farmland preservation programs (Knapp & Nelson, 1992, 158) enables local governments to consider the unique soil characteristics, climatic factors, and type of farming operations that will influence the success of the strategy chosen. The agricultural community itself should always be involved in the farmland preservation decision making and policy formulation process (Toner, 1984, 65).

Chapter 3: Strategies Currently Utilized By North Stonington

Introduction

Farmland continues to be threatened by suburbanization and other forms of urban development. Policies to direct and control where that development occurs are needed to ensure that agricultural lands are protected and preserved. As mentioned in the previous chapter, the northeast section of the United States has been at the center of this suburbanization process. Common strategies are being utilized by states in the northeast, with Vermont and Maryland leading the way. Connecticut has taken part in several of the farmland preservation systems, but has yet to adopt any truly innovative techniques on a wide scale. Historically, the strategies that have been utilized by the Town of North Stonington, Connecticut have been predominantly based in traditional land use zoning regulations. In recent years, the town has moved away from these traditional approaches and begun to implement more creative techniques such as the purchase of development rights program and the use of tax incentives to alleviate the burdens on farmers and subsequently preserve farmlands and open space. There seems to be more than adequate support for the preservation of the agricultural lifestyle that gives North Stonington its truly rural character. The Plan of Development encourages the preservation of agricultural lands and promotes efforts to sustain the agricultural lifestyle that contributes to the town's economy and residents' livelihood.

A Farmland Preservation Strategy in North Stonington

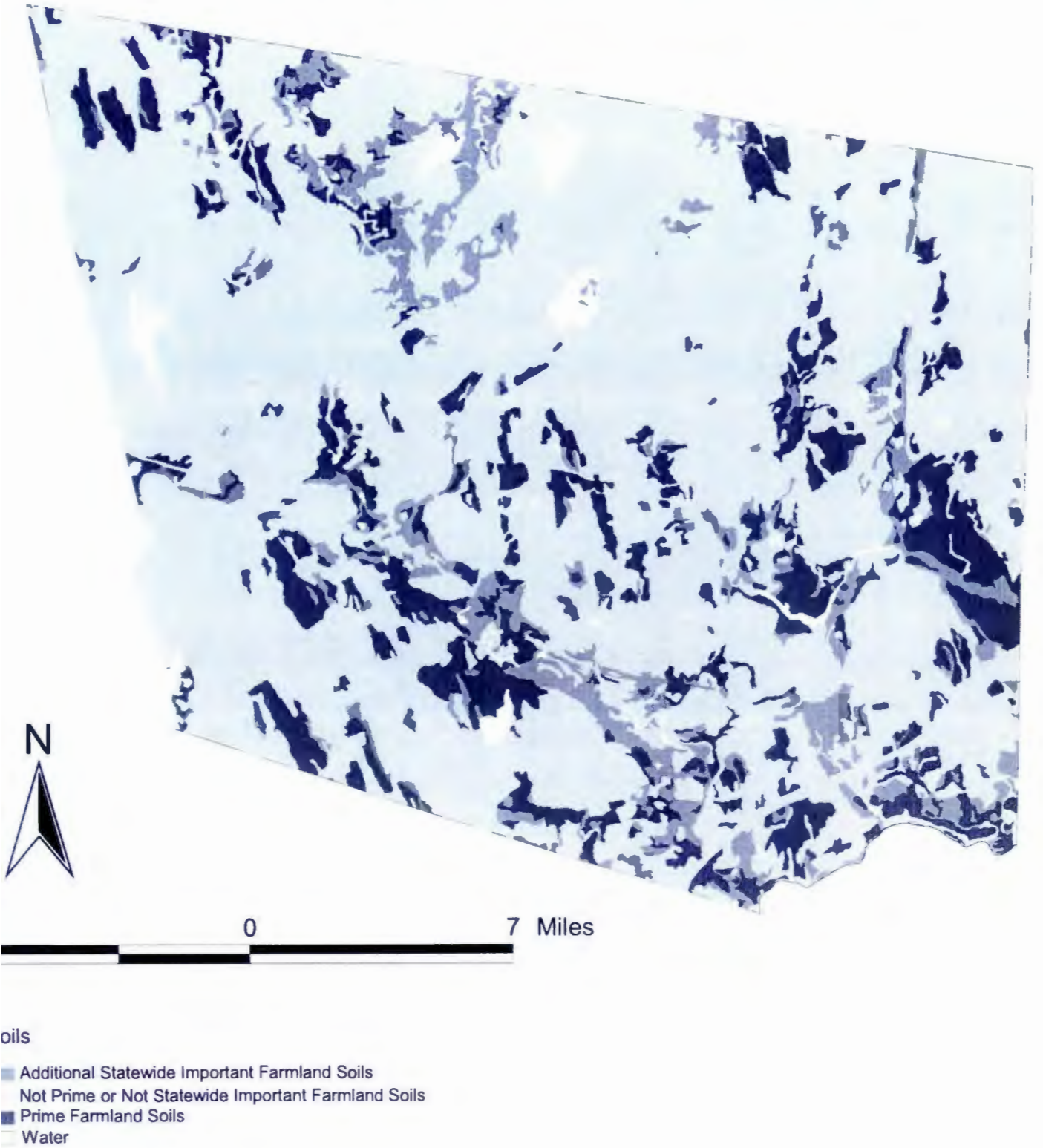
The Town of North Stonington would like to be able to accommodate 'reasonable' growth while still being able to support and provide a basis for its rich

agricultural heritage (Plan of Development, 1990, 8). The town can actively encourage the preservation of the 4,738 acres or 13% of the total land area that is currently devoted to agricultural uses before more of it is threatened and consumed by large development ventures. Figure 3 depicts the town's suitable farmland soils. As in every community, the physical characteristics of lands that make them most suitable for farming also make those lands suitable and quite attractive for non-farm development. Most of the agricultural lands in North Stonington are located in the dairy belt, extending approximately one mile in width from the Rhode Island border to Stonington-Mystic Road (Plan of Development, 1990, 17). Residential development pressures are greatest here. Most of the existing residential and commercial development is presently concentrated in the southeastern portion of town, but it starting to merge into the rest of the town threatening those natural and cultural resources that build the local character. Town residents and public officials would like to see development concentrated in the southern and eastern portion of town, with development being discouraged in the northern, more rural section of town in and around the dairy belt. This general desire to direct development to certain areas of town can be implemented through a growth boundary or agricultural zone or districting scheme used in other areas of the country.

Community Development Goals

The preservation of rural character and agricultural land depends on the extent to which farmers can withstand the pressure from oncoming residential and commercial development (Plan of Development, 1990, 27). It is important that towns such as North Stonington make farming attractive to farmers themselves. It is not enough just to preserve the lands alone. The farming economy needs to be advanced and actively

North Stonington Farmland Soil Suitability



- Additional Statewide Important Farmland Soils
- Not Prime or Not Statewide Important Farmland Soils
- Prime Farmland Soils
- Water

supported. The most successful farmland preservation policies are those that focus on making farming itself a viable business and livelihood, used in conjunction with tactics that aim to protect the physical environment.

The Plan of Development includes a list of community development goals that should direct the activities and strategies undertaken by the Town of North Stonington as it deals with future growth and development. The first three goals under ‘community character’ deal with the preservation of rural character and agricultural lands. The town should “preserve the present rural character throughout the town as much as possible”, “encourage the continuation of dairy farming and the growing of field crops”, and “encourage land uses, ownership, and land-development, conservation and preservation techniques that result in as much land as possible being retained in its natural condition or devoted to agricultural uses” (Plan of Development, 1990, 81). These three points alone should act as an impetus on the part of the Town of North Stonington to actively work to adopt and implement an agricultural lands retention strategy. This strategy will protect lands that create North Stonington’s rural character it is aiming to protect.

Preservation Techniques Currently Being Utilized

Traditional Land Use Zoning

As stated above, the farmland preservation tactics that have been implemented in North Stonington thus far deal with traditional land use regulations. Large lot zoning is prevalent throughout the town. The general purposes of this strategy is to spread out the population (lessening the impacts on the sewage disposal systems), promote the continuation of rural character, and allow privacy for each landowner. This strategy has helped to keep more intensive development from occurring within these designated

zones, in essence preserving the pastoral integrity of the area. It should be kept in mind that farmers are not always receptive to large lot zoning because it limits their ability to subdivide their land. Although this is the point of such a strategy, it is important to try to accommodate the needs of the farmers as much as possible while still preserving the farmlands and agricultural livelihoods. If the farmers do not buy into a strategy, it will not be nearly as successful.

The Rural Preservation District

The R80 Rural Preservation District contains most of the town's open space, scenic and topographic features and agricultural lands (North Stonington Zoning Regulations, 1985, 3-2). It is located in the northern three-fourths of the town and is largely undeveloped woodlands, with very low density development where it does occur. There is a strong desire to continue this low density development pattern and maintain the agricultural character of this part of North Stonington. In an effort to protect the area zoned R80, single family residential and accessory uses are the only ones permitted by right. Duplex and multi-family units are allowed by special permit, as are lodging houses, senior housing and home occupations. Churches, education facilities, recreational facilities, town buildings and public utility distributions are all permitted by right as well (North Stonington Zoning Regulations, 1985, 4-1). There are very few commercial uses allowed in the R80 zone. Those that are allowed include: aircraft landing fields, communications towers, day care/nursery facilities, earth excavating and filling activities, all for which a special permit is required.

Agriculture, agricultural facilities and accessory uses are the only uses permitted by right in any and every zone in North Stonington. Agricultural uses have been defined

in the Zoning Regulations as: the act of cultivation of land for the growing of vegetables, grains, grasses, trees, herbs, fruit or other horticultural products; the raising of livestock, farm animals and fowl; and or the producing of milk and other similar pursuits. Gardens, livestock or fowl, grown or raised mainly for home use shall not be classified as agricultural use. Agricultural facilities are defined as a facility consisting of at least five acres of land with buildings, which are mainly used for and incidental to agricultural use (North Stonington Zoning Regulations, 1985, A-1). These definitions prove to be helpful in keeping non-farming speculators from reaping the benefits of a farmland preservation strategy such as preferential tax assessments. Allowing agricultural uses to be located anywhere in town is proof of the town's desire to encourage the continued viability of farmlands and farming uses in North Stonington.

The R80 zone has a minimum lot area of 80,000 square feet and requires a 250 foot front lot width, 75 foot front setback, and a 25 foot setback for both the rear and side yards. Any duplexes allowed in the R80 zone must have at least twice the lot area required for the zone, and any multi-family units shall have at least the area required for the district multiplied by the number of apartments proposed (North Stonington Zoning Regulations, 1985, 5-1). This shows the town's desire to limit residential development in the R80 zone by exacting more extensive lot and dimensional requirements from the landowner. Also in the R80 zone, the maximum building height is 40 feet with no more than three stories total. The height limits may be exceeded for necessary appurtenant structures, like farming accessory building. The buildings must cover at least 10 percent of the total lot area (North Stonington Zoning Regulations, 1985, 5-3).

Temporary seasonal produce stands are allowed from June 1st through November 30th each year. The stands can only be utilized for produce grown on the premises and must be less than 100 square feet in size (North Stonington Zoning Regulations, 1985, 6-2). It is important that these stands be allowed in North Stonington because not only do they add to the scenic rural character but they also provide for an additional outlet for farmers to sell their produce locally, further supporting the farming economy.

Adoption of Innovative Preservation Techniques: Purchase of Development Rights

In addition to the zoning-based approach to preserving farmlands, the purchase of development rights (PDR) mechanism has been utilized by a few farms in North Stonington. In 1990, when the Plan of Development was last revised, five farms had participated in a PDR program, selling development rights for 376 acres to the State of Connecticut (Plan of Development, 1990, 27). The Public Act 490 has also benefited farms in North Stonington, with 197 parcels being part of the program. This Act allows for reduced tax assessments on farmlands, being based on use value not market value. The Plan of Development supports this use of preferential tax assessment programs.

Cluster or Open Space Subdivisions

One approach that the Town has referred to in the Plan of Development for reserving more land for agricultural and open space use is to allow cluster development in subdivisions. According to a survey conducted in 1990, the idea of these open space subdivisions have been received in a mixed fashion. There is great concern that clustering would allow more intense development than could be effectively handled by the sewage disposal systems, given the increased residential densities. Those that were more receptive to the cluster development option would only agree to allowing it if the

increased densities could be accommodated by individual sewage disposal systems. Sewering is not desired, especially for residential uses. Cluster developments would help to preserve more open space areas than a traditional subdivision. Since some development is likely to occur in town, the open space subdivision is one way of better managing that growth as it occurs, offering an alternative to the low-density, land-consuming traditional subdivisions. The open space or cluster option will better preserve rural character as future growth encroaches. Advances in individual sewage disposal systems allows for smaller lot sizes in residential areas and thus can be utilized in cluster or open space subdivisions. Such innovative techniques as the open space subdivision would seemingly fit into what the Plan of Development refers to as “attractive and imaginative subdivision design” (Plan of Development, 1990, 87).

The subdivision regulations state that the Planning and Zoning Commission ‘may’ require that up to ten percent of the total proposed subdivision area be required for open space, parks and playgrounds. This does not seem to have much effect. If the developer is actually required to set-aside a portion of the proposed area for open space, its location must be deemed proper by the Planning and Zoning Commission. Requiring open space, parks and playgrounds as part of a subdivision is based upon area population density, existing public open space and recreational facilities, as well as area need for such open space resources (Subdivision Regulations, 1985, 6-3). These open spaces can be deeded to the town, a homeowners association or land trust. Any such deeded open space shall be suitable for the open space purposes intended.

What Does the Future Hold?

With all of the development pressures that the Town of North Stonington is facing, ranging from casinos to theme parks, there is an obvious need to protect its agricultural lands and other open space resources. As has been found in other parts of the country, such as Oregon and New York, traditional zoning regulations have failed to provide adequate protection for farmlands. North Stonington is still using the same basic land use regulations that it had in place before this intense development pressure came into being. While traditional land use planning is key to the overall success of a farmland protection plan, it is but one part of a more comprehensive and extensive preservation strategy. The more innovative and effective techniques being utilized across the country will be discussed at length in the following chapter. These preservation approaches could prove to be quite effective at saving the agricultural lands of North Stonington.

Chapter 4: Farmland Preservation Strategies and Techniques

Introduction

There are several farmland preservation tools being utilized across the country and around the world. The most common strategy is the use of agricultural zoning and agricultural districts. This is often coupled with differential tax assessments on farmland within the zone or district. The combination of these two strategies has proven to be quite effective at preserving farmland. The use of the purchase of development rights is also very effective at permanently preserving farmland and other open space areas. Similarly, the transfer of development rights has been utilized as part of a larger preservation package, and is most effective when utilized in conjunction with an agricultural zone. Urban growth boundaries combine the use of physical growth limits with both agricultural zoning and differential tax assessments. There is also direct agricultural lands acquisition through the use of land trusts. Each preservation approach and their effectiveness will be covered in more detail below. Every strategy being employed to preserve agricultural lands is unique to the area for which it is being utilized. Each state, county or municipality creates a package of tools that are most appropriate for its agricultural, demographic, socio-economic, political and cultural environment. The method for choosing the most appropriate package will be discussed below as well.

Agricultural Zoning and Districts

What is Agricultural Zoning?

As stated above, the use of agricultural zoning is the most common approach to retaining and preserving farms and farmlands. The purpose of agricultural zoning is to

direct residential and commercial development into those areas that have the services and facilities available to accommodate them, while being able to preserve farmlands and farming operations (Conaway, 1987, 277-278). It discourages land uses that might adversely impact farming operations and limits haphazard and costly infrastructure development in agricultural areas, protecting those soils that are best suited for farms and farmlands (Daniels and Bowers, 1997, 105). Agricultural zones work best in areas where farms are in contiguous blocks, allowing for a critical mass of farms and more efficient farming. As with every zoning strategy, there should be a public benefit from the formation of an agricultural zone.

Local governments can not influence larger national farming policies, such as product pricing, however they are able to use local zoning practices to protect the land base that supports the farming industry. Every municipality has a different political environment, and therefore the creation of each agricultural zone needs to carefully consider the individual political conditions that dominate in order to be successful. Daniels and Bowers (1997, 197) have outlined six tests that agricultural zoning must meet in order to be found valid: have a public purpose; be based on the local comprehensive plan; avoid takings issues; be based in reasonableness; be inclusive not exclusionary; and be fairly and consistently applied.

There are generally two types of agricultural zones: exclusive and non-exclusive. Exclusive agricultural or farm use zones allow only farm buildings and farm-related housing in the zone (Daniels and Bowers, 1997, 115). Non-exclusive zones prefer agricultural uses, but do allow some non-farm development. These non-farm uses are usually directed to the least productive land on the lot. It serves to balance this non-farm

development with the over-arching goal of farmland preservation (Daniels and Bowers, 1997, 117). The exclusive farm use zone is used far less frequently than the non-exclusive approach because of its restrictive and inflexible nature. It is also more susceptible to 'takings' lawsuits because it may unreasonably restrict private property rights.

Exclusive Agricultural Zones

While exclusive farm use zones are more restrictive, they are quite successful where and when utilized. The State of Oregon has utilized these exclusive farm use zones as part of their statewide farmland preservation policy. Most of the components of the Oregon agricultural lands preservation program originate at the state level, but are implemented at the local level. They have found that in order for an exclusive farm use zone to be successful, it must affect the value of the land in and around the zone. Land values within the zone should fall relative to those lands outside the zone (Knapp and Nelson, 1992, 142). This occurs as demand for land outside the zone increases, transferring development from within the zone to outside the zone. Land values closest to the exclusive farm use zone will rise because of its proximity to the farm use zone and the rural amenities it carries with it.

