

VI. Local Responses to Growth

In all States, local governments have been delegated authority for control of land use and growth. Since early in the last century, planning and zoning have been the principal tools for controlling growth and directing land-use change in local communities. Increasingly, State governments are taking a more active role in attempting to strategically change incentives and disincentives for development, without exerting direct control over growth, a process known as “smart growth.” Because of strong interest in maintaining individual landowners’ property rights, direct financial incentives to keep rural land in agricultural uses have become important tools. These include preferential or use-value property taxation and direct purchase of development rights.

Most rural communities experiencing growth have their hands full simply trying to catch up with the growth in demand for public services, such as education, water and sewer, and police and fire. Some respond with actions aimed at limiting growth and mitigating its consequences. There is a fine line between rural counties at the metropolitan fringe that are still trying to attract development, and those that have been all too successful at attracting growth and are now trying to control development.

Playing Catch-Up

The need to play catch-up seems to be the most common response of local governments. A recent General Accounting Office (GAO) survey of almost 2,000 governments in cities over 25,000 population (949 responded) and all metropolitan counties (609 responded) found that 53 percent of the counties and 35 percent of the cities claimed “sprawl” was a high or very high concern. GAO identified these respondents as “communities concerned about sprawl” (44 percent of rural counties were concerned about “sprawl,” compared with 56 percent of nonrural counties). As a whole, GAO found that the priorities of the sprawl-concerned communities were fairly similar to the priorities of all communities. The most frequently cited priorities in planning for the future involved increasing the local tax base to support better schools and roads, attracting businesses, and enhancing transportation systems (U.S. GAO, 2000). But more sprawl-concerned communities (66 percent) were experiencing fast growth than non-sprawl communities (46 percent), which may explain why sprawl-concerned communities were more likely

than other communities to place a high priority on enhancing their transportation systems.

Planning priorities differed between more urban and more rural places. Metropolitan counties that identified themselves as “rural” (27 percent of the metro counties responding to the survey) placed a much higher priority than “nonrural” counties on increasing job opportunities and attracting new development to areas with infrastructure; “nonrural counties” were relatively more interested in enhancing their transportation systems to deal with growth. Cities put a greater priority on revitalizing downtowns, which are also affected by growth, than did counties.

How Local Governments Address Growth Problems

This section provides examples of some of the ways local communities deal with problems caused by growth. The examples are based on information and statements from local officials when ERS conducted its study of eight counties experiencing growth in the 1980’s and 1990’s (Reeder et al., 2000). Growth-related problems are often hard to address because they compound each other. For example, growth control advocates favor concentrating development in town centers. However, towns such as Shelton in Mason County, Washington, cannot grow due to limits on infrastructure, which is constrained by an inadequate tax base. Growth and development could increase the tax base, but is constrained by lack of infrastructure in the town, and so on.

Some places have gotten around this conundrum by raising special sales taxes, imposing impact fees on developers, or creating special districts where taxes are raised to pay for infrastructure and public services needed for development. However, these efforts are not always successful since local voter approval may be required. In some cases, State regulations constrain local efforts to raise more revenues, such as in Monroe County, in the Pocono Mountains of Pennsylvania, where State rules make it difficult to use impact fees.

Aggressive business recruiting is another approach to add more to the tax base than to public spending on infrastructure and services. Monroe County, Pennsylvania, is using tax incentives together with industrial and business parks, to entice new businesses into the area.

However, such an approach is not without risk. According to John Woodling, of the Monroe County Planning Commission, “Some of the local schools had a concern that the tax incentive program might give away too much tax revenue for the number of jobs it created. More important was the concern that new firms would hire too many nonresidents who subsequently would move into the county, bringing their children with them, and that this could ultimately burden the school system. However, Monroe County statistics suggest these concerns are not justified, because most of the new employees of these firms are county residents at the time they are hired” (Reeder et al., 2000).

Many localities take advantage of Federal programs to address their growth-related infrastructure, business-attraction, and affordable-housing needs. For example, some communities attempt to combat growth-induced transportation problems through public transportation, a federally subsidized activity. Public transportation has the added advantage of strengthening central locations that are more readily served by public transit systems. But funding is limited for these activities. The elderly and homebound in Wise County, Texas, use a State-funded Para-Transit system. But according to County Commissioner James Hubbard, “expansion and maintenance needs far exceed current funding levels.”

