

# RURAL LAND USE PROBLEMS AND POLICY OPTIONS: OVERVIEW FROM A U.S. PERSPECTIVE

by

Lawrence W. Libby<sup>1</sup>

## **Introduction**

The process and character of metropolitan expansion in the U.S. have been priority research and policy themes since at least the 1960's (see Clawson, 1971). In 1975, The Urban Land Institute published a seminal three volume examination of growth management beginning with the assertion, "The ethic of growth in America is increasingly being challenged; no longer is it being accepted unquestioningly as a premise of progress. Its effects on the quality of life are widely debated, and its management and control are seen as essential elements of modern land use policy" (Scott, 1975, p.7).

Related to and yet distinct from concern about the pressures of physical growth has been interest in retaining farmland. Some of the impetus for farmland protection comes as a sidebar to growth management, but farmland retention policy has its own political and economic history.<sup>2</sup> There is more to growth management than protecting farmland or open space, and the economic forces shifting land out of farming run much deeper than pressure from urban uses.

This paper considers the patterns of rural land use change, the associated problems, and policy response. It concludes with judgements about future policy directions.

## **Land Use Change**

---

<sup>1</sup>C. William Swank Professor of Rural-Urban Policy, The Ohio State University. Paper prepared for the Research Workshop on Land Use Problems and Conflicts, Orlando, Florida, February 21-22, 2002.

<sup>2</sup>Prominent in the policy history of growth management efforts in the U.S. is Section 701 of the 1954 Housing and Community Development Act. Through this program, \$100 million a year were allocated to local governments for the development of comprehensive plans. Region-wide coordination of local planning was facilitated by the review procedures as part of OMB Budget Circular A-95 in the mid-1970's. Neither continued beyond 1980, and many local plans completed with 701 funds have never been updated. Washington Senator Henry Jackson proposed Federal funding for state comprehensive plans in 1973, but fear of "top down" planning killed the idea. Air and water quality concerns have driven interest in land use planning in more recent years, with regional coordination of local transportation plans to limit air quality problems and "208 plans" dealing with effects of land use on water quality. Farmland protection has been largely state and local with action beginning in Maryland in 1956 with preferential assessment of farmland, exclusive agricultural zoning in California, Pennsylvania and Washington in the 70's (now 21 states). Federal investment in farmland policy came as the National Agricultural Land Study released in 1981 (see Lehman, 1995; Libby, 2002). Housing and Urban Development (H.U.D.) was the driving federal agency for early growth management, with U.S.D.A. the primary federal presence for farmland policy questions. State agency leadership is similarly divided between growth management and farmland policy.

Shifts in land use patterns are recorded in the National Resources Inventory (NRI) of USDA. It is a consistent and reliable national data set on how land is being used at selected points in time.<sup>3</sup> Current land use data are gathered from about 300,000 data points on non-federal lands of the 48 contiguous states plus Hawaii, based on satellite images with “groundtruthing” on a sampling basis. The NRI says little about *who* is on the land, focusing instead on categories of use that may be apparent from remote observation. It tracks conversion of specific areas from one use to another, as indicated on table 1 published as part of the 1997 NRI.

Table1: Changes in land cover/use between 1982 and 1997									
Land cover/use in 1982	Land cover/use in 1997								1982 total
	Cropland	CRP land	Pastureland	Rangeland	Forest land	Other rural land	Developed land	Water areas & federal land	
1,000 acres									
Cropland	350,265.3	30,412.1	19,269.4	3,659.2	5,606.5	3,158.9	7,097.5	1,485.1	420,954.0
Pastureland	15,347.0	1,329.6	92,088.3	2,567.9	14,091.4	1,619.0	4,230.0	732.8	132,006.0
Rangeland	6,967.5	728.5	3,037.2	394,617.4	3,021.6	1,702.7	3,281.3	3,383.2	416,739.4
Forest land	2,037.1	128.8	4,168.2	2,098.8	380,343.3	1,754.8	10,279.2	2,528.0	403,338.2
Other rural land	1,386.8	93.1	1,013.6	719.1	2,767.7	42,713.3	726.9	227.8	49,648.3
Developed Land	196.7	1.2	78.6	110.8	227.0	12.0	72,618.7	0.8	73,245.8
Water areas & federal land	797.5	2.7	336.6	2,204.0	897.7	180.8	18.1	443,760.6	448,198.0
1997 total	376,997.9	32,696.0	119,991.9	405,977.2	406,955.2	51,141.5	98,251.7	452,118.3	1,944,129.7

1982 land cover/use totals are listed in the right hand vertical column, titled "1982 total". 1997 land cover/use totals are listed in the bottom horizontal row, titled "1997 total". The number at the intersection of rows and columns with the same land cover/use designation represents acres that did not change from 1982 to 1997. Reading to the right or left of this number are the acres that were lost to another cover/use by 1997. Reading up or down from this number are the acres that were gained from another cover/use by 1997.