There are several possibilities for the land values within the farm use zone. If land uses outside the zone negatively affect farming operations through spillovers, land values in the exclusive farm use zone will fall. On the other hand, land values within the farm use zone may rise with proximity to land outside the zone if there are expectations of future development there. Land values may also remain the same in the farm use zone if the land uses outside do not impact them at all (Knapp and Nelson, 1992, 142-143). It

is generally hoped that land values will remain low in the exclusive farm use zone so as to eliminate development expectations and speculation.

Non-Exclusive Agricultural Zones

Non-exclusive zoning often involves the use of large minimum lot sizes to limit the number of residential units allowed per acre. The size of each agricultural zone varies from town to town. Oftentimes, an effective size of the zone is equivalent to the minimum size of a viable farm operation in the area. The size of each viable farm also varies from region to region. These large minimum lot sizes maintain farming in large contiguous blocks and prevent the subdivision of farm lots for non-farm development. A large enough minimum lot size will tend to prevent residential landowners from being able to purchase such a large and expensive parcel (Daniels and Bowers, 1997, 117). It is generally believed that agricultural zoning should allow no more than one unit per twenty acres. One key component to the non-exclusive zone and large lot zoning is to allow some non-farm development as long as it does not interfere with farming operations. Successful large lot zoning balances farmland protection and allows for some non-farm development, making agricultural zoning more politically acceptable (Daniels and Bowers, 1997, 117).

Functioning of Agricultural Districts

Agricultural districts protect farming operations, conserve agricultural lands, and re-emphasize the importance of agricultural land as the preferred land use in the district (Conaway, 1987, 278). They are similar to agricultural zones except that they are established through a citizen initiative. Local residents must apply to the state in order to have their lands designated as part of an agricultural district. In New York, there must

be an initial petition to the county legislative body, where it is then referred to the county planning board and county agricultural advisory committee. Public hearings are held and if approved, the petition is forwarded to the New York Department of Agriculture for certification (Bills and Boisvert, 1987, 235). This is a lengthy and complex process that can and should be streamlined. One advantage is that it allows for extensive interaction between landowners, planners, legislators, and various state agencies. It also increases the public awareness of the program and demonstrates the importance of farmland protection (Bills and Boisvert, 1987, 235). These districts are temporary while the agricultural zones are more permanent. The agricultural districts can be renewed but do not necessarily have to be if the citizen support is not present (Furuseth and Pierce, 1982, 195).

Farmer Acceptance of Agricultural Zoning

Farmer are not always very receptive to the idea of restrictive zoning on their property. They like to have the option to sell parts of their property, that are isolated or not productive, to developers or potential homeowners (Kartez, 1984, 74). Farmers see their land as a resource not only to supplement the sale of farming produce and livestock, but also in the short-term as a source of quick cash and in the long-term as retirement funds. To address this uneasiness on the part of the farmers, some counties have utilized a sliding-scale approach to agricultural zoning. The sliding scale approach considers the individual size of the tract in determining the number of dwelling units allowed on the lot. The number of non-farm houses per acre decreases as the size of the farm increases. This allows smaller tracts of land to have higher densities than larger tracts. This approach recognizes that smaller tracts are oftentimes less productive and profitable than

larger tracts (Daniels and Bowers, 1997, 118). Farmers tend to agree with this approach because it has more flexibility than the more strict large lot zoning with a predetermined number of dwelling units allowed per lot. As with any zoning strategy the sliding scale approach requires extensive monitoring to determine whether or not it is working properly and whether or not new allotments needs to be made (Conn, 1984, 117).

Example of an Agricultural Zoning Approach

Maryland has implemented a state agricultural land preservation program which involves the use of strict agricultural zoning. Landowners petition the county and state to form an agricultural district and voluntarily agree to maintain their farms in agricultural use for a minimum of five years. Each landowner receives a lower tax assessment on their property and has the option of selling an easement to the state to permanently preserve their land in agricultural use. Agricultural zoning and use-value assessments are often used together. There are several qualifying factors that must be met in order for a farm to be included in the agricultural zoning district. First, the farm must be an existing, productive farm. Second, the farm must be at least one hundred contiguous acres or must be adjacent to an existing agricultural district. More than one farm can be joined together to form the necessary acreage. Third, if it is a crop or grain operation, fifty percent of the soils must be Class I, II, and III as designated by the Soil Conservation Service. Finally, the farm can not be located in an area that would be better suited for development because of its proximity to water and sewer facilities (Conaway, 1987, 280-281).

The above-mentioned ability to sell an easement to the state for permanent preservation of the land in agricultural use must be accompanied by a soil conservation

plan. The state appraises the property and determines the fair market value and the agricultural use value. The difference between the two is the easement value.

The text of an agricultural zoning ordinance should clearly state the purpose of the agricultural zone. The most common purposes of these zones are to: protect good-quality soils; maintain the critical mass of farms; discourage land uses that conflict with farming; designate minimum lot sizes; establish setbacks for farming buildings; allow farm related business for extra income; and protect public investment in property tax breaks on farmlands and the purchase of easements (Daniels and Bowers, 1997, 111). The text should be accompanied by a map of the agricultural zone, clearly demarcating the boundaries of the area.

The noted success of the Maryland program is due to high participation levels, intense development pressures, and demand for flexibility in the programs chosen to deal with the urban growth (Conaway, 1987, 283). The limitations to the Maryland program deal with the fact that some development continues to occur in the agricultural zones despite the strict regulations. There are also lengthy time requirements to sell easements to the state in that the state only accepts bids for these easements once a year. More flexibility is needed in this area.

Summary

Active participation is necessary for any agricultural use zone to be successful. Agricultural zoning programs should also be consistent with the state and local comprehensive plans, policies and objectives (Bills and Boisvert, 1987, 235). It should be noted that state enabling legislation often outlines whether or not agricultural zoning is

specifically allowed in each particular state. Connecticut and Rhode Island enabling legislation does not specifically allow for the use of agricultural zoning.

Differential Tax Assessment

What are Differential Tax Assessments?

All across the country and specifically in the Northeast, there is strong pressure on farmlands for development. There are also relatively low economic returns to farming. The combination of these factors has led to increased economic pressures on farmers to convert their lands to non-farm, residential and commercial uses. Some form of differential tax assessment programs have been implemented to address this problem in virtually every state in the country. States in the northeast have an especially long history of using this approach to make farms and farmlands more viable.

Preferential Tax Assessments

There are generally three types of differential tax assessments. The first is the preferential tax assessment. This deals with assessment of farmland based on the current use of the land rather than its value in the free market (Miner, 1975, 56). It allows for the assessment of farmland based on its value as a farm not on its potential value as a home-site. The farm use value is based on the quality of the soils and the net-income generated from the land. There is no penalty against the landowner if they decide to convert their land to a non-farm use.

In 1963, the Connecticut Open Spaces Act established a use value assessment program for farmers. In order to be eligible for the benefits, a parcel of land had to be at least twenty five acres and designated in the town management plan (Mackenzie and Cole, 1987, 253). This program offered little control over the ultimate use of the land.

The Connecticut program only utilized a land use change or conveyance tax, not a rollback tax, discussed further below. Under this preferential tax assessment program, any holder of farm or forest land could apply for the tax benefits. The landowners generally agree, without a binding contract, to keep their land in farm use for a designated period of time, typically averaging five years (Miner, 1975, 57).

Deferred Taxation

The second type of tax assessment is deferred taxation. It is similar to the preferential tax assessment, except that there is a penalty if the landowner decides to convert their lands to a non-farm use. If a landowner chooses to change the use of their property to a non-farm use within the designated period of time, they must pay a rollback tax equal to the amount of tax saved by the use-value assessment. The rollback tax can provide a source of revenue for a community if additional services and facilities are needed as new residents enter the area (Miner, 1975, 57). As revenues are accumulated from the rollback taxes, easements can be purchased on the farmland enrolled in the program or other parcels up for sale (Mackenzie and Cole, 1987, 258).

Restrictive Agreements

The third type of differential taxation is the restrictive agreement. This approach allows for an element of choice and flexibility for the state or local community, not the agricultural landowners. The state or local community determines who can benefit from the program. Once chosen, the landowners agree to restrict the use of their property for a set number of years, in return for tax concessions. If the landowner decides to change the use of the land, they must give sufficient notice to the state or local community before doing so.

Effectiveness of Use-Value Assessments

In order for these programs to be successful, it is important that the eligibility requirements be more restrictive than lenient. If the requirements are too lenient, too many different types of landowners will be able to benefit, not just farm and forest land owners. Farmers are in competition with developers for valuable agricultural lands. Farmlands are often converted to non-farm uses when the development value exceeds that of productive agricultural value (Mackenzie and Cole, 1987, 256). Use-value assessments may raise land prices if the benefits from the lower taxes are incorporated into the price of the farmlands (Mackenzie and Cole, 1987, 257). While this leads to higher profits for the present farm owner, future owners will have to pay more to acquire the land. Tax benefit programs need to ensure that both present and future landowners benefit.

As mentioned above with the deferred taxation program, a rollback tax is levied against landowner who prematurely convert their land to a non-farm use. These rollback taxes are essential to the success of a use-value assessment program. Without rollbacks, conversions to non-farm uses will only be delayed temporarily. They distribute the benefits of the use value through time. As stated above, benefits of the use-value assessment must benefit present and future farm owners. This is a critical component to any program looking to influence long-term land use trends (Mackenzie and Cole, 1987, 258).

Summary

Overall, use-value assessments will be effective if they offset the demand for developable land. These assessments offer a direct financial benefit to farm owners

participating in the program. Again, if the eligibility requirements are strict enough, speculators will be kept from benefiting, however if they are too stringent people will choose not to participate at all (Bills and Boisvert, 1987, 239). In deciding whether or not to participate, landowners must determine if they are better off with or without the use-value assessment. While they will benefit from lower taxes and feel less pressure to convert their land to non-farm uses, they will be sacrificing that opportunity to sell their land to non-farm uses or be subject to pay for the premature conveyance. If pressure from urban growth become too great, the benefits from the use-value assessment may not be enough (Bills and Boisvert, 1987, 242). Tax relief programs do not prevent conversions, especially if farmers see the sale of their property as more lucrative than participating in use-value assessment program (Alterman, 1997, 222). Use-value assessments are most successful in preserving farmlands when they are utilized in conjunction with agricultural zoning or agricultural districts.

Purchase of Development Rights

What is a Purchase of Development Rights Program?

Purchase of development rights (PDR) programs have been utilized more and more extensively in the past several years, with particular emphasis in the northeastern United States, to preserve farmlands and other open space. A PDR strategy involves the use of public funds to purchase development rights to privately held land (Daniels, 1991, 421; Freedgood, 1991, 329). The primary goal of a PDR program is to protect the best and most productive farmlands from development. Other goals involve keeping farmland prices down, providing capital to farmers, and helping deal with estate planning problems (Freedgood, 1991, 329).

Development rights are seen as separate from the many other rights to the land, such as the right to sell, mineral, air, surface and water rights, and the right to lease or rent the land. These development rights can be bought or sold as a means to preserve land, natural resources, farmland, wildlife habitat, scenic views, or other resources and amenities. The land must stay in farm or other open space uses and the purchased easement runs with the land (Daniels, 1991, 421). Maryland leads all other states with over 80,000 acres preserved under a purchased easement.

The northeastern part of the United States has been under intense growth pressure to convert rural lands to urban and suburban uses. The PDR helps to protect these rural land from such conversions. Connecticut began to utilize PDR in 1978. By early 1990, it preserved 17,313 acres on 114 farms, using over \$40 million in authorized funds (American Farmland Trust, 1990; Daniels, 1991, 422). However, the number of acres in farm use has steadily declined in Connecticut since the PDR was first introduced. In 1978, 455,731 acres were in farm use, and by 1982, only 444,242 acres were in farm use, showing a two and one-half percent decline in farmland. By 1987, only 398,400 acres remained in farm use, showing over a ten percent decline since 1982 (U.S. Department of Agriculture, Census of Agriculture, 1987; Daniels, 1991, 423). The purchase of development rights may still be helping reduce the acreage being converted to non-farm use, but more efforts are needed to stop this downward trend.

Selecting Land to be Preserved

There should be rather strict criteria in selecting those lands which should be preserved with a PDR program. The first and most important is that of the land's suitability for agricultural production. This can be based on the soil classifications

established by the Soil Conservation Service as well as on the productivity data available in the Census of Agriculture. The land evaluation and site assessment (LESA) system has also been utilized to select parcels for preservation. LESA is a numerically based evaluation system which determines which farmland is available for development and which should be protected, based on several established characteristics (Freedgood, 1991, 329) (See Chapter 5 and Appendix B for more information on the LESA system). The lands to be protected can also be determined based on existing threats to conversion, location, economic viability and cost of purchasing and preserving it. Selecting and purchasing lands for preservation in rapid growth areas is a potentially dangerous activity given that farmlands would be in the direct line of urban expansion. This may cause them to eventually go out of agricultural use if all the other land around it is converted to urban uses (Freedgood, 1991, 330). Again, the preservation of contiguous blocks is critically important. PDR alone does not guarantee the critical mass of farmlands nor that these farmlands will forever stay in agricultural use. However, recent evidence does suggest that the PDR program is helping to stabilize land values, giving farmers a sense of confidence in their future.

Benefits of a PDR Strategy

The PDR approach allows the land to be protected and the landowner to be compensated for the restriction on developing their land. This makes the PDR strategy more attractive to farmers than that of agricultural zoning because they are fully compensated for their losses. Again, given that farmers see their land as a short-term cash resource and long-term retirement fund, it is important that they are compensated for not being able to sell their land in the future. Landowners use the revenue obtained from

the sale of the development rights to retire debts, reinvest in farming operations, or save for future needs.

PDR programs offer a middle ground to farmers (Daniels, 1991, 421). Instead of having to sell their farm outright or continue farming with few financial gains, PDR allows farmers to sell only the development rights, giving them an additional source of income, while still being able to own and farm the land. They also have the option of being able to leave the land to future generations to do the same.

Funding

The critical component that determines the success of any PDR program is funding. If a state or local government has the financial resources to purchase these development rights to farmlands and other open space, the program works well. It can better protect and permanently preserve more lands than the above-mentioned zoning or tax incentives (Daniels, 1991, 421). If funding is not available to purchase the development rights, it will obviously not be effective.

Most PDR programs are funded through bond issues. Bonds are very useful, but they are time-limited and can not be guaranteed in the future. Ironically, when development rights are most available and least expensive -- that is in times of less development pressure and harsher economic downturns-- funding is less available (Freedgood, 1991, 331).

Table 2. Pros and Cons of a PDR

<i>Pros</i>	<i>Cons</i>
Fairness	Expensive
Permanence	Not based on financial situation of landowner
Reduced property taxes	Landowner paid for a development value not created by them
Greater security	Voluntary: may not participate
Fixed asset becomes a liquid asset	Administratively complex
Weakens credibility of zoning	Forecloses future development options
Voluntary	
Politically acceptable	

Source: 1991. Daniels, Thomas. "The Purchase of Development Rights: Preserving Agricultural Land and Open Space". *JAPA*, Vol. 57, No. 4.

Effectiveness of PDR

Table 2 outlines the main strengths and weaknesses of the program. One of the main strengths of the PDR strategy is that it is fair to landowners, given the compensation it offers. It also provides a permanent solution to preserving farmland and reduces the effects of the impermanence syndrome, where farmers feel that development of their farm is imminent and therefore give in to development pressures and sell their land to non-farm uses. With payment for development rights in hand, farmers have received compensation for sacrificing development potential and are no longer under pressure to sell out. PDRs are also flexible and gives landowners a choice of whether to participate or not. This makes it politically more acceptable, but can also cause low participation rates and less effectiveness.

The cost of PDR programs can prohibit states and local governments from participating. The cost of development rights can be almost eighty five percent of the fee simple purchase in some cases (Daniels, 1991, 424). Many communities do not have this kind of funding to utilize for such purchases. The ultimate goal of many PDR programs

is to maintain the critical mass necessary to maintain the farming economy. One of the main criticisms of the PDR approach, aside from its cost, is its inability to maintain this critical mass of farming operations. The land that gets preserved is often scattered in a haphazard fashion, not in contiguous blocks. Some places using the PDR strategy have begun to use funds to buy land to fill in the gaps between purchased areas. PDR is often more successful in preserving open space than at preserving and strengthening a local agricultural industry (Daniels, 1991, 422). It is important with any agricultural lands retention strategy that the farming economy be addressed and remain strong. In some communities, poorer landowners may not be able to afford to sell just the development rights, while wealthier landowners can. This means that those who need the most help do not benefit.

Summary

PDR programs have been quite successful at preserving farms and farmlands across the country, specifically in the northeast. The problems associated with the sheer cost of the program can seemingly never be overcome unless more permanent and or more multiple sources of funding can be established. Again, as with any and every other farmland preservation strategy, PDR can not stand alone. It must be utilized in conjunction with other preservation tools. Farmers tend to support PDR because of the compensation they receive. This helps make the strategy even more successful. PDR tends to be most effective where development pressures are the greatest because of the support it receives from both the public and the farmers, in response to the growth pressures, to preserve the land and rural character. As populations grow, so does the use of the PDR approach to preserve farmlands.