This is not an unusual problem for growing communities. A GAO survey of local growth challenges found that 40 percent of responding local governments supported more Federal assistance with “smart growth” programs (U.S. GAO, 2000). The U.S. Department of Transportation’s Transportation and Community and System Preservation Pilot program is so popular that the demand for funding exceeded the program’s appropriations in fiscal year 2000. DOT funded 84 projects from 292 applications received. The program funds projects that integrate transportation initiatives with the goals of community development, environmental protection, access to jobs and markets, and efficient land development patterns. GAO’s survey showed that “sprawl” communities were more likely than “non-sprawl” communities to complain about inadequate Federal funding for public transportation.

Planning Efforts To Control Growth

Rather than simply reacting to growth by addressing the problems it creates, communities are increasingly using planning to help prevent or reduce growth’s consequences. GAO found that 34 percent of the counties expected to increase their involvement in planning and

growth management activities over the next 5 years (GAO, 2000). A common first step is to establish or update the county’s comprehensive plan. Such plans may envision ways to prevent or limit ill effects from growth by employing land-use and zoning techniques that result in more concentrated development, such as encouraging mixed-use development within a designated centrally located area, or encouraging cluster or large-lot development on the fringe, or increased use of conservation easements to preserve open space. Infrastructure and public services, such as public transportation, may be planned and implemented to discourage “sprawl.” Plans may also provide for ways to address growth-related problems, such as through encouraging the construction of local industrial or commercial parks with incentives to attract businesses that can augment the tax base and reduce commuter-related transportation problems, or by identifying areas and incentives for developing affordable housing.

In some cases, States require or encourage their localities to pursue comprehensive planning and growth management. For example, Florida’s growth management legislation in the early 1980’s required localities to prepare comprehensive plans that assured that adequate infrastructure, and a funding plan to finance it, was present. Gary Kuhl, former Administrator of Citrus County, Florida (now the Water Resource Team Administrator for Hillsborough County), said “Citrus County experienced a lot of sprawl issues during the rapid growth of the 1980’s, but with help from the comprehensive plan, growth was well-managed in the 1990’s. Citrus uses a variety of zoning and land-use provisions that have the effect of limiting sprawl by targeting development in a central portion of the county that is well-drained and served by the county water and sewer system and by discouraging development in more sensitive wetland and coastal areas. Citrus also has been helped by Federal and State agencies, the water management district, and by private trusts, which have acquired and protected some environmentally valuable land in the county” (Reeder et al., 2000).

Although all States require at least some local planning, many communities are not required to conform to their plans, and even when conformance is required, it is often not enforced. A common problem is that county plans capable of restricting growth are disregarded by municipalities, which actually control most of the development. Due to this fragmentation of government responsibility, efforts to control growth are often ineffective or, at best, piecemeal.

Michele Boomhower, Director of the Lamoille County Planning Commission, explained that “The State of Vermont did not require growth management. A significant portion of zoning controls are at the municipal level, and every town is upgrading growth management in some way.” But according to State Senator Susan Bartlett, “Sprawl is overrunning the county as loose local zoning laws allow strip-style development to dominate the local landscape. Uneven development is the rule, as all of the desirable development is going to towns with good local planning, while unwanted development goes to poorly regulated towns” (Reeder et al., 2000).

Despite its fragmentation problems, Lamoille has accomplished a great deal in farm and forestland protection. According to Boomhower, “Farm and forestland are most threatened by sprawl, so protection of these lands is of great importance.” Using zoning to protect some working lands, limited use of large-lot-size requirements, conservation easements, and purchase of development rights (PDR’s), Lamoille County now has the largest percentage of publicly and privately protected land in the State.

In other places, land conservation efforts are just beginning. According to John Woodling of the Monroe County Planning Commission, “Pennsylvania’s Agricultural Preservation Program encourages the purchase of farmland conservation easements. And in Monroe County, a bond issue was passed recently which will provide money for the acquisition of open space and recreation areas. In addition, the county’s new comprehensive plan encourages the transfer of development rights (TDR). Recently, the Commonwealth allowed the transfer of development rights from one municipality to another, which should enhance the use of TDR’s” (Reeder et al., 2000). Mason County, Washington, also authorizes the use of these conservation devices, and the State provides some money for purchase of development rights (PDR’s), but as yet it is unclear whether the voters will support local PDR bonds.