As apparent here, of the nearly 1.5 billion acres of non-federal land, about 421 million acres were cropland in 1982. More than 70 million acres of 1982 cropland were converted to other uses by 1997, of which 30.4 went into the Conservation Reserve Program (CRP), 19.3 million to pasture, 3.7 million to range, 5.6 to forest and 7.1 million acres of cropland were developed in that 15 year period. And 26.7 million acres of land being used for other things in 1982 were cropland in 1997, for a net cropland reduction of 44 million acres. Much of the increase in cropland in that period came from reduced restriction under the commodity programs of the 1996 Farm Bill and

<sup>3</sup>Data collection methodology changed with the 1982 NRI, thus time series comparisons are valid only for 1982, 1987, 1992 and 1997.

completion of CRP contracts, but the NRI shows that 196,700 acres of “developed” land in 1982 were being cropped in 1997.<sup>4</sup>

Developed area increased by more than 34% between 1982 and 1997 in the US with most of that increase coming in the eastern third of the nation, parts of Texas and California. Much of the West remains unpressured by development and cornbelt states of Iowa, Illinois, Missouri and western Indiana had developed area increases of 10 to 20%.

Between 1992 and 1997 more than 11 million acres were urbanized across the U.S., 3 million of which were defined by USDA as prime farmland. The top ten states were:

Acres Converted to Urban Use	
1992-1997 (000 acres)	
Texas	893.5
Georgia	851.9
Florida	825.2
California	553.4
Pennsylvania	545.1
N. Carolina	506.6
Tennessee	401.9
Ohio	364.8
Michigan	364.1
S. Carolina	362.0
Virginia	343.5

California, Texas and Florida have long been at the top of the development list, partly for the climate and other natural amenities that attract people and economic growth. Georgia is a newcomer to the list, with Atlanta as the prime urban magnet in the South. The Carolinas are coastal and hilly states with moderate climates, Virginia has climate, coast and proximity to Washington D.C. North Carolina experienced a dramatic turn-around in population migration patterns in the 1990's as far more people moved into rural areas than out of them (Renkow, 2001). Ohio, Michigan and Pennsylvania are industrial states that have experienced an increase in developed area primarily as people have migrated from urban centers to live in smaller rural communities or in the open countryside. Commercial and retail services follow the people. None of those has seen significant population increase. All of the top ten have important agricultural sectors that compete with higher paying development for the services of land.

---

<sup>4</sup>Developed land in the NRI includes large blocks of residential, commercial and industrial areas, prisons and other institutions, airports and other transportation facilities, as well as tracts of less than 10 acres surrounded by urban areas. It does not include the scattered residences on 5, 10 or even larger parcels, but will capture most rural subdivisions.

For over 50 years, the Economic Research Service (ERS) of USDA has assembled data from several sources to give a more complete picture of use categories for the total U.S. land base of 2.3 billion acres.

### Major Uses of Land, United States, 1959-97 <sup>1</sup>

Land Use	1959	1964	1969	1974	1978	1982	1987	1992	1997
<i>Million acres</i>									
Cropland	458	444	472	465	471	469	464	460	455
Cropland used for crops	359	335	333	361	369	383	331	338	349
Idle cropland	34	52	51	21	26	21	68	56	39
Grassland pasture and range <sup>2</sup>	633	640	604	598	587	597	591	591	580
Forest-use land <sup>3</sup>	728	732	723	718	703	655	648	648	642
Special-use areas	123	144	141	147	158	270	279	281	286
Miscellaneous other land <sup>4</sup>	329	306	324	336	345	274	283	283	301
Total land area	2,271	2,266	2,264	2,264	2,264	2,265	2,265	2,263	2,264

<sup>1</sup> Adapted from Vesterby and Krupa (2001), p. 4.

<sup>2</sup> Other grassland pasture and nonforested range (excludes cropland used only for pasture and grazed forest land).

<sup>3</sup> Excludes forest land in parks and other special uses of land.

<sup>4</sup> Includes urban areas, areas in miscellaneous uses not inventoried, and areas of little surface use such as marshes, open swamps, bare rock areas, desert, and tundra.

Land has gone in and out of active cropping over the 1959-97 period as prices and farm programs affect incentives for the farmer. The largest amount of active cropland was in 1982 when there were few acreage restrictions in national policy and at its lowest just five years later when CRP was in full swing. The largest proportionate increase over the whole period was for “special uses” that include transportation areas, parks and wildlife areas, wilderness, rural and farm residences. Inclusion of Alaska in the ERS data set is evident in the “miscellaneous use” category that includes tundra, swamps, desert as well as urban or developed areas. Total urban area has increased from 47 million acres in 1980 to 66 million acres in 1997 (Vesterby and Krupa, 2001, p. 21-22). ERS estimates that non-farm rural residences occupied 73 million acres in 1997, up from 56 million in 1980.

The increase in number of households is a better indicator of demand for development space than is population change. Rates of household formation reflect cultural trends and general economic conditions as people separate into smaller households for economic and social independence. Heimlich and Anderson (2001) point out that average household size has declined from 3.7 in 1950 to 2.6 in 2001, resulting in increased demand for houses, many at the urban fringe. While median lot size of new houses remains about .5 acres as new households look to townhomes and

condominiums, the average has increased to 2 acres reflecting the trend toward 5 and 10 acre rural lots. Large lot housing is about half of new housing construction in rural areas and average lot size outside of metropolitan areas is nearly 3 acres (see Heimlich and Anderson, 2001).

Recent census data show the trend toward rural living. In Ohio, for example, there are more people living in unincorporated townships than in large or small cities and the rate of increase in township residence has been huge in recent years, over 1/3 increase between 1960 and 2000.