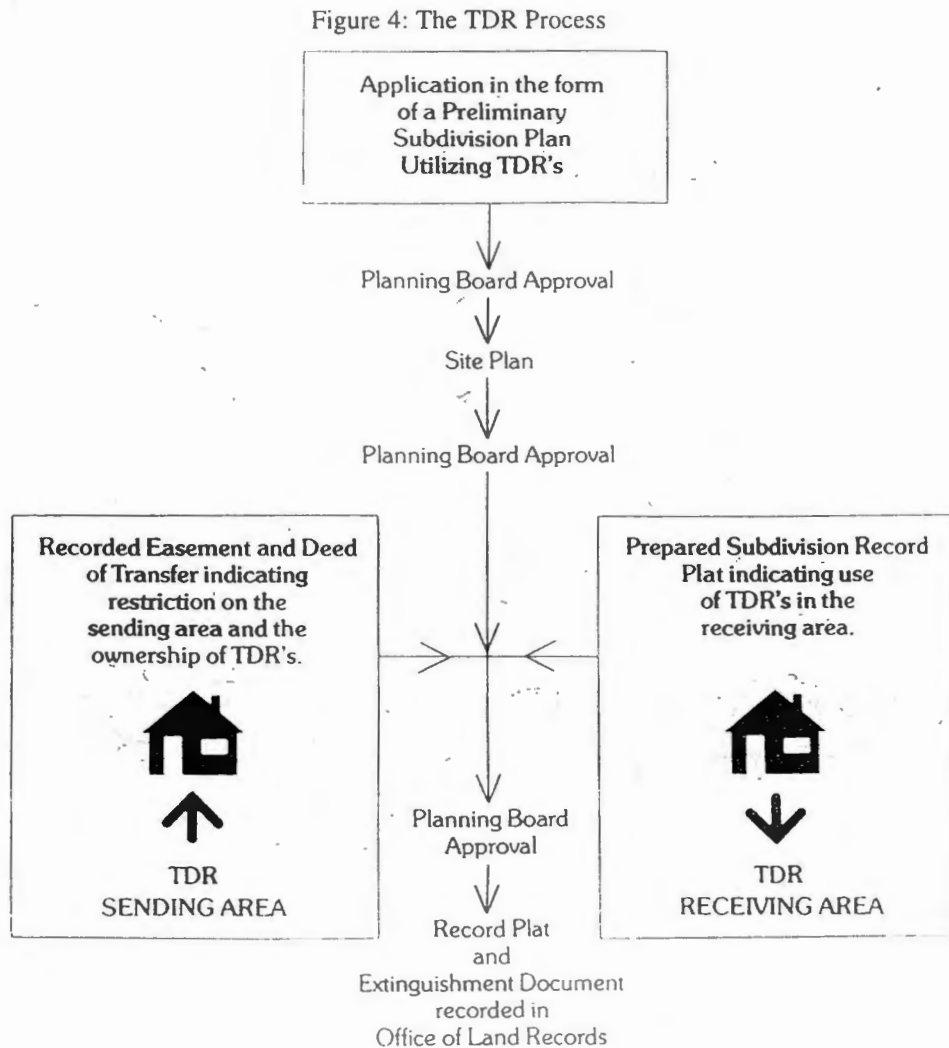
Transfer of Development Rights

What is a Transfer of Development Rights Strategy?

As discussed above, development rights can be separated from all the other rights associated with land. With the PDR program, landowners have the option to sell their development rights to the state, town or land trust, in order to preserve their land in agricultural use permanently. The transfer of development rights (TDR) program involves these same development rights, except that they can be sold and transferred from one area of a town to another. It does not retire the development rights like the PDR. In this way, development rights are not totally forgone, but simply transferred away from one area that is in need of preservation to another areas where development can be better accommodated. TDR allows for both preservation and growth.

There are four main components to a TDR approach. The first is the creation of a sending or preservation area and the second is the creation of a receiving or development area. Development rights are designated for both the sending and receiving areas. Both zones should be consistent with the local comprehensive plans and zoning regulations. The third component involves the creation of a pool of development rights in the sending area. These development rights allow higher density development than would normally be allowed when transferred to the receiving area. This acts as an incentive for landowners in the receiving area to buy development rights from the sending area. This is known as a density bonus for landowners in the receiving area. These landowners can not take advantage of this bonus unless they have the necessary development rights to do so. The last component of the TDR is a mechanism by which these development rights can

be transferred from one area to the other (Daniels and Bowers, 1997, 174). Figure 1 shows the process of transferring development rights between the sending and receiving areas.



Source: *Plowing New Ground: Agricultural and Rural Open Space Preservation Program*, Montgomery County, Maryland, 1990.

Sending Areas

Sending areas include those lands chosen for protection and preservation. The sending zone can be comprised of one large contiguous parcel or can be made up of several smaller areas. Choosing which lands make up the sending area should be based

on soil quality, natural and human-made resources, and location. If the TDR program is mandatory in nature, the landowners in a designated sending zone would have to sell their development rights. If it is voluntary, they have the choice of selling the rights or building to the density allowed under the underlying zoning (Daniels and Bowers, 1997, 174). Mandatory programs are more effective at preserving farmlands, but are also more politically tough to implement.

Receiving Areas

The receiving areas are very important in determining the success of the TDR. If there is not enough receiving zone area available to accommodate the number of development rights coming from the sending zone, the program will not work. To achieve this goal, the receiving area can be up-zoned to allow higher density development there. The general rule of thumb is to allow thirty percent to fifty percent more building units in the receiving zone than would have been allowed under existing zoning (Daniels and Bowers, 1997, 174). Given that this zone should be chosen because of its ability to accommodate development with public services and facilities, higher density development should be able to occur there. If development is going to occur, it is better to concentrate it in areas that can efficiently and effectively contain it.

Determining the Number of Development Rights

In order to demonstrate how TDR works, the Montgomery County, Maryland TDR program will be briefly described. As with every other TDR program, the sending area was established first. Once the 78,000 acre sending zone was created, it was down-zoned from one building unit per five acres to one unit per twenty five acres. The county government then gave landowners in the sending zone one transferable development right

for every five acres owned in the sending area. The receiving area landowners were allowed to build one extra dwelling unit for every development right purchased from the sending area, thus creating the incentive part of the process. In this way, the Montgomery County TDR program down-zones the sending area, decreases the number of development rights allowed under current zoning in the sending area, and increases the number of development rights allowed in the receiving area if transferred (Daniels and Bowers, 1997, 175).

The Montgomery County preservation program combined several preservation techniques to protect its agricultural lands. It had a comprehensive plan, agricultural zoning, development permits for approving construction, a capital improvements plan, a public TDR fund, use-value assessment for farmlands, and voluntary agricultural districts (Daniles and Bowers, 1997, 182). The Montgomery County Farmland Preservation Program includes an agricultural easement program, an agricultural land preservation foundation, environmental trusts organizations, as well as the TDR program. See Appendix C for a more detailed description of the Montgomery County Farmland Preservation Programs.

The Central Elements of A TDR Program

As mentioned earlier, the two most important elements of a TDR program are the two zones which are created for preservation and development. The preservation area is designated as the sending zone and the development or growth area is designated as the receiving zone. A certain number of development rights are designated for both the sending and receiving areas. Clear definition of these two zones is essential to the success of the TDR.

It is also important that a market is created for these development rights. TDR banks help create this market. TDR banks are usually controlled by the local or regional government. They can buy and sell development rights as a means to keep the market flowing. If there are too few development rights established in the sending area, demand will outstrip the supply. If on the other hand there are too many development rights in the sending area as compared to the area available to accommodate them in the receiving area, supply will be greater than the demand. It is critically important that there is an appropriate balance in creating these development rights in the two zones. In order for the program to be effective, the number of development rights designated for the sending area must be accommodated in the receiving area. Landowners will not buy development rights they can not utilize.

In order to have a successful TDR program, Daniels and Bowers (1997, 177) suggest the incorporation of the following key components:

- Simplicity;
- Adequate incentives;
- Distinct sending and receiving areas;
- Growth management plan;
- Development pressure and demand for housing;
- Political support;
- Public support;
- TDR bank; and
- Adequate technical and support staff.

Effectiveness of the TDR

Local communities are attracted to the TDR because it involves the use of private not public funding. The individual landowners must buy and sell the development rights between each other. It is also attractive because it offers compensation to landowners

who are subject to restrictive zoning on their property. Zoning may prohibit them from being able to develop above certain densities. Instead of simply suffering from these restrictions, landowners can be compensated through the sale of development rights to landowners in the receiving area. TDR also helps keep the cost of farmland low for future generations. By directing growth into those areas that are better able to accommodate it with roads, schools, public sewers and water facilities, the community is better able to manage the pattern of growth and development in the area (Daniels and Bowers, 1997, 172).

There are also some drawbacks to the TDR approach to farmland preservation. Some county or local governments adopt TDR programs and find that they do not get utilized as much as they should. They become ineffective because of the lack of participation. Making a TDR mandatory solves this problem. A second problem of inadequate planning staff can also arise. It is important that communities hire consultants or have a strong planning staff to support this administratively complex process. Some areas adopt a TDR strategy and find that they do not really need it because their existing land use strategies work well already. TDR is not needed nor does it work everywhere. Another potential problem discussed above is the imbalance between supply and demand of development rights. Upzoning receiving area parcels helps address this problem (Daniels and Bowers, 1997, 188-189).

TDR in Hebron, Connecticut

One example of the use of a TDR program can be found in Hebron, CT. Section 8-2 of the Connecticut General Statutes enables towns to establish TDR programs. The program in Hebron was created to preserve endangered natural resources surrounding

Amston Lake. The purpose of the program was to transfer development away from the Amston lake District and send it to receiving areas that had more capacity to better handle that development. In this way, the TDR program was mitigating the negative environmental impacts that could potentially harm the lake, pollute area groundwater supplies, and cause increased congestion in surrounding neighborhoods (Hebron Zoning Regulations, 1996, Section 8.21). The designated receiving area is located within the Sewer Service District and therefore is equipped with the necessary infrastructure to accommodate additional development. The Hebron TDR program consists of three separate stages: Certification of Transferable Development Rights; Transfer of Transferable Development Rights; and Use of Transferable Development Rights. A more detailed description of each stage can be obtained in Appendix D.

Summary

Communities use TDR programs to essentially anticipate future development needs and direct them to appropriate areas. It can be effective at preserving farmlands, but needs to be utilized with other land use controls. Agricultural zoning works well in conjunction with TDR strategies. Development within the agricultural zone can be transferred to lands outside the zone. Lands in the sending zone should also qualify for use-value tax assessments as an additional incentive for farmland preservation. Daniels and Bowers (1997, 189) outline several outcomes of a successful TDR program. If the above-mentioned components are addressed and included these outcomes should occur:

- Large number of acres preserved in sending area;
- Contiguous or nearly contiguous areas preserved;
- Limited non-farm development in sending area;
- No takings challenges;
- Low cost to government;
- Monitoring and enforcement; and
- Durability over time.

If these features are present in a county or local community after the implementation of a TDR, it is likely to be effective at preserving farmland and other open space areas now and in the future.

Urban Growth Boundaries

What is an Urban Growth Boundary?

Urban growth boundaries (UGB) can be simply defined as lines drawn around a town or city that defines the limits of urban growth (Kelly, 1993, 53). They classify and separate rural from urbanizable land. Their primary purpose is to “contain urban development within planned urban areas where basic services, such as sewers, water facilities, and police and fire protection, can be economically provided” and to “provide for an orderly and efficient transition from rural to urban land use” (Daniels and Bowers, 1997, 136-137). It is a growth phasing strategy that directs and limits the onslaught of urban growth to specific areas of a city or town, at a particular point in time. They create an ‘urban edge’, beyond which urban development can not occur. While the most rigid source of the UGB is the state, local communities have adopted varying degrees of UGB to direct the timing and location of their growth and development.

The Primary Elements of an UGB

Urban growth boundaries are utilized to stop sprawling urban development and to promote more efficient and compact form. Compact development is less expensive to service with public facilities because fewer water and sewer lines, as well as roads have to be extended into otherwise rural lands.

Before actually drawing the UGB, a county or region should do projections for population, housing needs, and land needs for residential, commercial, industrial and public spaces. Then an inventory of the public facilities and their capacity and projected needs into twenty years should be conducted. After the inventory is complete, an estimate of a twenty-year supply of buildable land should be completed. This inventory should consider such factors as topography, land needs, and the availability of public facilities, obtained from the projections and estimates mentioned above (Daniels and Bowers, 1997, 138). This should lead to the creation of an appropriate sized boundary that contains sufficient area to accommodate future growth and development. The local comprehensive plan and zoning regulations should be amended to reflect the location of the UGB.

Once the UGB is drawn, an agreement should be made between a city and county or a city and township to designate this growth boundary in their region. This agreement should state that urban services – specifically water and sewer lines – should not be extended beyond the boundary. This is the essence of an UGB. If public facilities are not extended, sprawl will be curbed. There should also be a stipulation that the growth boundary can change with time as the region's needs change. The growth boundary

should be monitored at least once every five years to determine whether or not the lines need to be changed (Daniels and Bowers, 1997, 138).

Land inside the growth boundary should be zoned to encourage higher density development. This land within the boundary has been chosen based on its ability to accommodate growth and development, and therefore should be utilized as a zone for infill and expansion. Outside the UGB, lands should be zoned for agriculture or conservation purposes. This not only protects the land for farms and farming operations, but also protects valuable water supplies, wildlife habitat and sensitive rural lands (Daniels and Bowers, 1997, 138). The agricultural zoning also ensures that residential and commercial development will not simply leap over the growth boundary and development outside. A buffer zone of approximately 10 to 20 acres in width should be placed between the UGB and the agricultural zone, to make the transition between the growth and conservation area smoother (Daniels and Bowers, 1997, 141).

Establishing an UGB requires extensive foresight to anticipate the future development needs of an area. Most growth boundaries try to incorporate enough space to fill land demands for a twenty-year period. Since population projections can fluctuate so greatly over time, it is often very difficult to effectively and efficiently project a twenty-year land demand. Commitment by the state enables the effective implementation of the growth boundary.

UGB in Oregon

The most well-known example of an UGB is that used in Portland, OR. The statewide preservation program in Oregon requires local governments to prepare local plans and implementation strategies that include twenty-year growth boundaries (Kelly,

1993, 53). It has been found that Oregon's farmlands are less threatened by urban sprawl and more threatened by suburbanites' home construction, and the on-site septic systems and wells that accompany them. They can pollute farmlands and compete with farming operation for needed water resources. The UGB complements the agricultural zoning that surrounds the growth area. To date, about two million acres of Oregon's twenty-eight million acres of privately owned land are contained in the growth boundary (Daniels and Bowers, 1997, 140). The role of the state government in the UGB process gives it legitimacy.

Within the growth boundary, development is allowed to occur at higher densities than would normally be allowed under current zoning. The approval process will be streamlined to deal with the increase in development proposals that will occur given the higher density development allowed. These approvals will come more quickly and predictably than in areas outside the growth boundary (Daniels and Bowers, 1997, 140). If the boundary is pragmatically chosen, the market demand will be able to be met within it.

Lancaster County, Pennsylvania

One of the only growth boundaries in the eastern United States is located in Lancaster County, Pennsylvania. There are a dozen UGB within Lancaster County, however they are not legally binding under Pennsylvania law. They are the only jurisdiction in the country that is utilizing the purchase of development rights program to obtain land for its UGB. County-wide population growth projections were made for a twenty year period, and from this the necessary amount of land needed to accommodate that population was calculated. The growth boundaries were drawn and areas outside the

boundary were zoned for low density agricultural development at one building per twenty-five acres (Daniels and Bowers, 1997, 141). This UGB is very similar to its western counterpart in Oregon.

Baltimore County, Maryland

An example of a smaller yet equally effective variation of the UGB is utilized in Baltimore County, Maryland. They utilize a 'urban/rural demarcation line' to stop sprawling development from entering the countryside. Sewer lines and water facilities are not allowed to extend beyond this demarcation line. The rural lands beyond the line are zoned for agricultural uses at one development unit for every fifty acres of land. There has also been the purchase of over 15,000 acres for conservation easements beyond the urban/rural line (Daniels and Bowers, 1997, 143). This form of a growth boundary is an effective and efficient way for a smaller area to take advantage of the benefits of a larger UGB.

Effectiveness of the UGB

There are several advantages of the UGB. Most importantly, growth boundaries influence the location and timing of future development, enabling more orderly, gradual, and phased growth patterns (Daniels and Bowers, 1997, 138). UGB can also potentially lower capital operating costs through the constrained development, minimizing the negative impacts of growth on the community (Kelly, 1993, 54). The success of any growth boundary will depend on the commitment of the local and state governments in maintaining the boundary (Alterman, 1997, 224).

One problem associated with an UGB is the possibility of leapfrog development. Some speculators and developers will simply jump over the boundary and develop

outside of it. UGB also do not address the need for adequate public services and facilities within the boundary, nor does it address the fiscal impacts of growth within the boundary (Kelly, 1993, 54). The enforcement of these UGBs needs to be more aggressively pursued.

Summary

As with every other previously mentioned farmland preservation strategy, UGB need to be utilized in conjunction with other preservation tools. If changes need to be made in the lines of the growth boundary, it should be done in a manner that is consistent with the surrounding agricultural uses, ensuring that the vitality of the agricultural economy is maintained. These growth boundaries help control the location of infrastructure, limit sprawl, and protect blocks of farmland and open space. They utilize land use planning, capital improvement programs, economic development plans and phased growth strategies (Daniels and Bower, 1997, 144) to direct seemingly inevitable development to areas that can best accommodate it without threatening the integrity of area farmland and open space.

Land Trusts

What is a Land Trust?