Efforts to control growth sometimes run into significant constitutional and political obstacles. For example, many rural areas have been traditionally opposed to zoning, and such traditions can be hard to overcome. The big problem in Wise County, Texas, according to city administrator Brett Shanon, is that the county constitution prohibits zoning in unincorporated areas, resulting in uncontrolled growth outside town limits. Wise County commissioner James Hubbard adds that “Some progress was made in the State Assembly in

enhancing county legal authority during the last session, and the Assembly may add additional county authority this year.” Local political barriers can be just as formidable as legal or constitutional ones. A good example comes from Georgia. According to Brenda Johnson at the Chamber of Commerce in Gilmer County, Georgia, “The last county commissioner who tried to establish zoning in the rural portion of the county was recalled from office” (Reeder et al., 2000).

Growth control efforts can also run into problems in the courts. Mason County established a new comprehensive county plan in 1996 in conformance with the new State growth management requirements for rapidly growing rural areas. According to Bob Fink of the County Planning Office, “This included many ‘good planning’ requirements, including protecting environmentally critical areas, preserving the rural character of the land, and encouraging urban and cluster development. This would have made for a great change from before, when growth was uncontrolled. But the plan has been challenged in court, nearly stopping all non-residential development in the rural portion of the county, including some desirable forms of development such as agricultural buildings and fire stations, until the legal issue is decided” (Reeder et al., 2000). Similar legal challenges have resulted in a significant weakening of Florida’s growth management law in recent years. In many newly developing areas, local capacity to develop and implement such growth-directing plans in the face of sophisticated challenges to their validity is limited. Either assistance from State and Federal governments to develop the capacity to effectively plan for growth is not authorized or funding has been inadequate.

Some municipalities attempt to control development on their fringe by annexing land adjacent to city limits. Such annexation can be used as a way to control or limit growth. However, annexation can also be used to encourage even more growth on a city’s edge. Annexation is limited by State law, which varies from State to State. This often requires the approval of the jurisdiction that would lose the land. Nevertheless, the affected rural residents outside city limits often feel powerless to oppose these annexation efforts.

Capacity for Response in Relation to Urbanization Pressure

A local government’s capacity to respond to growth pressures generally increases with the degree of urbanization. Urbanization usually results in higher income,

wealth, and tax base, which translates into more public and private financial resources that can be devoted to hiring more planners, offering incentives for mixed-use development, paying for public transportation services, or purchasing open space. Strong rural traditions of property rights cause people to oppose planning and zoning in some regions. Economies of scale in the provision of many types of government services, including planning functions, means that planning is more economical and efficient in larger, more urbanized communities that require more such work. Consequently, most rural areas begin with relatively little capacity to respond to urbanization pressures, and it may take years of development before the community is able to develop capacity to control growth.

Communities Affected by Growth Are Already Planning, but Capacity is Limited

Better planning and zoning are central to the ability to respond to growth. GAO found that 75 percent of the communities that were concerned with “sprawl” were highly involved in planning for and managing growth, which indicates a relatively high level of planning activity, compared with 72 percent for cities and 59 percent for metropolitan counties in general (U.S. GAO, 2000, p. 99). Moreover, about a third of these counties expected to increase their planning involvement over the next 5 years.

GAO also found that the majority of “sprawl-concerned” counties were already using several key growth-management tools, including land-use planning, zoning, mixed-use zoning, working with adjacent communities, and targeting State infrastructure funding to areas where development is desirable (U.S. GAO, 2000, figure 19, p. 101). In addition, 78 percent of these sprawl-affected communities use regional planning approaches—some focusing on specific functions, such as affordable housing in Seattle and traffic congestion and pollution in Atlanta.