Development of farm and other rural land is small in proportion to total land being farmed in some way. There is just no evidence that development threatens US food production capacity in the foreseeable future (see Vesterby, Heimlich and Krupa, 1994; Libby, 1997). But development patterns do affect the mix of services available from rural land and therefore are the focus of considerable policy attention.

### **Rationale for Rural Land Policy**

The reasons for policy intervention in the pattern and pace of rural land use change are diverse. These policies may have little observable impact on the macro-categories of use indicated in the NRI and other data sets. But they can make a profound difference in the quality of life at the margin, the interface between urban and rural land uses. People seek to reduce the frictions of unplanned land use conversion and to sustain or create a bundle of land services consistent with prevailing preferences. Whenever rules for land use change are adjusted in some way, some participants in the land market perceive a gain while others feel they are worse off. It all depends on the starting point, of course, and perhaps those who perceive loss were imposing cost on others under the old rules. Or perhaps some land services were inadequately defined or reflected in the land market.

The Frictions of Growth. Arguably, the single phenomenon having the greatest impact on stress at the rural-urban interface is unplanned low density residential development. The perceived amenities of a countryside home are a powerful force indeed. Some of those single family homes are in subdivisions with lots of less than an acre; others are scattered on 5 or 10 acre parcels. People living in the countryside demand services that may not be available in the rural villages nearby. Franchise retail establishments are tuned to this increasing demand for food, fuel and health needs, and they are among the first to move out there to accommodate. Too seldom is there adequate infrastructure to handle the increased load; costs for schools, roads, fire protection and other community services increase.

Scattered development patterns are predictable results of the incentives inherent in infrastructure financing systems in the US that accommodate, even encourage, building at the urban fringe or beyond rather than downtown or in planned high density suburbs. David Rusk refers to “the sprawl machine,”(1999, p.86) as the structure of subsidized mortgages for new detached single family homes, urban renewal programs that replace urban residences with high rise office buildings, federal highway construction and sewer extensions that open new land for development. Henry Richmond puts it more directly, “Sprawl is the law of the land” (2000, p.10) in which housing subsidies favor single family over multiple units and local zoning policies yield

to any development with little attention to guiding growth. Local governments depend on the property tax for services and the temptation for accommodating development is too great, even in the face of evidence that much of that development costs more to serve than it generates in local property tax. There are several friction points.

1. Congested roadways. Many of those who move to rural areas for the open spaces still expect to work and shop in a nearby city. New houses appear in the countryside with little prior attention to whether existing roads can handle the extra traffic. Transportation policies seem to emphasize responding to demand for more or wider roads, rather than trying to shape development patterns with roads or other forms of transit. Federal spending on highways for private automobiles far exceeds that for mass transit (US General Accounting Office, 2000). US travelers are far more dependent on private automobiles than travelers in any other developed nation.<sup>5</sup> “Road improvement” projects only add to the congestion and frustration as existing roadways are narrowed for the construction process that never seems to end. “Stuck in traffic” is the predominant state of being for people both within and outside of our metropolitan areas. Ulrich and colleagues at the Transportation Research Center at Texas A&M University have identified significant psychological impacts of the clutter and congestion of the suburban commute (Ulrich, R. *et al.*, 1991).

2. Cost of Services. Many case studies throughout the US have documented the added cost of servicing dispersed rather than more concentrated populations. The general conclusion is that residences in low density subdivisions or scattered parcels generate less in property tax revenue than it costs to provide them with roads, police and fire, and schools. Some communities have explicitly recognized that imbalance by trying to discourage new housing and encourage commercial development instead. The American Farmland Trust, a national non-profit group encouraging farmland protection and stewardship, has sponsored dozens of local “cost of community services” studies throughout the country and conclude that on average residential development requires \$1.02 to \$1.67 in service cost for every dollar in property tax revenue they generate, while commercial and industrial cost \$.03 to \$.83 for a dollar in taxes (AFT, 1997).

These are admittedly partial analyses, omitting such other fiscal impacts as sales taxes, income generated by new residents and the related economic multiplier (see Irwin and Kraybill, 1999), but they are useful comparisons for policy purposes. The lesson is that building new single family homes on open land may be, and often is, a net drain on local property tax coffers. It is a matter to be carefully examined within each community dealing with development options. There are equity considerations as well. Existing residents find their taxes going up to add the waste treatment plant or widen the road to serve new homes at the periphery. Political strife is certain under those conditions (see Downs, 1994). Communities in several states have enacted “development impact fees” to shift the marginal cost of new development onto the new residences (see Carrion and Libby, 2000).

---

<sup>5</sup> In 1995, 84% of trips in the US were by private auto and 3% by public transport, as compared to 64% and 14% respectively in England, 36% and 11% in Sweden. Far more trips were on foot in Sweden (39%), France (30%) and England (12%) than in the US (9%), partly explained by the more dispersed development pattern in the US (Lincoln Institute, 1995).

3. Competition among communities. With land policy and other decision authority vested primarily at the most local level in the US, communities inevitably compete with each other for location of tax-generating activities. They can offer various incentives, from free land to tax abatements to get the right industrial firm. But communities also compete for residents, with open space, good schools, recreation facilities, security and other amenities. Many of these localities face the dilemma of preferring both a low wage work force for the potential industry and high income residents who pay more taxes. Industries seeking a new location will often play the communities against each other, seeking the best possible deal. Existing business can get into the game as well, threatening to leave town if the terms are not right.