Land trusts are privately run non-profit organizations whose primary purpose is to protect natural areas and open space (Daniels and Bowers, 1997, 194). Given that federal efforts at farmland preservation have been weak, these private organizations have become increasingly useful in preserving agricultural lands. Land trusts are run on a voluntary basis, making them more attractive to landowners who do not want stringent restrictions placed on their land. An example of a state-level trust is the Massachusetts Farmland and

Conservation Trust. The only national-level trust organization is the American Farmland Trust (AFT). The AFT has the dual-purpose of stemming the loss of viable farmlands and promoting farming practices that secure a healthy environment (Daniels and Bowers, 1997, 195). Both of these organizations are devoted to the stewardship of farmland, making efforts to preserve these lands and other open space for future generations.

Function of Land Trusts

Land trusts are able to preserve farmlands and open space through three different strategies. The first is through the purchase of conservation easements. The second is through gift or donation of development rights or conservation easements. The last is through the bargain sale of land or easements through partial cash payment and partial donation (Daniels and Bowers, 1997, 199). Donations made to a land trust are tax deductible, acting as a further incentive for landowners to participate.

Land trusts rely on membership dues, donations and any federal or foundation funding they can get to purchase these conservation easements. One way for land trusts to get the support they need to preserve farms and farmlands is to educate landowners about the financial benefits of preserving their land. They should also inform landowners about the assistance they can provide them in estate planning, environmental laws, and planning processes (Daniels and Bowers, 1997, 197).

Before purchasing the easement or accepting a donation, land trusts need to do a title search on the land. If there are any hazardous waste sites or potentially dangerous sections of the land – such as an extremely steep slope area or unsafe water body-- the land trust will be liable for any clean-up of the waste or accidents that could occur on the property. Some banks even require an environmental assessment to be conducted on the

property before they will secure a loan for the land trust (Daniels and Bowers, 1997, 198).

This investigation of the land also helps them determine the easement value of the land, which is based on the difference between what the value of the property is worth in the free market with and without the easement.

Land Trust Protection Process

Daniels and Bowers (1997, 205) outline the essential steps needed in the land protection process. They are listed as follows:

1. Land trust staff meets with landowner and visits the property;
2. Identify landowner's needs;
3. Research the conservation value of the property;
4. Identify the appropriate protection tools;
5. Appraise the fair market value/easement value of the property;
6. Negotiate the purchase price;
7. Negotiate the details of the conservation easement or land purchase;
8. Conduct the title search and contact lenders to sign subordination agreements;
9. Obtain a land trust approval to accept or purchase the conservation easement or property;
10. Develop a management plan for the property;
11. Raise the money and purchase the easement;
12. Monitor the property once a year;
13. Keep records of visits to the property (baseline documentation); and
14. Enforce the terms of the easement if necessary.

These fourteen steps help to ensure that the preservation and protection of land can be efficiently and effectively accomplished. They can act as a road-map for a new land trust that is formed in a community to preserve agricultural lands and other open space areas.

Effectiveness of Land Trusts

Land trusts offer a viable alternative to use-value assessments, PDR and TDR. As with all three of these programs, land trusts are voluntary and thus participation levels may be low. Also as with these three other preservation alternatives, land trusts need to have regular monitoring of the land involved to make sure it remains in agricultural use.

Land trusts need to make sure that the land they have purchased or obtained through donation follow the terms of the easement. Violations can include developing the land when the terms of the easement preclude such activities. If there are violations of the easement, land trusts are responsible. If they do not pursue these violations, they will lose their integrity and value as a preservation organization (Daniels and Bowers, 1997, 209).

Land trusts offer a sense of leadership needed in preserving farmlands and open space. They also provide an avenue for educating the public on the benefits of farmland and open space preservation. Land trusts help manage community growth and development, helping to preserve valuable lands, influencing the location of growth and development. If the land trust purchases land, developers will have to go elsewhere to construct their projects. Land trusts are effective at protecting land that zoning, agricultural districts and tax breaks may not have been able to protect (Daniels and Bowers, 1997, 215).

Summary

Although it seems that zoning and tax incentives will continue to be the primary method for preserving farmlands and open space, in the past ten to fifteen years, a new emphasis has been placed on the important role of land trusts in preserving these valuable lands. One-third of all active land trusts have been formed since 1984 (Daniels and Bowers, 1997, 197). The one very important and central quality of land trust preservation efforts is the permanence that it carries with it. Unlike the changing nature of zoning and the temporary nature of use-value assessments, the purchase of conservation easements offer a permanent solution to the loss of farms and farmlands. They offer a complementary role to the other farmland preservation strategies being utilized across the

country. Again, land trusts are most effective when used as one component in a larger agricultural lands preservation policy.

Choosing the Package of Tools

How to Choose the Appropriate Package of Tools

The overall preservation package should be as cost-effective and least complex as possible. It should also be mandatory, because while the voluntary nature of some of the above-mentioned strategies makes them more politically acceptable and administratively streamlined, they are far less effective at preserving large amounts of farmland.

Mandatory techniques set the basic context for the preservation process and act as the central feature for the agricultural lands protection. They can be supplemented with voluntary techniques that complement the more restrictive tools. The program should also be based in state enabling legislation and be consistent with local comprehensive plans (Atash, 1987, 206). These last two factors give the strategy legitimacy.

One of the first things that a community must do in setting up a strategy to preserve farmlands is involve the public in the process. Local participation from all of the citizens and specifically the farming community is essential to its success (Alterman, 1997, 223). Without the support from the public at large and the political body in the area, the program will not succeed. One of the most important criteria in determining the success of a program is to make sure it is politically acceptable (Furuseth and Pierce, 1986, 199). The local politicians will have the final say over whether or not the programs will be utilized.

Integrated packages of tools are the most effective preservation strategies. Policies that combine mandatory tools with a comprehensive package of land use

strategies and incentives have the most success (Furuseth and Pierce, 1986, 200). The following seven elements should be part of any farmland preservation strategy (Dunford, 1984, 193):

1. Effective land use planning;
2. Incentives;
3. Mandatory land use restrictions;
4. Some supralocal control;
5. Flexibility;
6. Coordination among public policies; and
7. Citizen support and cooperation.

Even with a solid package of effective preservation techniques, it is equally important to have effective implementation and enforcement of the strategies at the local level (Daniels and Nelson, 1986, 31). Local implementation allows for the various soil, climate, and farming practices unique to the region to be considered in the process (Kanpp and Nelson, 1992, 158). Generic, cookie-cutter preservation plans will not work. The local governments participating in the process tend to be less aggressive in the implementation and enforcement of the program, and some state or regional oversight and legislative authorization is required for effective protection of farmlands.

Conclusion

It is important that farmland preservation is linked to maintaining the commercial viability of farming (Daniels and Nelson, 1986, 31). It is not just preserving the land that farming takes place on, it is also the preservation of the vitality of the farming economy. There are three trade-offs that a local community must make in setting up a farmland preservation strategy in their area. They must balance the public versus the private good, the present versus the future perspective, and equity concerns versus efficiency (Furuseth

and Pierce, 1986, 202). A sufficient balancing of these dichotomies will help advance an effective farmland preservation policy. Mandatory programs have had the most success in preserving farmlands and should continue to be seen as the strongest and most effective way to stop the spread of urban and suburban development.

A combination of social, political, and economic factors, as well as more quantitative data on the number of conversions of farmlands to non-farm uses will all play a central role in determining what type of strategy gets chosen in any given area. Planners, public officials and the citizens as a whole need to be aware of all of these factors and understand how they work together and as well as separately to influence the shape of our lands and the patterns of growth and development that will impact the character of our towns and the livelihoods of our residents.

Chapter 5: Recommendations and Implementation

Introduction

In establishing an effective farmland and open space preservation program for North Stonington, CT, there are several factors that need to be considered and subsequently incorporated into the preservation plan in order for it to be successful. Several of the various preservation techniques being utilized across the country have been discussed in previous chapters. A package of tools will now be selected from these techniques and become part of an overall farmland preservation strategy for North Stonington. The techniques chosen will be tailored to the geographic, demographic, economic, political and social characteristics of the town in an effort to create a practical and efficient program that will effectively protect the area's agricultural and open space resources. These recommendations will be reinforced with steps that should be taken to actively implement the program.

Ingredients for a Successful Plan

There are several key ingredients that need to be included in a successful farmland preservation strategy. The first is to maintain the local farming economy. The second is to generate support from the farming community for the preservation program. The third is to understand and address the political realities that exist in the community. The last is to anticipate the development needs of the community for at least a twenty year period. Each of these four components will be described in more detail below.

Maintenance of the Local Farming Economy

The seemingly most obvious component in effectively preserving farming as an industry is to make farming itself profitable. It is important that communities encourage the maintenance of the local farming economy through supporting farmers markets and roadside stands. Farmers should also be able to easily expand or alter their businesses in order to remain competitive as markets change (Daniels and Bowers, 1997, 12). If farmers are operating a successful business they will be more likely to support a farmland preservation policy. The preservation of local farms and thus local farming operations can be seen as a form of economic development for the community. It creates jobs, offers investment opportunities, generates income for the farmer, provides an outlet for farm-support businesses, and diversifies the tax base (Daniels and Bowers, 1997, 17).

Attaining Support from the Farming Community

Another one of the most important ingredients to any agricultural lands retention strategy is attaining support from the farming community. Without support from this group, the preservation plan will not be successful. As a first step, the farming community should be contacted and brought into the process early on. It is important to understand farming from a farmer's point of view (Daniels and Bowers, 1997, 23). They should be involved not only in determining which lands should be preserved, but should also act as a source of valuable information needed to successfully choose the appropriate tools to preserve these lands. They know most about the farmlands in the area and should be a primary force in creating the program. They should also act as a source of generating community support for the preservation program that is eventually put together.

Other citizens in a predominantly rural community may be more receptive to a planning proposal if they see that the groups most affected by the strategy are in support of it. It will also be accepted more readily by the political community if it is shown that the farming community supports it. Farmers are often heavily influenced by the actions of other farmers in the community as well. Once one farmer starts to sell out or conversely participate in the preservation process, other farmers are likely to follow in stride (Toner, 1984, 67). Farmland protection efforts acknowledge the importance of farming to the community and show farmers that they are supported in their everyday agricultural activities (Daniels and Bowers, 1997, 19).

Understanding the Political Realities

The political realities of any community need to be thoroughly considered. Oftentimes, land protection is not high on the political agenda and garnering support is difficult. A change in the composition of the elected political body can easily alter the viability of any preservation strategy. A former town select-person could have actively supported such a strategy, while the newly elected person could effectively put a stop to all such efforts. There is often a lack of political will to establish a farmland preservation strategy because of the possible repercussions it could create. For example, politicians may not want to create an agricultural zone because landowners may feel overly restricted as to the use of their property. The potential landowner backlash is not politically desired (Daniels and Bowers, 1997, 27). Citizens groups help influence politicians on the need for such a preservation policy. When North Stonington was faced with the proposal for a Six Flags theme park in their town, a citizen group known as "Not A Done Deal" successfully fought to keep the entertainment complex from invading their rural

community. Another option is the formation of public-private partnerships between the local government and private landowners as well as these citizen organizations.

The rest of the citizens of the community need to be incorporated as well. One way to do this is through citizen education programs as a means to generate support for the preservation plan. Another way to generate this citizen base is to establish a support organization that acts as a center for information and education, and speaks up for the needs and desires of the local community, such as “Not A Done Deal”. The citizen groups should strive to positively and proactively support the farmland preservation program.

Anticipating Development Needs

Another component needed to establish a farmland preservation program is to accurately anticipate development needs for the area and determine where to channel that growth and development – ideally away from agricultural areas. This could include doing population projections through the year 2020. These projections could be translated into housing demand and land demand based on the year 2020 population. This will be discussed in more detail later in this chapter under the general implementation strategies section. This would help determine how much land and housing would be needed to support the projected population given current growth rates. Choosing the areas to accommodate the growth and development could be done using the LESA system discussed earlier. Twenty-five percent of all LESA systems utilized are used in determining what lands to include in an agricultural zone or district. Connecticut has its own version of the federal LESA system. The State of Connecticut, the Towns of Bloomfield, East Windsor, Windsor, and Suffield as well as the Counties of Fairfield,

Hartford, Middlesex, and Windham all utilize a local adaptation of the LESA system (Coughlin et. al., 1994, 9).

There should also be an analysis of how the local economy is affected by the presence of the local agricultural industry and determine how it would be affected if the agricultural industry was weakened and even disappeared. It is often assumed that growth is good and will expand the tax base and this is not necessarily so. The American Farmland Trust (AFT) conducted a study on the costs of farmlands and concluded that for every dollar generated in property tax revenues, farmland only requires \$.21 to \$.75 in public services, while residential development requires \$1.05 to \$1.67 in services per dollar collected (Daniels and Bowers, 1997, 55).

In setting up an agricultural lands retention strategy, it is important to remember that farming is a business and way of life for the farmers who operate them. There should not be a romantic notion of farming as simply a bucolic part of the rural landscape. It requires hard and dirty work and long hours, often with low financial returns for all of this hard work (Daniels and Bowers, 1997, 25).

Choices for Protecting Farmlands

There are at least four choices that a town must make in attempting to create a farmland preservation plan for their local community. The first option deals with whether or not a community wants private landowners to take responsibility for the preservation of open space and area agricultural lands. This is also known as the 'wise-use' option (Daniels and Bowers, 1997, 27). This includes the ability to accommodate some development while at the same time saving farms and farmlands. The preservation techniques often employed under this option are the PDR, use-value assessments, and

easements, all of which are voluntary by nature. As discussed earlier in Chapter 4, these voluntary strategies do not ensure the critical mass farmlands to support farming-dependent businesses and often require substantial expenditure of public funds (Daniels and Bowers, 1997, 28).

The second option deals with more long-term protection of “sacred lands”. This option includes a strong governmental role for the long-term and often incorporates the use of agricultural zoning, PDR, and UGB (Daniels and Bowers, 1997, 28). This option leaves less responsibility on the individual landowners and places a larger burden on the local and or state government to create, implement and enforce the preservation plan.

The third option concentrates more on the surrounding urban lands. As mentioned in Chapter 2, the decline of urban areas has lead to the surge of populations out of cities and a push into suburban and rural areas. This third option focuses on improving urban areas as a means to make them more attractive for residential and commercial development. More compact development, infill, and less expensive services and facilities are often employed to pull people and businesses from the countryside back into urban centers (Daniels and Bowers, 1997, 28).

The last option involves a more regional approach to agricultural lands preservation. Local communities are often very protective of their property tax base and guard against any intrusions over their authority covering their lands. However, it is important to remember that no community stands alone and oftentimes one community can benefit from the strategies being utilized in other communities (Daniels and Bowers, 1997, 28). Regional approaches would effectively incorporate region-wide needs and desires into a preservation program.

The Package of Tools

As mentioned several times throughout this study, the most successful farmland protection programs utilize several tools in one overall package of well-balanced techniques. The techniques chosen should have public as well as political support. The combination of techniques chosen should lead to cost-effective, long-term protection that results in affordable land prices and the maintenance of the necessary critical mass of farmlands (Daniels and Bowers, 1997, 235). These strategies should also reflect the community's goals and seek to balance farmland protection and development needs. The goals of the Town of North Stonington relating to farmland preservation were outlined in Chapter 3, but will be reiterated as each technique is chosen. It is also important to distinguish between agricultural lands preservation or more generally open space preservation. The tools utilized for agricultural lands versus open space preservation will be quite different. This paper has focused on farmland preservation and thus attempts to choose strategies that will encourage farming as an industry and at the same time benefit from the open space amenities that farmland preservation brings to the community.

Overall Strategy

North Stonington is a town with a moderate-strength farming community with more moderate to heavy development pressure being exerted on it. There are increasingly more scattered residential and commercial developments occurring throughout the town that threaten the viability of the local farming operations. It is also becoming more and more popular as a bedroom community for a variety of employees in southeastern Connecticut and more specifically employees of the local area casinos. All of these factors influence the preservation strategies chosen. Creating a mix of financial

incentives, voluntary action and governmental regulations will bring about a preservation strategy that will effectively protect farmlands while offering financial and technical assistance to farmers. This type of strategy regards farmland as both an economic asset and an aesthetic resource (Daniels and Bowers, 1997, 12).

Purchase of Development Rights

North Stonington has already utilized this strategy to preserve agricultural lands in town. The Town should continue to utilize the PDR as actively and extensively as possible. Funding is always the biggest problem, but as financial resources become available, the PDR strategy should be put into use. North Stonington can utilize state funding derived from federal sources as it has in the past to finance the PDR program. It can also use the proceeds from any rollback taxes it collects from the preferential tax assessment program proposed in this study. Land trusts and other environmental organizations can also be of great assistance in purchasing development rights as well. The Town should focus on those lands where the purchase of development rights will really make a difference – those lands with at least moderate development pressure. There are two other conditions to deal with under the purchase of development rights program. The first involves buying lands with the heaviest development pressure first – the triage approach which focuses on the worst first. The second strategy involves buying the most acres for the money regardless of development pressure (Daniels, 1991, 425). The first strategy in which lands with moderate development pressure are purchased works best and should be utilized by the Town of North Stonington as it continues to participate in the PDR program.

PDR helps with agricultural zoning conflicts and the subsequent restriction on the use of landowner's property. It also keeps property in agricultural use and allows it to be passed on to future generations. The use of a numerical ranking system helps to objectively determine which development rights should be purchased and in what order (Daniels, 1991, 425). Applications for inclusion in the PDR program should be reviewed and ranked first, then the lands should be appraised. After the appraisal, offers should be made to the landowner and once accepted, approvals should be obtained by all governmental agencies.