Many cities and counties, however, are falling short of what is needed to control and manage growth effectively. A recent Alabama survey of mayors in 458 municipalities and 358 county commissioners in 67 counties found a general consensus in support of growth management or smart growth approaches (Seroka and Veal, 2000). Despite their overall good intentions, only a minority of the responding officials (18 percent of the mayors and 19 percent of the commissioners) believed they currently had the necessary staff and resources to plan and manage growth effectively. Another 24 percent of the mayors and 17 percent

of the commissioners thought they could do the job effectively with modest increases in funding and staff resources. High-growth communities were only somewhat more likely to have the capacity to manage growth than were other communities.

Seroka and Veal found that more than 80 percent of the Alabama officials surveyed said that their local government needed more powers to manage growth. They also found that counties were more likely than cities to face significant opposition to growth management from rural residents, other constitutional officers, the elderly, and long-term residents of the county. Most local officials looked to the State to provide leadership in this area. Although these findings pertain only to Alabama, they point to some of the potential obstacles that rural growth management efforts face in other States as well.

Rural areas often have very limited planning capacity. Most of the smaller rural towns cannot afford a full-time planner. To meet their planning needs, these communities may be served by a circuit riding planner; another alternative is that several towns and a county may combine their efforts to set up one planning office to serve their joint needs (Lapping, Daniels, and Keller, 1989, p. 56). Shared service arrangements can suffer from conflicts between communities. Even at the county level, rural planners often must spend part of their time doing other duties. In addition, rural planners may lack important technical tools (such as GIS, computer, and legal services) needed to do their job.

One result of this limited capacity for planning is that rural counties tend to rely more on nongovernmental institutions—such as regional development organizations—for planning. Planning for key functions driving development, such as transportation investment, is carried out by separate special-purpose planning offices, such as the highway department, that may ignore broader concerns affecting growth management.

Planning for major roads and institutions in the more rural, nonmetropolitan counties is often done at the State rather than the local level, bypassing local government. Rural places often are forced to compete with neighboring communities to obtain Federal and State transportation funding, leading to conflicts between jurisdictions. In urban areas, transportation planning is done by multicounty Metropolitan Planning Organizations (MPO’s) which are capable of superior planning and coordination through regional collaboration, but may be too narrowly focused on transportation issues. However, the more fragmented rural planning process

adds to the difficulty of doing good comprehensive planning needed to control growth.

Federal Assistance for Planning

The Federal Government has supported programs to improve the planning capabilities of State and local governments in the past, but support was cut for both ideological and practical reasons. The most well known of these efforts was the HUD 701 planning grant program, established as part of the Housing and Community Development Act of 1954 (40 USC 461). As late as 1975, the HUD 701 program spent \$100 million per year, paying as much as two-thirds of the costs of an “ongoing comprehensive planning process” required of all grant recipients. However, the budget was cut to \$75 million in 1976 and was proposed for elimination in 1977 (NRDC, 1977, p. 334). Comprehensive planning, as defined in the 1954 law, included:

- Preparation of guides for governmental policies and actions on the pattern and intensity of land use, the provision of public facilities, including transportation, and development of human and natural resources;
- Identification and evaluation of area housing, employment, education, and health needs, and plans to meet those needs;
- Historical and architectural structure surveys;
- Long-range physical and fiscal plans;
- Programming of capital improvements and infrastructure needs;
- Coordination of all related plans and activities of the State and local governments concerned; and
- Preparation of regulatory and administrative measures needed to support the above plans.

Stringent review of Section 701 followed amendments in the Housing and Community Development Act of 1974. HUD also required that each comprehensive plan have housing and land-use elements, and that National Environmental Policy Act (NEPA) environmental assessments, public participation, and nondiscrimination guidelines be followed in all plans prepared with this funding.

One early estimate of the impact of the Section 701 program suggested that the business of planning consultation had multiplied tenfold (ASPO, 1968). Criticisms were that administrative requirements unneces-

sarily raised planning costs, and that plans were stereotypical, filled with boilerplate text, and overly elegant for the situation (National Academy of Public Administration, 1998). Questions were raised as to how much the plans were in fact used and what effect they were having on land-use regulation. Reform, rather than elimination, was suggested as a cure.