Economic segregation is the inevitable, though unintended, result of competition as communities enact zoning to establish more exclusive higher income neighborhoods, isolated and protected from industry and lower income neighborhoods. These higher income areas frequently organize their own communities with local control to maintain a certain set of housing standards and quality of life. Zoning, subdivision rules, and housing standards may create *de facto* exclusionary regulation that keeps those neighborhoods economically and racially homogeneous (Downs, 1994, p.21-26). A lack of “affordable housing” for a diverse population led Montgomery County, Maryland, essentially a suburb of Washington, D.C., to enact an ordinance in 1974 requiring that at least 20% of any new housing project be “moderately priced housing units.” One-third of those units would be purchased by the county for low income tenants. In return the developer could increase housing density in the rest of the development project. In the past 25 years, developers have built nearly 11,000 moderately priced units in Montgomery County (Rusk, 1999, p.186-194).

4. Urban disinvestment. A consequence of growth at the urban fringe is nearly always decline in the center. In 2002, Columbus Ohio is feeling the effects of massive retail and residential growth at the periphery. Retail capacity in three huge malls built since 1987 has simply redistributed sales from downtown to the suburbs. There is not enough spending power to keep all the stores in business. The large retail “anchors” have abandoned the city center for the new malls at the urban fringe. Other service firms flock to the mall vicinity and residential developments follow. An aggressive annexation policy has enabled Columbus to capture the tax revenue from those outlying malls, located many miles from the real center of the city, while losing revenue from the downtown. Columbus now faces the problems of inner city decline that are so familiar to urban America.

There are racial and ethnic dimensions to the economic segregation in most US metropolitan areas (see Rusk, 1999). While these conditions exist in other developed nations as well, Kenneth Jackson argues that the greater degree of income inequality and balkanization of government in the US makes this problem more pronounced (2000). Central city problems are clearly a friction point in the growth pattern of US metropolitan areas, though the extent, nature and policy implications are beyond the scope of this paper.

The Services of Open Land. Beyond the economic and social strain of relatively undirected growth are the positive services available from farmland and other open lands. These are key to the rationale for rural land policy in the US and elsewhere as well.

1. Long term food security. No serious policy analyst would assert that impending food scarcity is a defensible rationale for protecting US farmland. There is simply too much evidence to the contrary. But many voters support state and local farmland protection efforts with the intuitive sense that arable cropland has limits and the prudent course is to develop other lands and encourage farmers to continue farming. Food production technology continues to substitute for land and people engaged in farming, though experts differ on the potential. Waggoner, *et al.* express great optimism about future production capacity (1996), while Pimental and Giampietro have less confidence in the ability or willingness of farmers to employ those technologies in a timely way in the face of competition for water and our best farmland (1994).

The food supply rationale is really about risk preference. Should we as a society assume that past trends of productivity increase will continue, or should we be more cautious with the physically limited supply of arable farmland? Many participants in the land policy debates gain utility from knowing that future generations will have a more secure food supply with thoughtful farmland policy. Protecting farmland has a short run cost, in the potential returns to an alternative use of those lands. Weitzman (1999, p.29) proposes that a below market discount rate is warranted on actions that could imply a resource catastrophe, even if the probability is very low. He would employ the lower rate for the first 25 years, declining to 0% beyond 300 years. The consequence of underestimating the amount of farmland needed to feed future generations would likely be greater than the consequence of saving “too much” farmland. The “precautionary principle” so prominent in European environmental policy makes sense in this context (Foster, *et al.*, 2000).

2. Natural resource services. By its very nature, farmland produces eco-system services that people value and seek to secure through policy. Most of these are economic public goods, non-rival in consumption and non-exclusive. One person’s sense of well-being from knowing that there is adequate bird habitat, species diversity or groundwater recharge does not reduce that service to other consumers. While direct exercise of effective demand for these services is generally not possible, there are organizations that will purchase lands for these non-exclusive services using funds donated by people who value the services. There are obvious free rider problems with any such public goods, though tax incentives do offer private benefit to those who contribute. Donors may also select those land purchase programs that match their preferences most closely, and where the benefits are most apparent, as with farmland within a particular state or even a particular farm that seems to have special significance. Presumably donors gain more service or satisfaction from the land purchase than they would from an alternative use of those funds.

Several studies have attempted to estimate what the bundle of natural resource services from farmland would be worth if sold in a market. The most complete analysis was by Costanza *et al.* (1997) in which value of various eco-system services of farm and other open land was estimated as the cost of providing those same services in some other way. Nutrient cycling, nitrogen fixation, soil formation, biological balance among species, growth medium for plants,

and genetic diversity that may yield valuable medicines are among the services examined. Farmland can also mitigate flooding, provide a medium for pollination to assure plant reproduction, and reduce water pollution.

Active farmland generates various amenity services as well. Farms are key to a rural heritage for many people, and they will support farmland protection on that basis alone. “Ruralness” is not just the absence of city, with farmland a key part of what distinguishes city from country. Farms are important to a countryside that provides relief from the stresses of urban life. The opportunity to buy at a “farmers market” is important to many voters and taxpayers. There is the sense that produce bought at a farm is somehow better than produce from a grocery store. People will incur cost and inconvenience to experience ruralness and we should assume that they value the ruralness more than the time and gasoline needed to get out there.