Transfer of Development Rights

The TDR program has been referred to in the Plan of Development as a potential strategy to preserve agricultural lands and open space (Plan of Development, 1990, 87). While this program is quite administratively complex, it has been used in other smaller communities in the area, like Hebron, Connecticut (See Appendix D). As part of this overall farmland preservation strategy, the Town of North Stonington has the opportunity to pursue the creation of a TDR program for the Town. As with the PDR, TDR programs can help with agricultural zoning conflicts and the resulting restriction on the use of property. It too preserves farmland without any direct cost to taxpayers. While a voluntary TDR program does not assure the critical mass of farming operations, mandatory TDR programs do help to maintain the critical mass and works better to prevent the scattered subdivision of farmland. The exact location of the sending or preservation area and receiving or development areas can be pre-determined at the beginning of the process. The preservation areas can be chosen in such a way so as to maintain the necessary critical mass.

Urban/Rural Demarcation Line

Throughout the Plan of Development, there are several references to a “dairy” or “agricultural belt”. This belt extends one mile in width from the Rhode Island border across Hangman Hill Road and reaches as far as Hewitt Pond, Wintechog Hill and Stonington-Mystic Road. As of 1990 when the Plan of Development was last updated, eleven of the remaining twelve active farms in North Stonington resided in the dairy belt (Plan of Development, 1990, 17). At that time, the Foxwoods Resort Casino had not been fully established and since then more lands are being lost and more farmlands are being threatened than ever before.

To stop the encroachment of new development into the dairy belt, an urban/rural demarcation line should be created by the Town of North Stonington. This type of a local UGB could be modeled on the urban/rural demarcation line utilized in Baltimore County, Maryland. Instead of a state-wide urban growth boundary, an urban/rural demarcation line is a more local approach to discouraging sprawl. Sewer and water facilities can not be extended beyond the line. In North Stonington, there are no sewer lines in residential areas, but if in the future such lines are allowed, the agricultural lands would still be protected. This could also relate to other infrastructure and public services and facilities as well. It is a good time to implement such a local growth boundary.

The dairy belt as it already exists seems like a natural location for such a local growth boundary. It will serve to preserve prime farmland and reduce air, water, and land pollution, while at the same time provide an efficient allocation of public facilities outside the demarcation line. (Knapp and Nelson, 1992, 40). Between the demarcation line and the surrounding areas, there should be a twenty-acre buffer district that acts as a

transition zone and separates the low-density agricultural area and the higher-density growth areas (Nelson, 1992, 482). It is important that there be rigid enforcement of the line. The planning of the demarcation line should be done in such a way so as to shift demand away from the agricultural areas and force it into the growth areas. Land values inside the growth boundary or demarcation line should rise as it gets closer to the line, while land outside the demarcation line should fall as it gets closer to the boundary. It is difficult to implement an UGB or an urban/rural demarcation line because its hard to accurately determine rate of development; too little land inside UGB will lead to an increase in land prices and too much land in UGB leads to turf battles (Knapp and Nelson, 1992, 41). Beyond the urban/rural demarcation line, farming should continue to be the primary land use. The density of the area outside the demarcation line should be lowered so as to encourage farming and other open space uses and discourage the dispersed subdivision of the land. Allowing no more than one dwelling unit per every twenty five acres should be the maximum density allowed in the rural, agricultural side of the demarcation line. This density level is commonly utilized in areas that have agricultural zones and or growth boundaries (Knapp and Nelson, 1992; Nelson, 1992; Daniels and Bowers, 1997). This maximum density requirement outside the demarcation line will be required if the local growth boundary is to work effectively. Zoning outside the demarcation line can remain the same or be changed in areas to allow higher density development, especially in the southeastern portion of town where a large proportion of residential and economic development already occurs.

Given that this is a more local version of the commonly used state or county-wide urban growth boundary, enabling legislation may not be necessary. The demarcation

line's primary function is to keep development from encroaching on the largely undeveloped agricultural lands within the dairy belt. The dairy belt itself could act as the demarcation line, beyond which additional sewer and water lines could not be extended. Since the idea of sewer extensions in North Stonington has not been well-received, this would be an effective way of at least keeping them out of the agricultural areas. This type of urban growth boundary or urban/rural demarcation line has not made its way to Connecticut yet, but this could act as the spark for further use of the boundaries in stopping sprawl in the state and New England as a whole.

The town should identify the "high value farmlands" – commercial agriculture, "important farmlands" – other rural lands and some agriculture, and "small-scale resource lands" – non-commercial agricultural lands (Nelson, 1992, 479). North Stonington should seek to preserve the high-value farmlands first. Infill and redevelopment should be promoted in the more urban or suburban area before the demarcation line is pushed further into the rural areas. This demarcation line will be effective if it eliminates speculative value; limits consumptive use value; sustains critical mass of farming operations; and increases productive value of farmland.

Agricultural District Overlay

Since agricultural zoning is not allowed by Connecticut State Enabling Legislation, the use of an agricultural overlay district could perform many of the same functions. The Town of North Stonington already utilizes overlay districts to protect aquifers, the village center, and seasonal use areas. These overlays restrict areas from more intense development depending on the resource being protected. An Agricultural District Overlay could also be utilized in areas where farming is predominant. This could

act as an additional protection in the preserved area of a PDR or TDR and the rural areas beyond the demarcation line discussed above. It could also be utilized to protect specific areas that can not be protected through the use of any of the above-stated techniques yet contain valuable agricultural lands. These lands could be identified through use of a series of overlays for soil suitability for agricultural uses (Yaro, et. al., 1993, 169). They could include farmlands of state or local significance based upon soil type, historic use, size of parcel for farming or agricultural purposes, and character of the surrounding area; large parcels over a certain acreage could also be included in the overlay area (Yaro, et. al., 1993, 169).

Preferential Taxation

In an effort to make farming attractive to farmers themselves, the use of a preferential tax assessment on agricultural lands is useful. As described earlier in Chapter 4, this type of tax assessment deals with allowing a lower tax on agricultural land based on use value not market value. There is a penalty levied against landowners who prematurely convert their lands to a non-farm use before their time commitment of typically five years. North Stonington should continue to give tax benefits to farmers, not speculators, as part of this overall preservation program. The penalties for early conversion should be significant enough to prohibit conversions, but not so onerous so as to preclude participation. If not significant enough these rollback penalties will not stop landowners from converting their lands to urban uses, given the development opportunities they perceive for the conversions (Lapping, 1984, 175). The penalty imposed should be at least the same as the amount of taxes saved. However, more costly penalties would prevent additional conversions.

The preferential tax assessment will allow present farmers to keep their property in agricultural use and pass it on to future generations at a reasonable cost. These tax assessments work best when used in conjunction with agricultural districts or zones to limit speculators from taking advantage of the tax breaks. This technique works towards reaching the goal of encouraging the continuation of dairy farming and growing of field crops in North Stonington.

Land Trusts

In order to further promote and reach the goal of encouraging preservation and conservation techniques that result in retaining as much land as possible in a natural condition or devoted to agricultural use, land trusts should continue to play a central and active role in obtaining valuable lands. As discussed in Chapter 4, land trusts are voluntary organizations that purchase conservation easements or direct titles to lands that are sought for conservation purposes. The Plan of Development did not specifically mention the use of land trusts to acquire valuable farmlands and open space, yet it seems to fit well into the stated goals of preserving rural character and the maintenance of farming as an industry. Land trusts fit well with PDR programs. They also help to stabilize the land base and strengthen the credibility of agricultural or large lot zoning (Daniels and Bowers, 1997, 243). Several towns in Connecticut have active land trusts, such as the Avalonia Land Trust in the nearby Groton area.

Right-to-Farm Laws

North Stonington should develop its own unique right-to-farm provision to warn potential home-buyers about nearby farming operations. Given that farming involves conflicts in suburban and rural areas as new residential development begins to enter the

region, these right-to-farm provisions help mitigate potential conflicts before they even start. Residential landowners would not want to move into an area and be surprised with a sudden influx of pesticides and farm-related noises and odors. It is quite true that these new residents should realize the impacts that a farming operation could have on their property, but if they are reminded of these potential conflicts ahead of time they might never become a problem at all. Another reason for these right-to-farm provisions deals with the farmers rights to be free from vandalism, trash, crop theft, and harassment of livestock. It is likely that some of these things may occur when a farmer and non-farming resident meet in the countryside, but if they are dealt with early, it will less problematic. Appendix E has an example of an Agricultural Use Notice or Nuisance Disclaimer form.

Comprehensive Land Use Planning

Comprehensive planning should bring all of these strategies together. Given that techniques such as those discussed throughout this report have been promoted by the Plan of Development gives them an additional source of legitimacy. A package of preservation tools can only be successfully brought together and effectuated through comprehensive land use planning. It would be difficult to effectively implement any of these strategies alone never mind jointly without an overall plan to tie them together. Each strategy must be related to and advanced by every other strategy.

A package of techniques is necessary because each strategy alone will not effectively protect farmlands. Comprehensive plans are hard to enforce well, use-value assessments do not guarantee future farm use, UGB do not require residential and commercial settlement within the urban areas, PDR and TDR are expensive and do not preserve the necessary critical mass, land trusts are voluntary and purchases can be costly,

agricultural districts are temporary and voluntary, and right to farm laws do not guarantee future farm viability (Daniels and Nelson, 1986 ,31). Together these strategies can balance out the individual strengths and weaknesses.

General Implementation Measures

In order to effectively protect farms and farmlands, it is critically important to have a solid implementation strategy in place. With all of the ingredients discussed above well-rooted in the farmland protection plan, an implementation strategy must effectuate the preservation techniques chosen. The implementation strategy for farmland preservation should be coordinated with other open space programs. Local implementation of the protection strategy enables local governments to consider the characteristics and farming practices that make a town unique. State oversight is helpful and important to ensure that the strategy is being implemented by the local government (Knapp and Nelson, 1992, 157).

The implementation plan should be based upon a firm understanding of the financial, social and political impacts and benefits of retaining farmland in the community (Daniels and Bowers, 1997, 15). Once a community understands how the techniques work and what impacts the preservation plan will have on the community, the local planners and governmental officials should work to build community consensus for the goal of agricultural lands preservation. This includes building consensus for the specific tools chosen to meet this goal. As stated above, the first step should include working closely with the farming community. It should be explained that the preservation program benefits both farmers and non-farmers alike, given the stability that the preservation plan will give the local land base. This can include the formation of a

citizen group to act as a mechanism through which the preservation plan can be supported and promoted.

As an additional means to marshal support for the preservation of farmlands, it should be shown that farmlands generate more in local taxes than they demand in local facilities and services, while houses demand more in local services and facilities than they generate in taxes (Daniels and Bowers, 1997, 15). Residential development is a cost to communities. Communities have a choice to either pay for the preservation of agricultural lands or pay for the extension of new services and facilities. Utilizing local, state, and federal funds for preservation purposes will create a healthier and more aesthetically attractive community of less congestion. Nearby land values increase as more and more farmlands and open space resources are protected.

Determining Future Needs

A community should assess its land resources and then determine how much development it wants and can support in the future in terms of jobs, services, and quality of life (Daniels and Bowers, 1997, 20). Evaluating land resources can be achieved through an inventory of local assets. This inventory will allow existing conditions to be related to projected conditions involving infrastructure availability, environmental quality and constraints, and market trends (Kaiser, Godschalk, and Chapin, 1995, 199; Bushwick and Hiemstra, 1987, 189). It should document the current built environment of various land uses and structures and incorporate the land that is potentially available for future development. It should be conducted according to individual land uses, such as residential, commercial, industrial, recreational, public facilities, agricultural lands, forest lands and open space. The inventory will act as a baseline for future projections. A

yearly update of the baseline inventory can be done using a combination either of building permit data, certificates of occupancy, subdivision approvals, infrastructure inventories, field surveys, aerial photographs, and remote-sensing (Kaiser, Godschalk, and Chapin, 1995, 200; Bushwick and Hiemstra, 1987, 190).

Developability Analysis

A developability analysis can also be done to determine which lands in the area are suitable for future development. This type of analysis should generate a balance between lands to be preserved and lands to be developed to meet future needs. Development proposals for each year should be analyzed to see what impacts they will have on the land supply and infrastructure. Kaiser, Godschalk, and Chapin (1995) outline three strategies that can be utilized as part of this developability analysis. The first is the suitability analysis. This analysis is used to locate specific areas of town that are best suited to certain types of land uses. It entails overlaying maps of various suitability measures – such as depth-to-bedrock, slope, distance to roads and sewers, and permeability of soil – in order to generate an overall suitability score for each location (See Appendix F). The second analysis deals with carrying capacity. The carrying capacity analysis is used to make a comparison between land and infrastructure resources that are currently available and the new demand that is being placed upon it due to additional development. It determines how these new demands can be met given existing natural and man-made systems. The third analysis is called committed lands analysis. This analysis allows a town to determine what public services and facilities have excess capacity to meet future development needs. It measures how a facility changes as new demands are placed upon it. Committed lands analysis helps to determine what specific

areas are most cost-efficient in terms of adding new customers at the lowest cost and highest gain in efficiency (Kaiser, Godschalk, and Chapin, 1995, 201-202).

All of these developability analyses help a town to determine when and where future development should occur. They are used in conjunction with the above-mentioned population projections which help determine future housing and land demand. If a farmland preservation strategy is to be successful, it should be able to efficiently accommodate development in areas where it can best be handled. If it is determined beforehand where development is to occur, it is less likely that agricultural lands will be chosen for development. These analyses can be used as part of the TDR and PDR process to determine preservation and development areas, as well as in delineating UGB. Farmland preservation does not just deal with protecting agricultural lands, but just as importantly deals with finding ways to accommodate future growth and development as a means to manage and direct growth away from these valuable farming areas.

Agricultural lands should only be converted based on the following set of factors: environmental, social and economic consequences call for the conversion; demonstrated need to convert the land; absence of other suitable locations; compatibility of the proposed conversion with agricultural lands; and the retention of Class I, II, III, and IV soils in farm use (Nelson, 1992, 472).

Thomas Daniels (1991, 425) outlined a series of key steps that can be followed in the administration of a farmland preservation program:

1. Create a state or local agency to administer the program;
2. Negotiate and work with farmland owners;
3. Target farms and farmlands to be preserved;
4. Rank the farmland applicants by development pressure and quality of the farmland;
5. Conduct an appraisal of the farmlands; and
6. Monitor and enforce the program.

These six steps are applicable to North Stonington as it begins to implement its own farmland preservation program.

Summary of Findings

North Stonington is in a position to stop the loss of farmlands before more significant losses occur. The development pressure on the town as a whole seems to increase daily with the expansion nearby Foxwoods Resort Casino. One of the most effective strategies to prevent sprawl and further urbanization and suburbanization is to act early. The preservation techniques outlined above should be explained clearly to the residents of North Stonington in order to gain their support in administering the program. The strength of any one technique can effectively outweigh the weaknesses of another if they are used together.

Land preservation is a political process. In order to weed through the political realities that hinder the creation, implementation, monitoring, and amendment of the farmland preservation process, strong support is needed from the surrounding community, specifically the farming community. Sufficient sources of funding and well-balanced preservation techniques will not be enough without the support and commitment of area landowners (Daniels and Bowers, 1997, 5). It is equally as important to have a working knowledge of what the various preservation strategies are and how they function

if the program is to be readily safeguarded. The strategies chosen should strive to maintain the rural character, community appearance, local economy, and social cohesion of the area. These strategies will help North Stonington retain its agricultural lands without hindering and will even perhaps advance the local economy. Again, the earlier the town addresses the problem, the more feasible it will be that the protection of local farms and farmlands will occur, and consequently the more likely it is that the rural character will be preserved.

Chapter 6: Conclusion

Summary of Findings

The need for a farmland preservation strategy has been discussed at length in all of the previous chapters. Since the late 1960s and early 1970s, urban land has been overvalued due to governmental subsidies, inefficient utility provisions and other market imperfections (Nelson, 1992, 484). Farmland has been consequently undervalued for the same reasons in addition to the effects that urban spillovers have on agricultural lands. As a result, farmland has been taken out of production and lost to urbanization. As more and more farmlands are taken out of production and converted to non-farm uses, the critical mass of farms necessary to maintain the local farming economy is also lost. Soon, agriculture as a primary force in a community becomes weak and virtually disappears. Farmland conversions can be stopped if the following factors are present in a community:

1. The residents perceive a rapid growth in population;
2. The size and quality of the land base is being exhausted;
3. The economic, recreational, and open space values attached to agricultural land is strong enough;
- and 4. The contextual factors – social and political – make farmland preservation a priority (Furuseth & Pierce, 1982, 203).

This combination of social, political and economic factors create an environment in the community that is conducive to farmland preservation. The public at large needs to perceive farmland losses as a real problem that warrants attention.

Throughout this study, several of the various farmland preservation techniques have been described in detail. Different combinations of these techniques have proven to be quite effective at preserving agricultural lands, maintaining the local farming economy,

keeping land prices affordable and compensating landowners who work to preserve their lands. A central theme which pervades this study is the need to have a comprehensive package of preservation techniques. Without this package, the individual preservation tools would be ineffective. This type of preservation ‘hybrid’ will work well to protect farms and farmlands at the state, regional or local level.

The following matrix summarized the major features that are present in of each strategy outlined as part of North Stonington’s farmland preservation plan.