The HUD Section 701 program and OMB Circular A-95 provided impetus for regional or areawide planning and coordination, among other things. By 1976, there were 669 regional councils. In the 1980's, the Federal Government largely abandoned these efforts, and similar regional planning efforts with regard to water resources and transportation, with the exception of metropolitan planning organizations linking transportation with air quality (National Academy of Public Administration, 1998).

Within USDA, the Rural Development Act of 1972 authorized Section A-111 Rural Development Planning Grants (U.S. Senate, 1973). Grants under the program could not exceed \$10 million annually. Outlays for A-111 in FY1980 were \$6 million. However, the incoming Reagan Administration budget for FY1981 severely reduced, then eliminated Section A-111 assistance (Stansberry, 2000). In 1981, the National Agricultural Lands Study, begun in the Carter Administration, recommended that USDA “...assess the feasibility of providing small matching grants for ‘capacity building’ to state departments of agriculture (or other appropriate state agencies) that seek to manage agricultural land issues” (NALS, 1981). No legislation was ever proposed or enacted.

Authority for Section A-111 continued, without funding, until the 1990 farm bill, which replaced it with authority for some technical assistance and planning grants. These were also not funded, and regulations were not even prepared to implement the grants. The 1996 FAIR Act replaced this program with new authority for the Rural Business Opportunity Grant program (RBOG), first funded in 1999 with \$3.5 million in FY2000 appropriations. RBOG provides money to non-profits, public bodies, Indian tribes, and cooperatives for planning and technical assistance to assist economic development in rural areas, so it could potentially create more growth than it combats (see Web site at <http://www.rurdev.usda.gov/rbs/buspr/rbog.htm> for details). USDA's FY2001 appropriations increased RBOG funding to \$8 million.

Other Federal agencies and programs provide some support for planning in rural areas, particularly regional planning through the Department of Commerce Economic Development Administration's support for local planning organizations. The Appalachian Regional Commission, Tennessee Valley Authority, USDA's Rural Conservation and Development (RC&D) program, and HUD's Rural Housing and Economic Development and Community Builder programs all provide limited, fragmentary planning or planning assistance. However, this piecemeal approach tends to focus on more narrow, limited objectives particular to the program. They do not provide much increase in capacity for general-purpose land-use planning efforts needed to understand and control growth.

One can imagine how difficult it is for local governments to become aware of this fragmented basket of programs, muster the effort needed to make application to them, and overcome the variety of rules for different programs to effectively use the funds to develop plans for growth control. The ambiguity between rural development objectives, which seek to foster growth and development, and planning for growth control in rural areas, may also pose problems for both the local communities and the agencies seeking to provide assistance. In many situations, it is a fine line between needs for economic development and needs for growth control.

Slow Growth, No Growth, and Smart Growth

Land-use planning and zoning authority has been delegated to local governments by all 50 States (Meck, 1999). Historically, local governments have relied upon zoning regulations and subdivision requirements based on the landmark Euclid case to manage the character and density of new development (Village of Euclid v. Ambler Realty Co., 272 U.S. 365, 47 S. CT. 114, 71 L. ED. 303 (1926) in Haar, 1976, p. 194.). By the 1970's, local and State governments in rapidly urbanizing areas were learning that these techniques were inadequate to influence the character of growth (Platt, 1996). Across the country, concerns about the impact of growth are fueling a growing recognition that local land-use planning efforts are in desperate need of updating. In some localities, land-use plans have not been updated since they were developed based on statutes enacted in the 1920's; in others, such plans are nonexistent (Salkin, 1999a). As HUD recognized in its scrutiny of Section 701 planning assistance, simply having a land-use plan

and a zoning map to guide parcel-by-parcel decisions is insufficient to control the cumulative impacts of growth, and applying inappropriate development standards across the landscape may actually exacerbate "sprawl" (Chen, 2000). The American Planning Association recognizes six States as having substantially modernized planning legislation to address growth management issues (Maryland, New Jersey, Oregon, Rhode Island, Tennessee, Washington), as well as 10 States that have not updated their land-use statutes or proposed significant legislation or studies to address reforms (Alaska, Louisiana, Michigan, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, West Virginia, Wyoming).