Some of these amenity services can be purchased. People often pay more for “farm fresh” produce at the farm, apparently getting some form of utility beyond the fruit itself. Farms can be a recreation destination, through a bed and breakfast experience or the opportunity to hunt or hike for a fee. For example, M and M Hunting Lodge provides visitors to Delaware’s eastern shore the chance to hunt geese and ducks on an old dairy farm (Matarese and Matarese, 1990). Urban tourists can contact Back Roads Adventures in Preston County, West Virginia for a guided tour of the farms, inns, crafts and folklore of the region, for a price. Farming is the main feature of the economic development plans in Loudoun County, Virginia. Their primary goal is to keep the 200,000 acre farm economy and encourage a varied farm tourism sector (Rural Economic Development Task Force, 1998). There are colorful brochures for self guided specialty tours for the Christmas season, wineries, and Fall foliage. Hunters pay up to \$600 a day for access to prime whitetail deer habitat on the Hoover Farm in western Illinois. Deer like the corn stubble, and hunters like the deer (Miller, 1999). There are similar examples in all farm states.

Several studies have estimated what people would be willing to pay to avoid development on specific farmland (Bergstrom, 1985; Beasley, 1986; Halstead, 1984) as an indication of the value they place on the amenities of open land. At least some of the amenity associated with open farmland is an intrinsic value that people associate with healthy biological eco-systems themselves, beyond any definable “service” (see Bergstrom, 2001).

### **The Policy Response**

There is clearly demand, some of it effective demand revealed in purchase preferences and some of it political demand through the policy process, for the many services of farmland. People have also supported policies to reduce the frictions of development. The same basic set of legal options has been applied to both purposes. They draw on the full set of governmental powers, to regulate, to tax and to spend for public purpose.

Regulate the Use of Land. Enacting regulations on what uses are permitted within identified districts remains the primary policy option for local governments in the US. Zoning has been part of local policy in cities, villages, counties and townships since deemed to be an

acceptable application of the police power in the late 1920's with *Euclid v. Ambler Realty*<sup>6</sup>. The zoning ordinance must establish that the public's health, safety and general welfare are protected by limiting uses of land within defined districts. In theory, any cost or inconvenience to the owner within a district is more than offset by the broader social benefit.

Other regulatory devices include sub-division controls, required sewer and water system connection, building permits, even growth moratoria. Local governments act, within state enabling statutes, to establish the rules within which land can change use.

While nearly all municipalities in all 50 states use zoning to guide growth, only 24 states have zoning designed to protect agriculture. Of those 24, only Hawaii has true state-wide zoning, while Oregon has required county agricultural zoning as part of the growth management plan; Maryland, California, Pennsylvania and Washington have active county-level programs (AFT, 1997, p.51-53). The legal challenge with agricultural zoning is to establish a relationship to "public health, safety and general welfare," the bases for valid public purpose.<sup>7</sup> Some of those ordinances define "exclusive agricultural zones" within which only land use compatible with farming is permitted, while others rely on minimum lot sizes of 20 to 60 acres to discourage non-farm development.

The primary legal challenges of zoning, particularly in rural or suburban areas, turn on the "takings" clause of the U.S. Constitution, concerns about exclusion and the personal right of mobility. The basic conclusion of regulatory takings cases is that unless all economic opportunity is eliminated by the ordinance, the restrictions are legal and compensation is not required (see Cordes, 1999). Several states have enacted property rights protection statutes to give citizens greater access to legal redress for alleged unfairness of zoning and other land use regulations that lower property value. These essentially sidestep the Constitutional takings tests within limitations described in each ordinance (see Cordes, 1997). Only Florida and Texas spell out the extent of property value loss deemed to be unacceptable (Libby, ? NPPEC proceedings) as a threshold for legal action. The 18 or so other states require only that property rights impacts be an explicit part of the decision on enacting controls. Exclusion cases against zoning generally focus on the absence of affordable housing, economic and therefore unintended racial discrimination and work on the equal protection or due process clauses of the 14th Amendment to the US Constitution (Laufer, 1975).

---

<sup>6</sup>Village of Euclid v. Ambler Realty Co., 272 U.S. 365 (1926). Ambler Realty Company had charged that the very idea of zoning goes beyond the police power, and thus constitutes an unconstitutional "taking" of private property without compensation. The Supreme Court found that the stated purpose of zoning, to separate incompatible uses, did in fact further protection of the health, safety and general welfare of village residents. The case was made in terms of separating industrial and commercial activities from residential. The court further established a "presumption of validity" for zoning as a local legislative action. The burden is on the complainants to demonstrate lack of public purpose (see Babcock and Bosselman, 1975; Reiner, 1975).

<sup>7</sup>Ohio zoning enabling law for counties and townships omits the "general welfare" rationale, making true exclusive agricultural zoning virtually impossible.

Tax Incentives. The various tax instruments for guiding growth and protecting open land either reduce the tax burden for land uses that have social value, or raise the cost of development to incorporate full social cost. Land uses that raise the capital cost of infrastructure in a developing area may be assessed an impact fee under state or local programs. Thus a more efficient development pattern is encouraged by requiring those who raise the cost of infrastructure to bear that added cost (Peddle and Lewis, 1996). The builder will try to pass those extra costs along in the purchase price of the home.<sup>8</sup> Other programs grant tax concessions for development in certain areas, through “tax increment financing” or selective tax abatements. These affect the pattern of development by giving advantage to citing in target downtown areas rather than in the suburbs or at the urban fringe.