<i>Features Tools</i>	Cost	Voluntary/ Mandatory	Enabling Legislation	Acceptance:		Critical Mass	Complexity
				Farmer	Political		
PDR	X	VOL		X	X		X
TDR	X	MAN		X			X
Urban/Rural Demarcation Line		MAN	X	X		X	
Agricultural Overlay		MAN			X	X	
Preferential Tax	X	VOL	X	X	X		
Land Trusts	X	VOL		X	X	X	
Right-to-Farm Law		VOL		X	X		
Comprehensive Land Use Planning		MAN	X	X	X	X	X

This package of tools should incorporate a combination of both voluntary and mandatory programs. As seen matrix above, there is a mix of both voluntary programs with the PDR, preferential tax, land trust, and the right-to-farm law and mandatory programs with TDR, urban/rural demarcation line, agricultural overlay and comprehensive land use planning. Policies that allow individuals to choose whether or not to participate weakens the effectiveness of the program and actually undermines the

basis of a farmland preservation program (Furuseth & Pierce, 1982, 202). Mandatory programs are much more effective at preserving agricultural lands and open space, but it is important to balance these strict preservation techniques with some voluntary options. This allows a wide range of preservation efforts to contribute to the protection of farmlands and open space. Each of these strategies will be briefly summarized below.

Purchase of Development Rights

This technique deals with the use of public funds to purchase of an easement or development rights to a parcel of land in order to protect and preserve it in agricultural or other open space uses. This purchase easement runs with the land, precluding all future development. As mentioned in earlier chapters, the cost of the PDR tends to preclude many communities from participating in this program.

Transfer of Development Rights

This preservation tool also deals with the individual development rights that are part of the land. With this technique, development rights are transferred from a sending or preservation zone to a receiving or development zone. The purpose is to transfer development away from more environmentally sensitive areas and concentrate it in more appropriate areas that can best handle that development. The administrative complexity of this program is its most problematic feature.

Urban/rural Demarcation Line

This preservation strategy has been adapted from the larger and more complex urban growth boundary. With this mechanism, a line is drawn in a community to stop sprawling development. Beyond this demarcation line, sewer and water facilities and services can not be extended. This line acts to preserve the integrity of farmlands and

open space beyond the line and encourage development, redevelopment and infill of areas where growth can be better accommodated.

Agricultural Overlay

This type of tool would be utilized as an additional protection measure in agricultural areas. It would restrict more intense development in areas where farming is predominant. The areas chosen for the overlay district could be based on soil type, historic use, size of parcel for farming, and the character of the surrounding area.

Preferential Tax Assessments

This program allows farmland tax assessments to be based on the current use-value of the land rather than its market-value as a potential development site. This program gives farmers a tax break and enables them to earn a higher return on the land and invest more in their agricultural operations. It helps to maintain farming as a viable local industry. However, they are voluntary in nature and this may preclude their effectiveness if farmer choose not to participate.

Land Trusts

Land trusts are a privately run non-profit organizations whose primary mandate is to protect and preserve agricultural lands and open space areas. They are voluntary in nature and work to preserve farmlands through the purchase of conservation easements, donations, and the bargain sale of land or easements. Land trusts are effective in filling in the gaps where important lands are needed for the maintenance of the critical mass of farming operations.

Right-to-farm Laws

This type of law is not necessarily a farmland preservation 'strategy' but works effectively to mediate the conflicts between farmers and their non-farming neighbors. These laws protect farmers from nuisance claims against them, forewarning new residents of the potential side-effects that farming operations can have, such as noise, odor and pesticide use. They also help protect farmers against livestock harassment and theft of crops.

Comprehensive Land Use Planning

This last tool effectively brings together all of the other strategies just described. Comprehensive planning helps to implement the package of tools that is necessary in adequately protecting and preserving agricultural lands. It integrates and balances all of the various strengths and weaknesses associated with each strategy and helps effectuate the overall preservation plan.

What Does the Future Hold?

In order for a farmland preservation strategy to effectively protect and promote farms and farmlands, the federal government needs to play more of an active role. While land use issues are traditionally controlled by the state and local governments, the federal government can significantly contribute without interfering with local efforts. The main source of their contribution comes in the form of funding. The federal government should provide more funding to local farmland preservation efforts. One of the first recipients of these additional funds should be the state and local governments utilizing the PDR program. The most significant problem with the PDR is lack of funding. If a more reliable and stable source of funding was available, more land could be saved. In addition

to the federal funding, local governments could strive to reduce their reliance on the property tax as a main source of funding for town-wide services and facilities. North Stonington currently relies on the property tax for town funds. It is possible under the techniques discussed throughout this study to diversify the tax base while still preserving agricultural lands. There is also the need to reinvest in our inner cities as a means to alleviate the pressure on rural areas to accommodate new growth and development. The revitalization of metropolitan areas and the preservation of the countryside are integrally related in this way.

The package of techniques chosen by any town in the future should be tailored to the needs of the community and the specific geographic, political, economic, social and demographic realities that make the area unique. Before it is too late, the Town of North Stonington needs to act to preserve the central quality that gives the town its rural character and defines the area as a place of quiet living and rustic significance. This central quality is its farms and farmlands. There is serious pressure being exerted on the town from many directions, namely the recent boom of the casino and related tourist activities that are now dominating the economy of southeastern Connecticut. The preservation techniques covered in this paper can and will help North Stonington if there is the political will and public support to commit themselves to such an undertaking.

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Appendix A:

**Agriculture and the
Comprehensive Plan**

Agriculture and the Comprehensive Plan*

The agricultural section of the comprehensive plan or plan of development might follow the example below:

- I. Agriculture in _____ County/Municipality.
 - A. Overview of land in farm use, soil quality, number of farms, value of farm production, and type of crops and livestock.
 1. County soils maps from the Natural Resources Conservation Service.
 2. Data from the U.S. Census of Agriculture and the state Department of Agriculture.
 - B. Contribution of agriculture to the local economy: jobs, value and type of products produced, manufacture of food and fiber products, farm support businesses, tourism.
 - C. Threats to and opportunities for Agriculture in _____ County/Municipality: loss of farmland since 1982, population growth since 1980, location of farming areas and growth areas, problems of incompatible nonfarm land uses in farming areas.
- II. Goals and Objectives for farmland protection
 - A. Goal 1: To encourage farming as an important part of the local economy.
 1. Objective 1: the county/municipality helps fund the creation of three farmers' markets.
 2. Objective 2: the county/municipality planning commission reviews local zoning ordinances to ensure that they do not discourage normal farming practices and do allow for some farm-based businesses.
 - B. Goal 2: To protect farmland from conflicting nonfarm development by keeping large-scale residential subdivisions and commercial development out of the countryside.
 1. Objective 1: The planning commission monitors plans to locate or extend public sewer and water lines to make sure that, to the extent possible, they do not enter the main farming areas of the county.
 2. Objective 2: The planning commission permits some low-density rural residential zoning to accommodate the growth of the rural population.
 3. Objective 3: The county works with cities and villages to limit strip commercial development and to form growth

boundaries so that most of the projected population growth and mixed-use development can be accommodated in and next to built-up places.

4. Objective 4: The planning commission works with farm groups, individual farmers, and nonfarmers to review or adopt agricultural zones.
5. Objective 5: The county government supports financial incentives, such as preferential property taxation, the purchase of development rights, and the donation of conservation easements, to protect farmland.

Appendix B:

Sample LESA System

Site Assessment for a 150-acre farm, adapted from McHenry County,
Illinois

*A Farmland Preservation Strategy for
the Town of North Stonington*

B-1

Sample LESA System

Site Assessment for a 150-acre farm, adapted from McHenry County,
Illinois.

Site Assessment Factors	Maximum Weight Assigned	Sample Farm Points	Total Points Times Weight Assigned	Possible Points
Percentage of land in agriculture within a 1.5 mile radius	2.0	9	18.0	20
Percentage of land in agriculture adjacent to the farm site	1.5	8	12.0	15
Percentage of farm site in agriculture	1.5	9	13.5	15
Percentage of farm site zoned for agriculture	2.0	10	20.0	20
Distance from a city or village	1.5	8	12.0	15
Distance to public sewer or water	1.5	5	7.5	15
Size of farm vs. Acreage farm size in county	2.5	8	20.0	25
Road frontage of site	1.5	8	12.0	15
Farm support services available	1.5	8	12.0	15
Historic, cultural, and environmental features on farm site	1.0	6	6.0	15
Consistency with county plan	1.0	15	15.0	15
Consistency with municipal plan	1.0	15	15.0	15
 Site Assessment Subtotal			 163.0	 200
 Land Evaluation Subtotal			 90.26	 100
 Total Points Possible				 300
 Total Points Scored			 253.26	

Source: Daniels, Thomas and Deborah Bowers. 1997. *Holding Our Ground: Protecting America's Farms and Farmlands*. Washington, D.C.: Island Press; Adapted from the *National Agricultural Land Evaluation and Site Assessment Handbook*. Washington, D.C.: U.S. Department of Agriculture, Soil Conservation Service, 1983.

Appendix C:

**Montgomery County, Maryland
Farmland Preservation Program**

FARMLAND PRESERVATION PROGRAMS IN MONTGOMERY COUNTY



Prepared by:
THE OFFICE OF ECONOMIC DEVELOPMENT
AND THE
AGRICULTURAL PRESERVATION ADVISORY BOARD

DUCTION

Preservation of rural land for agricultural use is a high priority in Montgomery County. More than 50% of the County's 316,800 acres are still in agricultural use. The County's agricultural preservation goals are:

To Conserve farmland for future food and fiber production.

To ensure continued high quality food supply for our citizens.

To preserve the agricultural industry and rural communities.

As farmers and landowners, you are a crucial part of this effort to preserve agricultural land. You can be an active participant in, and beneficiary of, efforts to preserve agricultural land.

You can choose from four separate agricultural preservation programs in Montgomery County. Each of these programs place an easement on the land which prevents future commercial, residential or industrial development of the land.

Montgomery County Agricultural Easement Program (AEP),

Maryland Agricultural Land Preservation Foundation (MALPF),

Maryland Environmental Trust (MET), and other private trust organizations,

Montgomery County Transfer of Development Rights Program (TDR),

You may find it economically advantageous to participate in one of these agricultural land preservation programs if you and your family intend to continue farming, or if you desire to have your land protected for future development. Montgomery County is committed to preserving farmland to ensure the continuation of the agricultural industry which contributes to the County's economic diversity and benefits all citizens.

MONTGOMERY COUNTY AGRICULTURAL EASEMENT PROGRAM (AEP)

This program gives Montgomery County the authority to purchase agricultural land preservation easements to preserve land for agricultural production. This is contingent upon the land being zoned Rural, Rural Cluster, or Rural Density Transfer, or subject to a transfer of development rights and being designated as an approved State or County Agricultural Preservation District.

The County's purpose in creating this farmland preservation program is to increase both the level of voluntary participation and the range of eligible farmland parcels. With this program Montgomery County can more effectively achieve its farmland preservation goals. Since the funding for this new program is not dependent upon State funds, the County can process agricultural land preservation easement applications in a timely manner, usually within three to nine months.

An important feature of this new program is Method I for determining the agricultural easement value. Farm size, soil quality, road frontage, and farm location are the major factors considered in the easement value worksheet, (found on the inside page of this brochure) to calculate the potential value of the easement. The estimated agricultural easement may range in value from \$750 to \$4,500 per acre.

The County will also accept the average of two commercial appraisals of the easement value as long as they do not exceed the value in Method I by more than 25 percent.

Easement applications received by the County during open purchase periods will be grouped together and ranked in order of the amount by which the landowner offer price is lower than the easement value determined for each easement. The highest ranked offers will be purchased first until funds allotted for the year are exhausted.

As of July 1991, Montgomery County has protected easements on 22 farms totaling 2,095 acres - 12 additional farms totaling 832 acres are pending easement settlements.

II. MARYLAND AGRICULTURAL LAND PRESERVATION FOUNDATION (MALPF) (Note - The State will have limited funding for this program for at least 2 years.)

The Maryland Agricultural Land Preservation Foundation (MALPF) was established in 1977 by the State Legislature as a result of concern over decreasing farmland acreage caused by development.

The MALPF purchases agricultural land preservation easements directly from the landowner for cash. Following sale of the easement, agricultural uses of the property are still permitted and are in fact, encouraged.

The MALPF program works in two steps. Step I is the voluntary creation of an agricultural district of 100 acres or more by the landowner in cooperation with the MALPF. Step II is the actual sale of an easement to the State. The property owner retains title to the land and can sell the property. However, future development of the property is limited to agriculture.

MAKE YOUR LAND PRESERVATION DECISION NOW

As of June 1991, 17 agricultural preservation districts had been formed voluntarily in Montgomery County covering 3,016 acres, on which nine easements have been sold totaling 1,678 acres.

In order to provide an additional incentive for voluntary participation in the MALPF program, Montgomery County may offer a supplemental or bonus payment in addition to the easement payment offered by the MALPF.

6. MARYLAND ENVIRONMENTAL TRUST (MET) (AND OTHER PRIVATE TRUST ORGANIZATIONS)

The Maryland Environmental Trust (MET) was established by the State legislature in 1967 to encourage landowners to donate an easement on their property to protect scenic open areas, including farmland and forest land, wildlife habitat, waterfront, unique or rare areas, and historic sites. These donations are accepted by the MET. In return, the landowners are eligible for certain income, estate, gift, and property tax benefits.

Montgomery County currently has five properties totaling 1,879 acres which are preserved through the MET program.

For further information on the MET program, call John Hutson at 301-974-5350.

Other private land trusts may also be able to offer farmland preservation options that are flexible and advantageous to landowners.

7. MONTGOMERY COUNTY TRANSFER OF DEVELOPMENT RIGHTS PROGRAM (TDR)

In 1981, Montgomery County established the TDR program as part of the functional Master Plan for preservation of Agricultural and Rural Open Space. Approximately 89,000 acres of County land are designated as the Agricultural Reserve and have Rural Density Transfer zoning. The Rural Density Transfer zoning gives strong preferences to agriculture, forestry, and other open space uses, as well as allowing a variety of agriculturally related commercial and industrial uses. Housing density in the Agricultural Reserve limits development to one house per 25 acres with a minimum one acre lot size. Furthermore, the properties in the Agricultural Reserve have Transferable Development Rights (TDR's) at the rate of one TDR per five acres. These TDR's can be sold to developers who want to use them to construct houses in designated County TDR receiving areas.

As of June, 1991, over 26,143 acres of farmland in Montgomery County have been protected by TDR Easements.

For further information on the TDR program, call Melissa Banach or Denis Canavan at 301-495-4585.

The time is ripe for you to consider preserving your land for future agricultural use. Farmland owners in Montgomery County have already responded to the preservation opportunities by placing more than 31,897 acres under easement. The four programs described in this brochure offer you viable options to preserve your farmland. The choice is yours.

You may wish to discuss the features of each program further in order to decide which program is the most beneficial for you. For answers to your questions or for additional information on how to participate in the agricultural land preservation programs of Montgomery County, contact:

Jeremy V. Criss
Planning Specialist - Farmland Preservation
Office of Economic Development
101 Monroe Street, Suite 1500
Rockville, Maryland 20850
(301) 217-2345

The pictures contained in this Brochure were taken from farms protected by the Montgomery County Agricultural Easement Purchase Program.



Eligibility Factors and Criteria:

Farm must be located within the Rural Density Transfer Zone (RDT), Rural Cluster Zone (RC), Rural Zone, or qualify for an approved Agricultural Preservation District.
Districts must be located outside water and sewer categories 1, 2, and 3, and must have at least 50% Class I, II or III soils.

Stages and Procedures of the Program:

Landowner submits an easement application including an offer price, to the Office of Economic Development (OED) during an open purchase period.
OED staff assists in completion of the application and determines maximum agricultural easement value.
OED Director certifies complete easement application, determines ranking, and makes recommendation to County Chief Administrative Officer (CAO) to purchase the easement within 60 days.
Landowner accepts offer from the County within 30 days.
OED coordinates (at County's expense) the agricultural easement settlement following acceptance of the offer.

Typical Processing Time For Application:

Applications are processed in 3 to 9 months.
Easement settlement is completed within 6 months.

Standard Easement Conditions:

No development or subdivision for residential, commercial or industrial use is permitted except to create lots for the original owner and their children.
Dumping trash on the property is prohibited.
All normal agricultural uses are permitted.
No restrictions from selling the farm in the future.
Soil and water conservation plan shall be implemented within 5 years of easement settlement.
Agreement is necessary to allow periodic inspection of property, except building interiors.
Easement does not grant public access to the property.

Eligibility Factors and Criteria:

Minimum property size: 100 acres in one or more contiguous farms.
Total acreage must total at least 50% class I, II or III soils.
Inclusion in a State Agricultural District.
Applicant must have a soil and water conservation plan.
Program participation must be approved by Montgomery County.

Stages and Procedures of the Program:

Landowner applies to County Agricultural Preservation Advisory Board and MALPF to form an Agricultural District.
Landowner applies to sell easement to MALPF.
County approval of easement applications within 60 days.
An easement offer is ranked.
Montgomery County may offer a supplemental payment to landowners as a means to increase incentives for MALPF participation. This payment cannot exceed 15 percent of the easement offer made by the MALPF.
Settlement following title search (at State expense) and approval by the Board of Public Works.
After settlement, deed of easement is recorded in County land records.

Typical Processing Time for Application:

Application to form Agricultural District is processed in 6 to 9 months.
Application to sell an easement is processed in 6 to 12 months.

Standard Easement Conditions:

No development or subdivision for residential, commercial or industrial use is permitted except to create lots for original owner and their children.
All normal agricultural uses are permitted.
No restrictions from selling the farm in the future.
The display of most signs and dumping trash on the property is prohibited.
Soil and water conservation plan shall be implemented.
Agreement is necessary to allow periodic inspection of property by County.
Easement does not grant public access to the property.

property.