Obtaining political support for updating land-use policies to address growth issues can be difficult, particularly in light of U.S. constitutional protections for property rights and the freedom to move. When the California town of Petaluma responded to a surge of new construction in the early 1970's by imposing a moratorium on extensions of public sewer and water services, and thus constraining the number of building permits issued annually, the plan was challenged in court by a building trade association (Platt, 1996). The city of Livermore, California, was similarly challenged when it imposed a moratorium on residential development until public services (water and sewer provision, and schools) were updated (Platt, 1996). Although eventually upheld, these policies are not permanent solutions, but rather act to delay rapid growth and the problems it causes.

In efforts to tame growth, local governments subsequently turned to policies such as "adequate public facilities" ordinances, impact fees, zoning changes to allow mixed-use developments, and working with neighboring communities to develop compatible growth management plans. However, obtaining political support for even these milder policies can be challenging. In Virginia, bills that would allow local governments to enact adequate public facilities ordinances died in House and Senate committees as a result of claims by building industry lobbyists, and real estate and business representatives that the bills would diminish property rights (Smart Growth Network, 2000). Some of these policies, in fact, may have done little to control growth and may even have exacerbated growth's consequences. For example, if public water and sewer services were at capacity, the bills proposed that developers could meet housing demands by building even more low-density development with septic systems in surrounding rural areas.

Georgia's Growth Strategies Reassessment Task Force recently concluded that comprehensive planning by nearly all of its 700 local governments has done little to direct development, and cited a need for a broader "vision" to guide local planning efforts (Hirschhorn, 2000). While local governments are increasingly challenged to consider the impacts of their local land-use policies beyond their own borders, they individually lack the authority to enact changes outside their jurisdictions. This is not a new phenomenon: Regional planning has attempted to provide coordination within areas of a State and across several States since at least the 1950's, and 29 States had passed regional planning-enabling acts by 1957 (Bossleman and Callies, 1971; Linowes and Allensworth, 1975; Healy, 1976; Pooley, 1961). To deal with these problems today, several States have adopted a substate regional or metropolitan approach to address problems where the geographic extent of growth-induced impacts spreads over multiple jurisdictions. For example, Georgia's Regional Transportation Authority covers the 13 counties in the Atlanta metropolitan area. Regional planning commissions also exist in Florida, Vermont, and Maine. Virginia's Regional Competitiveness Act, passed in 1996, provides for incentive payments to encourage regional planning and cooperation. Regional commissions work to identify resources of regional importance, develop regional plans, review local plans for consistency, and provide technical assistance to local governments. However, these commissions typically act as planning coordinators and do not have statutory authority (DeGrove and Metzger 1993). Implementation remains the responsibility of local governments (U.S. GAO, 2000; National Academy of Public Administration, 1998).

State Responses to Growth

The last two decades have witnessed a growing but gradual shift from reliance on local and regional planning to statewide strategies to counter the negative impacts of growth. In the 1980's, States began using a coordinated planning approach to manage growth and its associated costs. Typically, States do not enact sweeping changes all at once. In a recent comprehensive study of planning statutes and legislative activity, the American Planning Association found that States have tended first to enact legislation that authorizes changes in land-use planning, then progress to legislation that requires it (Meck, 1999).

The term "smart growth" is a catch-all phrase used to describe a number of policies that influence the pattern and density of new development (Chen, 2000). In gen-

eral, smart growth strategies represent a movement away from State-imposed requirements for local compliance with State planning goals. Because smart growth strategies tend to use financial incentives to encourage voluntary adoption, they are generally supported by a broad spectrum of interest groups. These strategies also garner support because they direct, rather than inhibit, growth and development. There is no "one size fits all": the specific smart growth strategies that have been adopted vary by location but often share common elements. Smart growth principles favor investing resources in center cities and older suburbs, supporting mass transit and pedestrian-friendly development, and encouraging mixed-use development while conserving open space, rural amenities, and environmentally sensitive resources (Hirschhorn, 2000). These strategies also typically remove financial incentives provided by State funding to develop outside designated growth areas. In essence, smart growth encourages development in designated areas, without prohibiting development outside them, while not threatening individual property rights.