All states have programs to tax farmland on a lower value than other land to encourage the farmer to stay on the land. These programs range from simple use value assessment, to use value with roll back if the eligible land is developed, to restrictive agreement as condition for use value assessment, to “circuit breaker” in which the farmer receives a state income tax refund if property tax exceeds a threshold percentage of household income (AFT, 1997, p.147-166). Special capital gains tax recapture provisions in several New England states require that a portion of the gain resulting from the development of open land go back to the state. The state then reclaims some of the cost of public infrastructure that contributed much of the land value captured by the owner in the sale for development.

Federal income and estate tax law makes it attractive for some farmers to donate their development rights to a state government agency or non-profit land trust. Value of those rights is a charitable donation against income if the transfer is permanent, and affects the value of the estate for tax at time of transfer between generations.

These are incentives to guide rather than control growth. They work only to the extent that the value of the incentive when added to farm income and other returns to the farmer is greater than the value of the other land use options. Cost is borne by taxpayers who must offset the subsidy to farmers. Studies of individual tax incentive programs suggest that they “buy some time” for farmland that may have development potential but have little long term effect on development patterns unless seen as part of a package of regulatory and spending programs to influence private choices. Development rights donation, on the other hand, is permanent protection.

Spending. In effect, tax incentives are spending, but governments have tried more direct ways to implement the perceived public interest in land use patterns -- they buy the land outright, or the discretion necessary to have the desired land use. The US has a vast system of national, state and local parks, wildlife areas, forests, refuges, wilderness areas and recreation areas owned and managed by government or by non-profit land trusts. Growth is controlled completely in such situations, or at least to the extent supported by agency policy.

---

<sup>8</sup>Success in shifting the impact fee will depend on elasticity of demand for the housing. If the prospective home owner has good substitutes for the home with the added fee, the developer will have to absorb the cost.

Other programs purchase conservation or agricultural easements to permanently limit the ability of the owner to install a land use not consistent with the public interest. The owner retains essentially all use rights except the right to develop. These are voluntary sales by the owners with the idea of compensating the private land owner for the open space, ecological and amenity services provided for the broader public. Suffolk County, on Long Island New York, had the first public program to purchase development rights to farmland, in 1974. Maryland and several New England states began programs in the mid 70's, several more in the early 1980's following the National Agricultural Land Study, and Ohio is the most recent addition in 2000. Nineteen states now authorize purchase of agricultural easements. Funds come from local sales or property tax initiatives, targeted bond sale by the state and some federal dollars through the Farmland Protection Program of the 1996 Farm Bill (see AFT, 1997; Libby, 2002).

Another set of spending programs would encourage private actions that protect water quality and fragile ecosystems near active farms and take the most erosive land out of production. The Environmental Quality Incentive Program (EQIP) is part of the 1996 Farm Bill. It compensates the farmer for actions to reduce run-off. The Conservation Reserve and Wetland Reserve programs essentially lease environmentally important lands (see Batie and Ervin).

### **Future Policy Directions**

Policy to manage growth and protect farm and other open lands is incremental and iterative at best. That is both the strength and frustration of American political process. New programs are proposed, withdrawn, or just “run up the flag pole” to test the political winds. Stakeholders consider how the particular change in land market rules would affect their interests. Someone must articulate a specific vision of “the public interest” in the form of a concrete proposal before the process can begin. There are several specific policy directions apparent in these debates.

Regional action. The American institution of “home rule” is unique among developed nations. It is a source of strength in keeping authority close to the people, but typically does not handle well those phenomena like physical growth that transcend local boundaries. Land use controls are local prerogatives within state enabling authority. Transportation is an exception. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) acknowledged that transportation systems must be planned and implemented across localities. Air quality improvement is an important part of the rationale for regional attention to transportation systems by approved regional councils in all states. Because there is a clear link between human health and air quality, people can more readily see the need to override local authority for transportation planning than for other types of land use planning.

A 2000 national poll found that 80% of Americans support greater cooperation on growth management matters among local units of government (Smart Growth America). People recognize that the effects of growth do not stop at the border. Only Portland, Oregon has real regional government with an elected council. Minneapolis-St. Paul has the Twin Cities Metropolitan Council appointed by the Governor. Ohio and other states have enabling laws for agreements among local jurisdictions on growth management, including the opportunity for tax sharing to get things done (Libby, 2001).

There will be more experiments in regional collaboration on growth issues in the years ahead, some dealing with specific functions like housing and transportation, others more comprehensive. Regionalism makes sense. It will not replace home rule, but will make it better by enabling people to have greater influence over economic forces that cross local borders.

Directed Public Spending. It is clear that state spending for water and sewer, road improvement, parks, police and fire protection influences where businesses locate and where people want to live. Maryland's "smart growth initiative" emphasizes the relationship between discretionary spending and the pattern of development (Tregoning, 2002). State funds for water and sewer, roads, schools, economic development and other services are directed toward "priority funding areas" and excluded from open land at the fringe. Georgia's Governor Barnes has significant authority over public spending in the Atlanta region with the intent of reducing air quality problems traced to unplanned growth. More states will undertake programs of directed spending to guide, rather than always accommodate, development.