Duration of Easement:

The easement is perpetual; however, the law allows landowners to buy back the easement 25 years after purchase, but only if the County agrees that "the land is no longer suitable for farming."

Liability:

Proceeds from sale of agricultural easements are subject to income taxes.

Benefits:

For purposes of estate taxes, the value of the property is likely to be lower subject to the restrictions of the easement. Any remaining value of the land would still be included as part of the taxable estate.

Method Used to Determine Easement Values:

Method I: (Based on Easement Value Worksheet) Based on preliminary information, the agricultural easement values may range from \$750/acre to \$4,500/acre. (See Proposed Easement Value Worksheet)

Method II: (Based on averaging of County appraisal and landowner appraisal) Average of two appraisals; difference in the value of the property with and without the preservation easement.

Typical Program Costs Incurred by Seller:

Landowners (sellers) are responsible for resolving property boundary or title problems prior to settlement.

If Method II is chosen to establish the maximum easement value, the landowner must provide one appraisal. (estimated cost, \$1,000 to \$2,000) Implementation of Soil Conservation Plan Requirements.

Responsibilities of the Landowners:

All present and subsequent owners are bound by the deed of easement restrictions.

Approval must be obtained from Montgomery County to construct dwellings on the subject property as permitted.

Landowner must implement an approved soil and water conservation plan.

Responsibility of County:

Enforce terms of the deed of easement.

Governing Laws and Regulations:

Montgomery County Code Sections 2B-1 to 2B-19
Bill No. 56-87
County Executive Regulations No. 20-88AM

Duration of Easement:

The easement is perpetual; however, the law allows landowners to buy back the easement 25 years after purchase if the Foundation and the County agree that "profitable farming is no longer feasible".

Tax Liability:

Proceeds from sale of agricultural easements are subject to income taxes.

Tax Benefits:

For purposes of estate taxes, the value of the property is likely to be lower subject to the restrictions of the easement. Any remaining value of the land would still be included as part of the taxable estate.

Method Used to Determine Easement Values:

- The State is currently studying new methods to determine easement values. Please contact Jeremy Criss for the latest information.
- Easement purchase prices in Montgomery County during 1986-1987 averaged \$1,800/acre.

Typical Program Costs Incurred by Seller:

- Landowners are responsible for resolving acreage or title problems prior to settlement.

Responsibilities of the Landowner:

- All present and subsequent owners are bound by the deed restrictions.
- Approval must be obtained from the Foundation and County for lot creation and agricultural sub-division.
- Landowner must implement an approved soil and water conservation plan within 10 years.

Responsibilities of the MALPF:

- Enforce terms of deed of easement.
- Review in a timely fashion all requests for approvals by landowner, as required by program.

Governing Laws and Regulations:

- Annotated Code of Maryland
- Agriculture Article, Title 2, Subtitle 5
- Code of Maryland Regulations, Title 15, Subtitle 15

Eligibility Factors and Criteria:

Properties must have agricultural, environmental, or historical conservation value.

No legal minimum size: (20 acres waterfront or 50 acres inland preferred).

Stages and Procedures of the Program:

Following contact by landowner, MET staff visits property and determines its conservation value. MET staff and property owner negotiate terms of draft easement deed.

MET notifies local elected officials of easement offer. Approval of County, Maryland Department of Natural Resources, Board of Public Works, and Attorney General are required before MET decision to accept easement.

Final easement deed is executed by MET Director and donor.

Typical Processing Time for Application:

Applications are processed in 3 to 6 months following completion of application.

Standard Easement Conditions:

No industrial or commercial use, residential development, display of billboards, dumping trash and waste, excavation, dredging, mining and removal of natural vegetation is permitted.

No restrictions from selling the farm in the future. Farming, forestry and enhancement of wildlife habitat is permitted.

Landowner may retain limited right to build future dwellings.

Landowner must establish vegetative buffer along rivers or waterways.

There must be agreement to allow periodic inspection of property.

Eligibility Factors and Criteria:

Farm must be located within the Rural Density Transfer Zone.

Property has 1 TDR per 5 acres.

Stages and Procedures of the Program:

TDR's are sold directly by farmland owners to buyers in private sales.

Typical Processing Time for Application:

Time frame depends on the agreement between the landowner selling the TDR's and the developer purchasing the TDR's.

Standard Easement Conditions:

Restricts future use of the land to agriculture as specified in the Zoning Ordinance

All normal agricultural uses are permitted.

Agreement to allow periodic inspection of property (not including interiors).

Easement does not grant public access to property.

No restrictions from selling the farm in the future.

Duration of Easement:

This is a perpetual easement without any provisions for removal.

Tax Liability:

Proceeds from the sale of TDR's are subject to income taxes.

Tax Benefits:

For purposes of estate taxes, the value of the property is likely to be lower subject to the restrictions of the easement. Any remaining value of the land would still be included as part of the taxable estate.

Benefits:

For income tax purposes, (Federal and State) donor may deduct an amount up to 30% of his/her adjusted gross income each year until value of gift is exhausted (maximum 6 years).

For purposes of estate taxes, the value of the property is likely to be lower subject to the restrictions of the easement. Any remaining value of the land would still be included as part of the taxable estate.

State inheritance tax is reduced on easement restricted property.

Assessed value of land for tax purposes is reduced to reflect restrictions.

100% property tax credit (state and local) on unimproved property (buildings excluded) for 15 years following any donation of conservation easement after July 1, 1989.

Easement Values:

Easement value (for tax purposes) is the difference between fair market value of unrestricted property and the fair market value of the property with easement restrictions in place. Value is to be determined by qualified appraiser hired by donor. Easement values range from 14% to 25% of fair market value.

Typical Program Costs Incurred by Donor:

Easement appraisal fee - \$1,000 to \$2,000
Attorney's fees - \$500 to \$1,000 (In limited cases MET may reimburse easement donors for part of their costs for legal and appraisal fees related to an easement donation.)

Responsibilities of the Donor:

Provide property information to MET staff.
Obtain easement appraisal by qualified appraiser.
Request approval of MET for changes/activities requiring approval in deed.
Provide access to property to MET staff for periodic monitoring.
Notify MET of any sale or transfer of the property.

Responsibilities of the Trust:

Inspect property periodically (at least once every 4 years).
Enforce terms of easement agreement in perpetuity.
Review in a timely fashion all requests for approvals by landowner, as required by terms of easement.

Governing Laws and Regulations:

Annotated Code of Maryland:

Natural Resources Subtitle 2, Sect. 3-201, 3-211
Environmental programs, Title 3, Subtitle 2, Sect. 3-203, 205, 206
Property Tax Credits and Tax Relief, Sect. 9-107
Real Property, Sect. 2-118
Internal Revenue Service Code-Section 170

Easement Values:

Within the past 18 months TDR values have ranged from \$5,000 to \$6,000 per TDR.

Typical Program Costs Incurred by Seller:

Depends on sale negotiations; brokers typically charge a 6%-7% handling fee.

Responsibilities of the Landowner:

All present and subsequent owners are bound by the deed restrictions.

Approval from Montgomery County must be obtained to construct dwellings on the subject property as permitted.

Responsibilities of County:

Monitor the TDR's utilized.
Enforce terms of easement.
Conduct periodic inspections of property.

Governing Laws and Regulations:

Montgomery County Code
Zoning Ordinance, Chapter 59

AGRICULTURAL PRESERVATION EASEMENT VALUE WORKSHEET

METHOD I

Base all farms receive 100 base points 100

Size total farm acreage _____ / 5 = _____

Land Quality

Soil class I _____ / total _____ = _____ x 300 = _____
acres acres

Soil class II _____ / total _____ = _____ x 200 = _____
(or woodland 1) acres acres

Soil class III _____ / total _____ = _____ x 100 = _____
(or woodland 2) acres acres

Soil Conservation Plan

approved and implemented soil conservation plan = _____
(_____ Yes = 10 points, _____ No = 0 points)

Land Tenure

Farmer with \$5,000 + annual gross farm income = _____
(_____ Yes = 25 points, _____ No = 0 points)

Road Frontage

Total feet of road frontage _____ / 50 = _____
(maximum 5000 ft.)

Agricultural Zone Edge

Within 1/2 mile of the RDT zone border = _____
(_____ Yes = 100 points, _____ No = 0 points)

Total Points _____

Maximum Easement Value

Total Points _____ X Base Value \$7.50 = Max. Value _____

gomery County Government
 ce of Economic Development
 utive Office Building
 Monroe Street, Suite 1500
 ville, Maryland 20850

Example: 150 Acre Farm

(Zoned RDT Rural Density Transfer)

- . 1 lot/25 acres
- . 1 TDR/5 acres
- . Approved & imple-
 mented soil and
 water conserva-
 tion plan
- . 7-acres Class I soils
- . 30-acres Class II soils
- . 70-acres Class III soils
- . 41-acres Class IV soils
- . 2 main dwellings
- . 3500 Feet Road Frontage
- . Annual gross farm Income
 \$5,000 plus
- . 3 children
- * FMV. = Fair Market Value
 AGV. = Agriculture Value

AKP I

METHOD I
VALUATION WORKSHEET

.....100	
Total farm acreage)	
10 - 5 =	30
ability	
7 ac / 150 = .05 X 300 =	15
30 ac. / 150 = .20 X 200 =	40
70 ac. / 150 = .47 X 100 =	47
41 ac. =	0
Approved & Implemented (SCS) plan.....	10
asure	
plus annual gross farm income.....	25
rontage	
ft / 50 =.....	70
ltural Zone Edge.....	0
Total	227
Assessment Value (Method I)	
7.5 (Base Assessment Value) =	\$2,527
	per acre
Assessment Offers.....	\$373,996

Method II
Appraisals

County's	
<u>Appraisal</u>	
FMV.	\$4,450/ac
AGV.	\$2,100/ac
County's	\$2,350/ac
Appraised	
Assessment	
<u>Average Between Appraisals</u>	
	\$2,450/ac.

MALPF II

is currently studying new methods to determine assessment
 Please contact Jeremy Criss for the latest information
 and apply to this example.

MKT III

Landowner's Appraisal

Landowner's *FMV.	\$4,300/ac
Landowner's AGV.	-1,900/ac
Landowner's Appraised	
Assessment Value	\$2,400/ac
	\$2,400/ac
	X 150/ac
Total easement gift value	\$360,000
NOTE: The landowner may deduct an amount of up to 30% of adjusted gross income each year until the total gift value is exhausted (maximum of 6 years).	
The landowner is also eligible for a 100% property tax credit on the unimproved land (buildings excluded). For this 150 acre farm, the property tax credit savings may average \$450 per year.	

TDR IV

150 acres	
(1 TDR/s acres)	
yield.....	30 TDR's
Maximum TDR's for sale.....	28 TDR's
(deduct 2 TDR's for existing dwellings)	
Strategy to maximize return, retain an additional (7 TDR's)	
4 building lots	
3 children lots	
Balance of TDR's for sale.....	21 TDR's
Average TDR price	\$6,000
(105 acres preserved)	X 21
	\$126,000
\$126,000 ÷ 105 acres = 1,200/acre	

The landowner will receive \$126,000 or \$1,200/acre for preserving
 105 acres and retain some future building lots.

Appendix D:

**Hebron, Connecticut
Transfer of Development Rights Ordinance**

PROPOSED NEW SECTION OF THE HEBRON ZONING REGULATIONS
NEW SECTION 8.21, TRANSFER OF DEVELOPMENT RIGHTS (TDR)

Section 8.21 Transfer Of Development Rights (TDR)

Section 8.21.1 Purpose

Transfer of Development Rights is established as permitted under Section 8-2 of the Connecticut General Statutes to implement the goals and policies of the Hebron Plan of Conservation and Development by allowing the transferring of potential residential development away from the Sending Area, an area containing endangered natural resources, to the Receiving Area, an area generally more desirable for, and having the capacity for, higher density development.

Specific purposes of the TDR process are as follows:

- a) to transfer certain potential future development out of the Amston Lake District in order to limit environmental impact to the lake, limit impact to groundwater supplies, and lessen congestion in the neighborhood;
- b) to transfer this development into a designated portion of the Sewer Service District, an area having the infrastructure to better support increased densities in a manner consistent with the Plan of Conservation and Development;
- c) to assist in the diversification of the Town's housing stock by encouraging more innovative residential developments with specific design review;
- d) to achieve these objectives while not generating any increased potential development for the Town as a whole.

Section 8.21.2 Sending Area

For the Purpose of these Regulations concerning the Transfer of Residential Densities, the Sending Area is defined in Section 3.3.19 of these Regulations and more specifically defined as the area containing Lots of Record within the Amston Lake District;

Section 8.21.3 Receiving Area

For the purposes of these Regulations concerning the Transfer of Residential Densities, the Receiving Area is defined in Section 3.3.18 of these Regulations and more specifically defined as a portion of the Sewer Service District, and said Receiving Area is as specifically shown on Plate 2.12 of these Regulations.

Section 8.21.4 TDR Approval Process

The TDR Approval Process consists of three distinct components as follows:

- A. Certification of Transferable Development Rights;
- B. Transfer of Transferable Development Rights;
- C. Use of Transferable Development Rights.

Approval by the Commission is required for "Certification of Transferable Development Rights" and the "Use of Transferable Development Rights". These shall require the submission of a formal application on forms provided by the Commission containing the information required in this Section, and such application shall be treated as a Special Permit application. These can occur either as a single application requesting approval of both components or in multiple applications where each application deals with only one such component.

Section 8.21.5 Certification of Transferable Development Rights

- A. Certification of Transferable Development Rights can only be approved by the Commission as part of a Special Permit application;
- B. A Transferable Development Right is the right to transfer potential development rights to an unspecified location in the Receiving Area.
- C. Persons eligible to apply to the Commission for Certification of Transferable Development Rights are those owning land within the Sending Area; and, the Transferable Development Rights are created only upon Certification by the Commission under this Section;
- D. The number of Transferable Development Rights to be created for each eligible property in the Sending Area shall be as set forth in Sections 5.3.5 (a) and (b), of the Amston Lake District;
- E. Transferable Development Rights shall be identified by a numbering system such that each individual right is identified by a unique number as assigned by the Commission following approval;
- F. An application to the Commission for Certification of Transferable Development Rights shall contain the following information:
 - 1.) A completed application for "Certification of Transferable Development Rights" as provided by the Commission;
 - 2.) Legal description of the land from which the transfer of development rights is requested;

Subdivision in the Sewer Service District (Section 8.18), or Planned Residential Developments (Section 8-22);

C. One Transferable Development Right shall be required for each additional unit requested above the Base Density in the Receiving Area as specified in Sections 8.18.4 and 8.22.4.C ;

D. The applicant who proposes to use a Transferable Development Right must demonstrate to the Commission that he has clear legal interest in the receiving parcel and clear ownership of the identified Transferable Development Right(s);

E. The applicant shall demonstrate to the Commission that the resulting density above the Base Density is preferable to conventional development and compatible to surrounding development in the Receiving Area;

F. An application to use a Transferable Development Right shall include:

1) A completed application for "Use of Transferable Development Rights" as provided by the Commission specifically identifying the applicable Transferable Development Right(s) by number as assigned by the Commission in the Certifying process;

2) All copies of the executed "Transferable Development Rights Easements" as filed in the Hebron Land Records as may be applicable;

3) Any copies of "Transferable Development Rights Deeds of Transfer" as filed in the Hebron Land Records as may be applicable;

4) A copy of the "Transferable Development Rights Document of Attachment" as provided by the Commission fully executed by the owner.

G. Following approval of the application by the Commission, the "Transferable Development Rights Document of Attachment" shall be filed in the Hebron Land Records with a copy sent to the Town Assessor.

3) Survey of the land from which the transfer of development rights is requested;

4) A copy of the document entitled "Transferable Development Rights Easement", as provided by the Commission, or equal, fully executed by all persons having an interest in the land as grantors; said easement agreement shall establish a perpetual restriction on the affected property prohibiting development thereon;

5) A statement from the applicant describing the intended disposition of the sending parcel, as described in Section 5.3.5 (c), once the development rights have been severed;

6) A certificate of title from an attorney at law running in favor of the Town of Hebron identifying the owners and holders of any interest in the premises.

G. Upon approval of the Certification by the Commission, the Easement shall be executed by the Town, and the applicant shall file the document in the Town's Land Records and a copy sent to the Town Assessor.

Section 8.21.6 Transfer of Transferable Development Rights

A. Transferable Development Rights in ownership of an individual may be transferred to ownership of another individual by execution and filing of a "Transfer of Development Rights - Deed of Transfer" as provided by the Commission, or equal. No application nor approval by the Commission is required.

B. Such Deed shall identify the Transferable Development Right(s) being conveyed by number as shown on the applicable "Transferable Development Right Easement", with reference to the Book and Page of the Town's Land Records on which is recorded the easement which created them and any deeds transferring their ownership;

C. Such Deed shall be executed by both the seller and buyer of the identified transferable development rights;

D. The executed Deed shall be filed in the Town's Land Records and a copy sent to the Town Assessor.

Section 8.21.7 Use of Transferable Development Rights

A. Use of Transferable Development Rights can only be approved the Commission by way of a Special Permit application;

B. An application to use a Transferable Development Right shall accompany an application for a Special Permit for the following residential developments permitted in Section 8 of these Regulations: An Open Space

SECTION 5.0 DISTRICT USE REGULATIONS

Section 5.3. District Use Regulations: Amston Lake (AL) (cont.)