The following land-use planning techniques implemented by various States highlight the objectives of smart growth:

- **Urban growth boundaries**—Oregon pioneered this strategy in the 1970's to discourage urban sprawl. Oregon's statewide plan mandated the designation of urban growth boundaries, within which urban development would take place. Although this policy has not entirely curtailed development outside the boundaries, Oregon is recognized as being the most successful State in separating rural and urban uses (DeGrove and Metzger, 1993). In 1998, Tennessee adopted legislation that requires counties to establish urban growth boundaries for municipalities and planned-growth areas.
- **Designation of priority funding areas**—With this strategy, local governments take the lead in designating growth areas to concentrate development and direct State funding. In Washington, cities and counties exceeding a certain size or experiencing rapid population increases are required to designate urban growth areas (Johnson, 1999b). This can apply to private financing, such as the Location Efficient Mortgage (LEM) pioneered by banks in Seattle, Chicago, and California and underwritten by Fannie Mae (Chen, 2000). LEM's let homebuyers increase the mortgages for which they can qualify by the amount

of savings expected in compact versus low-density neighborhoods.

- **Farmland/environmental resource preservation**—The goal of these strategies is to proactively preserve farmland and other environmental resources of local importance, rather than trust their preservation to development controls. Maryland is one of several States with a well-established State-level farmland preservation program. In addition to its existing farmland preservation program (administered by the Maryland Agricultural Land Preservation Foundation), the smart growth initiatives implemented in 1997 included the Rural Legacy Program. In this program, the State partners with local governments, land trusts, and citizens, aiming to protect an additional 200,000 acres of farms and forestland by 2011 (Office of the Governor, 1998). Washington’s Growth Management Act requires localities to adopt land-use policies that protect commercially significant agricultural lands (WSCTED, 1997).
- **Brownfields redevelopment**—Brownfields (urban redevelopment sites in older developed areas) programs limit the liability of redevelopers of old industrial sites. In 1998, New Jersey enacted the Brownfield and Contaminated Site Remediation Act, which, in addition to limiting liability for redevelopers, provides financial incentives for remediation and redevelopment of brownfields. It also includes brownfields re-use as part of its urban redevelopment programs (Finucan, 1999a). Another example at the local level is the “Homerama” demonstration project, which builds affordable new homes on redevelopment sites in distressed neighborhoods of Detroit, begun by a dozen local developers in 1987 (Chen, 2000).
- **Neighborhood business development**—Through these programs, small businesses can obtain financial assistance in designated revitalization areas. Since 1993, the Illinois Main Street Program has provided State support in the form of technical assistance to communities that are defining and implementing plans to improve development and redevelopment. The goals are to foster public and private support for the initiatives, enhance downtown areas through historic preservation, develop strategies to encourage downtown activity, and maintain the vitality of downtown areas. More than 50 communities are participating in the program (Hirschhorn, 2000). Consistent with State planning goals, a task force in South Providence, Rhode Island, adopted a program that provides State-funded assistance to new small businesses locating in

one of its 10 State-designated enterprise zones (Davis, 1999, in Finucan, 1999b).

- **Multi-jurisdictional planning**—This strategy involves State incentives for coordination of local planning efforts. Wisconsin gives State funding priority to its local governments that address the needs of adjacent communities in their own development plans, rather than follow a “beggar-thy-neighbor” strategy (Smart Growth Network, 2000).
- **Coordinating transportation systems and development**—This strategy seeks to increase transportation efficiency by linking development and transportation investments by locating transportation infrastructure within designated urban growth areas. In 1998, Tennessee passed a law directing that funding under the Federal Transportation Equity Act for the 21st Century (TEA-21) be reserved exclusively for localities that have growth plans with identified urban growth boundaries for cities, planned growth areas, and rural areas (Finucan, 1999c).
- **Public/private partnerships**—This strategy involves representatives from multiple levels of government, non-governmental organizations, special interest groups, and other stakeholders in the planning process. Utah’s Envision Utah partnership is working to create a growth strategy based on informing citizens about the causes of and implications of unplanned growth, rather than government-imposed requirements. The goal is to achieve reform and to shape future development based on citizens’ demands for such changes. The partnership includes State and local government officials, business people, developers, environmentalists, and citizens (Hirschhorn, 2000).