More Ag Easement Purchase Authority, Land Law Reform. Other states will join the 19 currently authorizing purchase of agricultural conservation easements. The authority comes when there are obvious reasons for it, when there is expressed concern for protecting farmland at the rural-urban fringe. Easement purchase programs are difficult to administer and pay for. But they have the intuitive appeal of a "user pays" approach to securing farmland amenities. These programs require consistent rules for defining the public's interest in spending for farmland development rights and establishing priorities among eligible farms. No state will take this on until there is clear benefit to be gained.

There will also be land policy reforms in several states, reducing the anomalies in zoning, annexation and subdivision law that frustrate thoughtful growth management. Subdivision control thresholds of 5, 10 or even 25 acres (Colorado) have unintended impacts on development patterns, but are imbedded in the existing politics of land use change. There are other provisions as well, many unique to a given state. Any set of land use rules shapes the land market; change in those rules will redistribute opportunity and those who lose in that shuffle will object. Policy reform should involve a comprehensive examination of the whole bundle of land use laws to capture the relationships among them and avoid creating more unintended results.

Require that new development pay its way. Development impact fees and exactions are increasingly popular ways to fund infrastructure. They also can improve chances that the needed facilities are available before new development goes in, thus affecting the pattern of development. This "user pays" approach to providing public services is increasingly attractive among local officials, planners, and economists as the fairest approach to distributing the cost of development. Fees have been particularly effective in Florida with their "concurrency rule" that all infrastructure be in place prior to development and in California, slower to come in northeastern states (see Peddle and Lewis, 1996). If installed in conjunction with a comprehensive development plan, these fees also can be versatile policy. Paul Dimond, a critic of interventionist growth management policies, argues that the best approach to guiding growth is to

shift the full marginal cost of development infrastructure onto those demanding it, empower all citizens to exercise choice of location, and “get out of the way” (2000).

Federal support for local planning. Local governments will retain the initiative for land use planning and control, but a new source of federal funds is badly needed. There has been little federal support for over 30 years and the basic infrastructure for rural planning badly needs an overhaul. Few towns, villages or counties have professional planners. Even technical back-up in regional planning organizations is inadequate. Thoughtful planning is the most important element in improved policy. Planning gets people together, thinking and talking about their common future, collecting and analyzing relevant data in the process. There is clearly a national stake in effective local planning and we need a new version of Senator Henry Jackson’s Land Use Planning and Policy Assistance Act of 1973. Hopefully there is a member of Congress with leadership and vision who can respond.

## References

- American Farmland Trust, *Saving American Farmland: What Works?*, Northampton, MA: The American Farmland Trust, 1997.
- Batie, S. and D. Ervin. "Flexible Incentives for Environmental Management in Agriculture: A Typology," *Flexible Incentives for the Adoption of Environmental Technologies in Agriculture*, F. Casey, A. Schmitz, S. Swinton and D. Zilberman, eds., Norwell, MA: Kluwer Academic Publishers, pp. 55-78, 1999.
- Beasley, S., W. Workman, N. Williams. "Estimating Amenity Value of Urban Fringe Farmland: A Contingent Valuation Approach," *Growth and Change*, 17(1986), pp. 70-78.
- Babcock, R. and F. Bosselman. "Land Use Controls: History and Legal Status," *Management and Control of Growth*, Washington, DC: The Urban Land Institute, Volume 1, pp. 196-210.
- Bergstrom, J. "Postproductivism and Rural Land Values," Athens, GA: Department of Agricultural and Applied Economics, FS-01-20, November 2001.
- Bergstrom, J., B. Dillman, and J. Stoll. "Public Environmental Amenity Benefits of Private Land," *Southern Journal of Agricultural Economics*, Volume 17, (July 1985), pp. 139-149.
- Carrion, C. and L. Libby. "Development Impact Fees, A Primer," AEDE-WP-0022-01, <http://aede.osu.edu/resources/docs>
- Clawson, M. *Suburban Land Use Conversion in the United States: An Economic and Government Process*, Baltimore, MD: Johns Hopkins Press for Resources for the Future, 1971.
- Cordes, M. "Leapfrogging the Constitution: The Rise of State Takings Legislation," *Ecology Law Quarterly*, 24:187(1997).
- Cordes, M. "Takings, Fairness, and Farmland Preservation," *Ohio State Law Journal*, 60(1999), pp. 1033-1084.
- Costanza, R., R. d'Arge, R., deGroot, S. Barber, M. Grosso, B. Hannon, K. Linsburg, S. Noem, R. O'Neill, J. Paruelo, R. Raskin, P. Sutton, and M. van den Beit, "The Value of the World's Ecosystem Services and Natural Capital," *Nature*, 253-260.
- Dimond, P. "Empowering Families to Vote with their Feet," *Reflections on Regionalism*, B. Katz, ed., Washington, DC, The Brookings Institution Press, 2000, pp. 249-272.
- Elkinton, L. "Back Roads Adventures: A Private Enterprise Model for Nature Study on Public and Private Land," in Grafton, W., A. Farrise, D. Colyer, D. Smith and J. Miller, eds., *Income Opportunities for the Private Landowner through Management of Natural Resources and Recreation Access*, Morgantown, WV: West Virginia Extension Service, 1990, pp. 301-305.
- Foster, K. P. Vecchia and M. Repacholi. "Science and the Precautionary Principle," *Science*, 288(12 May 2000), pp. 979-981.
- Halstead, J. "Measuring the Nonmarket Value of Massachusetts" *Agricultural Land -- Journal of the Northeast Agricultural Economics Council*, 13(1984), p. 12-19.
- Heimlich, R. and W. Anderson. *Development at the Urban Fringe and Beyond: Impacts on Agriculture and Rural Land*, Washington, DC: Economic Research Service, U.S. Department of Agriculture, AER 803, 2001.