2. Installation of storm sewers with sediment traps at catch basins and points of discharge. Such traps shall be cleaned on a regular basis to maintain their effectiveness.
 3. Storm water control measures should be incorporated into the site plan so that the runoff rate from the developed site is the same as it had been prior to development. Such methods might include: temporary storage in open spaces; temporary storage in underground structures and the use of permeable pavements or surfaces.
- (d) An erosion control plan shall be submitted in accordance with the Connecticut Guideline for Soil Erosion and Sediment Control (1985) as amended.
- (e) All new plumbing systems shall include low-flow water conservation fixtures, as specified by the Hebron Building Official.
- (f) Any Year-Round Single Family Dwelling proposed on a lot having less area than that required in the R-1 Zone, shall be connected to public sanitary sewers, and no application for Special Permit shall be deemed complete without the submission of a permit to discharge from the Hebron Water Pollution Control Authority authorizing the connection of the proposed Dwelling to such sewers.

5.3.5 Transfer of Development Rights

The Amston Lake district shall be considered a Sending Area as defined by these Regulations, for the purposes of conveying transferable development rights to a Receiving Area as specified by the provisions of Section 8.21, Transfer of Development Rights.

- (a) All vacant conforming or nonconforming parcels of land which are separately described in a deed of record, with the exception of such parcels fronting directly on Amston Lake, shall be considered eligible for one (1) development credit which is the equivalent of one (1) dwelling unit, upon certification by the Commission in accordance with Section 8.21 of these Regulations for transfer to a parcel located within the Receiving Area. For the purposes of this Section only, each component parcel of any merged Lot of Record shall be eligible for one (1) development credit, irrespective of the merger provisions of Section 7.4 of these Regulations.
- (b) All vacant conforming or nonconforming parcels of land which are separately described in a deed of record which front directly on Amston Lake, shall be considered eligible for two (2) development credits which is the equivalent of two (2) dwelling units, upon certification by the Commission in accordance with Section 8.21 of these Regulations for transfer to a parcel located within the Receiving Area. For the purposes of this Section only, each component parcel of any merged Lot of Record shall be eligible for two (2) development credits, irrespective of the merger provisions of Section 7.4 of these Regulations.

SECTION 5.0 DISTRICT USE REGULATIONS

Section 5.3. District Use Regulations: Amston Lake (AL) (cont.)

- (c) As part of the transfer certification process, as specified in Section 8.21, the sending parcel shall be left with one of the following dispositions.

The adjoining property owner agrees to take ownership of the entire sending parcel; or

The sending parcel is divided into parts for conveyance to adjoining property owners; or

The sending parcel is conveyed to a land trust or other organization willing to assume responsibility for the property; or

The property owner retains ownership and assumes responsibility for the property and shall prevent it from becoming a public nuisance or a health hazard.

Section 3.0 DEFINITIONS

Section 3.3 Definitions (cont.)

Professional: An occupation requiring a specific program of study at the college level which is licensed by the state including but not limited to accountant, architect, attorney, chiropractor, dentist, engineer, marriage-family-child and individual counselors, nurse, psychologist, physician, and for the purposes of these Regulations excluding banker, convalescent or nursing or rest home, insurance, mortician, optician, pharmacist, real estate, sanitarium, veterinarian.

3.3.17 "Q"

3.3.18 "R"

Receiving Area: An area which the Planning and Zoning Commission has determined to be appropriate for residential development in excess of its Base Dwelling Unit Density in accordance with the provisions of Section 8.21 of these Regulations, Transfer of Development Rights.

Restaurant Fast Food: An establishment where food is prepared and served to the customer in a ready to consume state for consumption either within the restaurant building, outside the building and on the same premises, or off the premises and having any combination of two (2) or more of the following characteristics:

1. A limited menu, usually posted on a sign rather than printed on individual sheets or booklets;
2. Self serviced rather than table service by restaurant employees;
3. Disposable containers and utensils;
4. A kitchen area in excess of 45% of the total gross floor area.

3.3.19 "S"

School: Kindergarten and Grades 1-12 supported by public funds and or by nonprofit organizations and not for profit.

Sending Area: An area which the Planning and Zoning Commission has determined to be appropriate for residential development to take place at lesser densities, and from which transferable development rights may be conveyed to a Receiving Area, in accordance with the provisions of Section 8.21 of these Regulations, Transfer of Development Rights.

Signs: See Section 8.2.2.

SECTION 8.0 SPECIAL REGULATIONS

Section 8.18 Open Space Subdivision (cont.)

I. **Open Space:** All developments under the terms, conditions and requirements of these Regulations shall preserve open space land to serve one or more of the following purposes:

- Parks, playgrounds or other outdoor recreation areas and facilities;
- Protection of natural streams, ponds or water supply;
- Conservation of soils, wetlands or marshes;
- Protection of natural drainage systems or assurance of safety from flooding;
- Preservation of open spaces along existing road frontages;
- Preservation of sites or areas of scenic beauty or historic interest; or
- Conservation of forests, wildlife, agricultural and other natural resources.

- (1) **Calculation of Open Space Dedication:** The applicant shall dedicate at least 10% of the total area of the land to be subdivided whether or not it is so subdivided entirely at the time of application as per Section 6.7 of the Subdivision Regulations. In addition, the applicant must dedicate as open space an area of the entire tract at least equal to that by which the proposed aggregate lot areas are to be reduced in accordance with Subsection 8.18.4(D) herein, and as adjusted in accordance with Subsection 3 below. The applicant shall dedicate at least 30% of the total area of land to be subdivided as open space, if the project is located within the Sewer Service District. All other provisions of these Regulations shall apply.
- (2) **Method of Dedication:** Permanent dedication of each such area of open space shall be accomplished by: **a)** conveyance of the fee interest therein to the Town, **b)** creation of a Public Conservation Easement in favor of the Town, **c)** creation of a Private Conservation Easement in favor of the Town, **d)** conveyance of the fee interest to an Exempt Organization approved by the Commission, **e)** creation of a Conservation Easement in favor of an Exempt Organization approved by the Commission, **f)** conveyance of the fee interest to a Connecticut non-stock corporation of which all owners of land within the subdivision are members, or **g)** any other method which accomplishes permanent dedication in accordance with the requirements set forth in this Section. The Commission may require dedication of open space by methods listed a, b, c, or f of this paragraph, but methods listed d, e, and g shall be at the option of the applicant. Any such dedication, regardless of the method used, shall be completed prior to the endorsement and filing of the final subdivision plans in the office of the Town Clerk. Any conveyances of an interest in the dedicated open space shall convey to the grantee good and marketable title to the premises, free of all encumbrances or defects.

SECTION 8.0 SPECIAL REGULATIONS

Section 8.18 Open Space Subdivision (cont.)

(3) **Schedule of Open Space Value Credits:**

	<u>Method</u>	<u>AAV*</u>
(a)	Conveyance of Fee Simple Ownership to the Town of Hebron	(1.0)
(b)	Public Conservation Easement	(0.66)
(c)	Private Conservation Easement	(0.5)
(d)	Conveyance of Fee Simple Ownership to Tax Exempt Organization	(0.8)
(e)	Conservation Easement in favor of Tax Exempt Organization	(0.5)
(f)	Conveyance of Fee Simple Ownership to Connecticut Non-Stock Corp	(0.8)

*Adjusted Average Value, meaning that each type of open space is given a value based upon the extent of public access allowed thereto. Each acre so dedicated shall be multiplied by its AAV to determine its proportionally value in satisfying the overall open space requirement.

(4) **General:** When any dedication, other than the method specified in Subsection 8.18.4.H.2(a), (Deed to Town) or Subsections 8.18.4.H.2(b) or 8.18.4.H.2(e), (Conservation Restriction in Favor of Town), of such open space is used, the deed, declaration or other instrument imposing the covenants and/or restrictions hereinbefore prescribed shall be on a form prepared by the Commission, and shall provide, at a minimum:

- (a) That all such covenants and/or restrictions shall be binding upon and inure to the benefit of all present and future owners of the land within the subdivision;
- (b) That such covenants and/or restrictions may be enforced by each present and future owner of land within the subdivision and also by the Town by appropriate action in court for damages or for affirmative or negative equitable relief;
- (c) That the rights and duties created by such covenants and/or restrictions shall not in any way be modified or amended without the prior written approval of the Commission; and

SECTION 8.0 SPECIAL REGULATIONS

Section 8.18 Open Space Subdivision (cont.)

(d) That if at any time maintenance, preservation and/or use of such open space area shall not comply with or fulfill the provisions of such covenants, and/or restrictions, the Town may, at its election, take any and all such action as may be necessary or appropriate to assure or enforce compliance and to assess, against the owners of land within the subdivision, either jointly or severally, all costs incurred by the Town for such purposes.

- (5) **Access to Open Space:** If such dedication is to be accomplished by the method described in Subsection 8.18.4.H.2(c), (Private Conservation Easement), such area or areas may be reserved for the exclusive use and enjoyment of each individual lot owner, without rights of access to other lot owners in the subdivision or the general public; or, if such dedication is to be accomplished by the method described in Subsection 8.18.4.H.2(f), (Conveyance to Non-Stock Corporation), such area or areas may be reserved for the exclusive use and enjoyment of all present and future owners and occupants of the subdivision; otherwise they shall be open for at least the use and enjoyment of all residents and taxpayers of the Town of Hebron. Any conveyances, other than that set forth in Subsection 8.18.4.H.2(a) (Conveyance to Town), may restrict access to the dedicated open space to pedestrians only, and may, at the applicants option, exclude motorized vehicles.

When any method of dedication of any such open space is used under which it is not to be open for the use and enjoyment of the general public, each instrument of conveyance of a lot or part of the subdivision shall contain a grant of a permanent and perpetual easement, running with the land, of use of all dedicated areas within the subdivision in a manner consistent with the nature and purpose of such dedication.

- (6) **Standards:** Nothing contained in this Section shall be construed to require the Commission to accept any open space dedication. Once determined by the Commission, such open space shall have access from a public street, with such access at least 40 feet wide and having a maximum grade of 15%, or shall abut existing open space having such access. Any land to be dedicated as public open space shall be left in its natural state by the subdivider, except for improvements as may be required by the Commission, and shall not be graded, cleared or used as a repository for stumps, brush, earth, building materials, or debris. However, open space for parks and playgrounds shall be provided or a condition suitable for the purpose intended. The Commission may require such open space area be graded by the subdivider to properly dispose of surface water, that it be seeded with field grass, and that all brush and debris be removed. Such improvement of open spaces will not be required until subdivision is substantially completed; such improvements shall be included in the bond amount to be set in accordance with Section 7 of the Subdivision Regulations.

SECTION 8.0 SPECIAL REGULATIONS

Section 8.18 Open Space Subdivision (cont.)

- (a) If the development is developed in phases, then any open space shall be dedicated or improved in an amount that is directly proportional to the lot areas that will become marketable within such phased development.
- (7) **Location of Open Space:** For open space dedications pursuant to these O.S.S. Regulations, such open space need not be included within the area of the subdivision for which approval has been sought, but may, at the option of the applicant, be located in such proximity to such subdivision as to insure that the residents of the proposed subdivision shall derive direct benefits from the open space so dedicated. In determining whether the residents of the proposed subdivision shall derive benefits from the proposed open space, the Commission shall consider:
- (a) The physical distance between the open space and the proposed subdivision, such that residents of the subdivision will have a view of, ready use of, or other benefit from, such open space;
- (b) Whether the proposed open space land to be dedicated is served by the same road as the subdivision, such that traffic generation will remain constant over the length of such road;
- (c) Whether the area of the proposed open space is served by the same municipal service district, as, for example, elementary school district, fire company, or sewer/water trunk lines, such that the burden of providing such services will remain constant within such district(s);
- (d) Whether the proposed open space provides a needed recreational or other facility; preserves a critical wildlife habitat or unique natural feature; or otherwise fulfills an important recreational/environmental objective of the Town of Hebron in the general area of the subdivision will be enhanced.

All dedicated open space shall be located so as to encourage the connection with other existing or future tracts of open space land in order to facilitate the establishment of open space corridors, greenways or other open space linkages throughout the Town of Hebron, as recommended in the Hebron Plan of Conservation and Development. The Commission shall consider the recommendations of the Conservation Commission in determining the adequacy of all open space proposals.

- J. **Roads:** All dwelling units shall be served by either a public or private road. Vehicular access to at least 75% of all dwelling units shall be from a Residential Sub-collector, Residential Access or Residential Lane type of street as defined by the Hebron Subdivision Regulations.

SECTION 8.0 SPECIAL REGULATIONS

Section 8.18 Open Space Subdivision (cont.)

- (1) **Public Road System:** All roads shall be designed in accordance with the Hebron Subdivision Regulations.
- (2) **Private Road System:** Private road systems may be approved provided the Town is assured that the system's maintenance will be adequately provided for over time without the assistance or involvement of the Town. To assure a clear understanding of this arrangement, each deed of each homeowner shall have a clause stating the Town shall not be responsible for maintenance or improvements in the private street system.
- (3) Higher density cluster developments are encouraged to utilize cluster sacs as provided in Section 13, Public Improvement Specifications, Plate 9A of the Hebron Subdivision Regulations. Other possible design concepts are shown on Plate 9B for illustrative purposes.
- (4) Cluster sacs shall not exceed 1000 feet in length nor contain more than 15 dwelling units.
- (5) Every effort shall be made during the design and application process to provide sufficient ingress, egress and traffic circulation pattern for the future residents of these proposed developments. Care must be taken to assure that proper emergency access shall be provided to all phases, areas, or sections of the proposed development.

K. Utilities: All utilities shall be placed underground.

- (1) **Septic Systems:** Each dwelling unit shall be served by an on-site subsurface disposal system which is approved by the Hebron Health Department, if not otherwise required to be served by a public sewer service system.
- (2) All on-site subsurface septic disposal systems shall meet the requirements of Section 6.4 of the Hebron Zoning Regulations, Buildable Land Requirement, if not otherwise required to be served by a public sewer service system.
- (3) All O.S.S. developments within the Sewer Service District shall be approved by the WPCA, initially for available flow determination and finally for a permit to discharge.
- (4) All O.S.S. developments within the Sewer Service District shall be served by community water systems which are in compliance with Subsection 8-25a and 16-26m of the Conn. Gen. Statutes. The Connecticut Department of Public Utility Control and Department of Health Services shall approve all systems as necessary.

*A Farmland Preservation Strategy for
the Town of North Stonington*

Appendix E:

**Agricultural Use Notice/
Nuisance Disclaimer**

Agricultural Use Notice/ Nuisance Disclaimer*

All lands within the (i.e.) Agricultural Zone are located in an area where land is used for commercial agricultural production. Owners, residents, and other users of this property or neighboring property may be subjected to inconvenience, discomfort, and the possibility of injury to property and health arising from normal and accepted agricultural practices and operations, including but not limited to noise, dust, odors, the operation of machinery of any kind, including aircraft, the storage and disposal of manure, the application of fertilizers, soil amendments, herbicides and pesticides. Owners, occupants, and users of this property should be prepared to accept such inconveniences, discomfort, and possibility of injury from normal agricultural operations, and are hereby put on official notice that the state Right-to-Farm Law may bar them from obtaining a legal judgment against such normal agricultural operations.

*This agricultural use notice/nuisance disclaimer is utilized in Warwick Township, Lancaster County, Pennsylvania. It was taken from Daniels, Thomas and Deborah Bowers. 1997. *Holding Our Ground: Protecting America's Farms and Farmlands*. Washington, D.C.: Island Press.

Appendix F:
**Steps in a
Land Suitability Analysis**

Steps in a Land Suitability Analysis*

1. Pick the land use to be analyzed (agricultural lands).
2. Determine the site attributes that determine suitability for that particular use (e.g. slope, soil type, surrounding uses)
3. Rank (rescale) the internal characteristics of each attribute, depending on their contribution to suitability (e.g. Class I, II and III soils are ranked higher than Class VIII soils). Note that it is important to keep the new classes of attributes simple for both procedural clarity and computational efficiency. The rescaled attributes should have the same minimum and maximum values. Do not rescale one attribute on a scale of 1-3 and a second attribute on a scale of 1-9 because that weights the second attribute up to three times more when combined in a suitability analysis.
4. Weight each individual attribute in terms of its relative importance for suitability for the use under study (e.g. because soil quality is so important in determining agricultural location, it could be weighted 3, whereas slope is only weighted 1).
5. Multiple each attribute rank by the attribute weight (e.g. the classes of soil type are multiplied by the weight of the soil type attribute of 3) .
6. Define the rules for the model to combine the weighted attributes into a single suitability scale (e.g. addition, multiplication, or other algorithm). Following the advice of maintaining simplicity, adding the weighted attributes to generate a single numerical score for each site can be used).
7. Reclassify the resulting range of numerical scores (e.g. less than 20 is least suitable; 20-26 is less suitable; 27-32 is suitable; and more than 32 is most suitable). In reclassifying, try to ascertain what combinations of attribute values are represented by each suitability class. Remember that a class should not represent just a range of values on an abstract numerical scale and that thresholds between classes should not be arbitrary. The classes should represent selected combinations of conditions among the attributes, which are related to the suitability for the use under consideration. Thus, prior to rescaling, reweighting, and combination rules are best kept simple to enable the planner to interpret the model's numerical results.
8. Transform the outcome into a suitability map by choosing a set of patterns to represent the different degrees of suitability (e.g. a darker pattern for the most suitable sites, grading to lighter patterns for less suitable sites).
9. Generate a statistical report showing for each suitability class, the site identification, a number of acres, and other relevant data.

*Source: Kaiser, Edward J., David R. Godschalk, and F. Stuart Chapin. 1995. *Urban Land Use Planning*, 4th ed.. Chicago: University of Illinois Press.