Irwin, E. and D. Kraybill. "Costs and Benefits of New Residential Development," August 1999, unpublished paper available on <http://AEDE.osu.edu/programs/comregecon/htm>.

Jackson, K. "Gentleman's Agreement: Discrimination in Metropolitan America," in *Reflections on Regionalism*, B. Katz, ed., Washington, DC:Brookings Institution Press, 2000, pp. 185-217.

Lauber, D. "Recent Cases in Exclusionary Zoning," *Management and Control of Growth*, Volume 1, Washington, DC:The Urban Land Institute, pp. 465-476.

Loudoun County Rural Economic Development Task Force. "The 200,000 Acre Solution: Support and Enhancing a Rural Economy for Loudoun's 21<sup>st</sup> Century," Leesburg, VA:Loudoun County Office of Agricultural Development, November 1998.

Lehman, T. *Public Values, Private Lands*, Chapel Hill:The University of North Carolina Press, 1995.

Libby, L. "Farmland is Not Just for Farming Anymore: The Trends," *Agricultural Policy for the 21<sup>st</sup> Century*, L. Tweeten and S. Thompson, eds., Ames, IA:Iowa State University Press, 2002, pp. 184-203.

Libby, L. "Implementing Good Intentions," *Understanding Public Policy*, Oakbrook, IL:The Farm Foundation, 1997, p. 136-149.

Libby, L. and P. Stewart. "The Economics of Farmland Conversion" in *Under the Blade: The Conversion of Agricultural Landscape*, R. Olson and T. Lyson, eds., Boulder, CO:Westview Press, 1999.

Matarese, I. and L. Graham. "Waterfowl: An Alternative Income Producing Option for Recreational Access," in Grafton, W., A. Farrise, D. Colyer, D. Smith and J. Miller, eds., *Income Opportunities for the Private Landowner through Management of Natural Resources and Recreation Access*, Morgantown, WV:West Virginia Extension Service, 1990, pp. 301-305.

Miller, D. "Farming the Wild Side," *Progressive Farmer*, August 1999, pp. 20-22.

Peddle, M. and J. Lewis. "Development Exactions as Growth Management and Local Infrastructure Finance Tools," *Public Works Management and Policy*, 1:2(October 1996), pp. 129-144.

Pucher, J. "Urban Passenger Transport in the United States and Europe: A Comparative Analysis of Public Policies," *Transport Reviews*, 15:2, 1995, pp. 99-117.

Richmond, H. "Metropolitan Land Use Reform: The Promise and Challenge of Majority Consensus," *Reflections on Regionalism*, B. Katz, ed. Washington, DC:Brookings Institution Press, 2000, pp. 9-39.

Reiner, E., "Traditional Zoning: Precursor to Managed Growth," *Management and Control of Growth*, R. Scott, D. Brower and D. Miner, eds., Washington, DC:The Urban Land Institute, 1975.

Renkow, M. "Non-Metropolitan Population Growth in North Carolina: Rural Renaissance or Urban Sprawl?," *Southern Perspectives*, 5:1, Summer 2001, Mississippi State, MS:Southern Rural Development Center.

Rusk, D. *Inside Game, Outside Game*, Washington, DC:Brookings Institution Press, 1999.

Scott, R. "Management and Control of Growth: An Introduction and Summary," *Management and Control of Growth*, R. Scott, D. Brower and D. Miner, eds., Washington, DC:The Urban Land Institute, 1975.

Smart Growth America. "Americans Want Growth and Green: Demand Solutions to Traffic, Haphazard Development," Washington, DC:Smart Growth America, October 16, 2000.

Tregoning, H. "A Comprehensive Approach to Rural Preservation: Maryland's Smart Growth Initiative," *Protecting Farmland at the Fringe: Do Regulations Work? Strengthening the Research Agenda Conference Proceedings* (forthcoming 2002).

Ulrich, R., R. Simons, B. Losito, E. Fiorito, M. Miles and M. Zelson. "Stress Recovery During Exposure to Natural and Urban Environments," *Journal of Environmental Psychology*, 1991, Volume 11. pp. 201-230.

U.S. General Accounting Office. *Local Government Issues: Federal Opportunities and Challenges*, Washington, DC:General Accounting Office, 2000.

Vesterby, M. R. Heimlich, and K. Krupa. *Urbanization of Rural Land in the United States*, Washington, DC:Economic Research Service, U.S. Department of Agriculture, AER-673, 1994.

Vesterby, M. and K. Krupa. *Major Uses of Land in the United States, 1997*, Washington, DC:Economic Research Service, U.S. Department of Agriculture, Statistical Bulletin No. 973, 2001.

Weitzman, M. "Just Keep Discounting, but . . . .," *Discounting and Intergenerational Equity*, P. Portney and J. Weyant, eds., Washington, DC:Resources for the Future, 1999.