Table 7 identifies some of the State actions implementing smart growth strategies. Many other States have legislation that allows, but does not require, adoption of smart growth strategies. Smart growth strategies take a synoptic view of growth and attempt to marshal the resources of the State to address growth. A larger view of the monetary resources deployed to control growth and estimates of the magnitude of the problem are made in the next section.

Monetary Incentives for Conserving Farm and Forest Land

Despite the benefits farmland provides to residents beyond the urban fringe, and to society in general, and despite adaptations farm operators can make to accommodate an urbanizing environment, few landowners can

Table 7—State implementation of smart growth strategies

State	Commission/task force to study smart growth in 1999	Enacted State-level smart growth legislation
Arizona	Growing Smarter Commission (1998-99)	Growing Smarter Act (1998) in part requires that municipalities' and counties' plans identify growth areas. The Growing Smarter Plus bill (Senate Bill 1001, 2000) authorizes municipalities to designate boundaries beyond which public water, sewer and street service will not be provided.
Colorado	Interim Legislative Committee on Development and Growth (1998)	Governor's Smart Growth Award Program awards matching grants for measures that balance growth with community needs.
Delaware		Shaping Delaware's Future Act (1995).
Florida		House Bill 17 (1999) offers financial incentives to local governments to adopt plans for and to develop in urban infill and redevelopment areas, by granting authority to issue bonds or to engage in tax increment financing and by providing grants for local public projects in these areas.
Iowa	Commission on Urban Planning, Growth Management of Cities, and Protection of Farmland (1998-99)	
Kentucky	Legislative Subcommittee on Planning and Land Use (1999)	
Maine		Passed legislation (2000) to direct State capital investment projects to designated growth areas and areas served by public sewer systems. State grants for capital investments are awarded first to municipalities that have comprehensive plans consistent with State smart growth objectives. Requires adoption of rules that encourage siting of State office buildings and schools in growth areas.
Maryland	Smart Growth and Neighborhood Conservation Sub-Cabinet to coordinate State agency actions (1998)	The Neighborhood Conservation and Smart Growth initiatives (1997) rely on incentives to encourage local governments to voluntarily adopt smart growth strategies. They direct State funding for capital investments to designated "priority funding areas," preserve farmland and natural resources through the Rural Legacy Program, encourage redevelopment of old industrial sites, and provide financial incentives for businesses to locate in priority funding areas. Also provides homebuyers with financial assistance with purchasing a home in an older neighborhood near their jobs.
Massachusetts		Sustainable Development Act (proposed in 1999). Executive Order 385 "Planning for Growth" (1996) in part requires coordination of State agencies, and provides incentives for local governments to engage in planning.
New Hampshire	Land Use Management and Farmland Preservation Study (1998); Cost of Sprawl Study (1999)	House Bill 1259 (2000) requires State agencies to make decisions consistent with smart growth principles when funding and siting infrastructure and public facilities.
New Jersey	State Planning Commission (1985)	The Commission adopted (1999) a revised State development and redevelopment plan that includes financial incentives for communities to engage in multijurisdictional planning through a Smart Growth grant program.
New Mexico	Legislative subcommittee on enabling statutes (1999-2000)	

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Table 7—State implementation of smart growth strategies (continued)

State	Commission/task force to study smart growth in 1999	Enacted State-level smart growth legislation
New York	Smart Growth Economic Competitiveness Task Force (1999); Quality Communities Task Force (2000)	The Smart Growth Economic Competitiveness Act and several other bills were introduced in 1999. The proposed Smart Growth for the New Century Act would favor local governments with smart growth plans when allocating State funding; State financial assistance for public projects is limited to locally designated “smart growth” or redevelopment areas. The proposed New York State Smart Growth Compact Act would authorize creation of smart growth compact areas and governing councils, and gives funding priority for drinking water and wastewater infrastructure projects to localities with certified smart growth plans. AB 9080 and SB 5893 (1999, in committee) would create the Smart Growth Planning Council, which would provide incentive grants to local governments that meet smart growth goals.
North Carolina	Smart Growth Study Commission (1999)	
Oregon		The land-use plan enacted in 1973 (and subsequent amendments) contains mandatory provisions for cities to designate urban growth boundaries, for local plans to be consistent with State planning goals, local governments to coordinate planning efforts, and that counties use protective zoning to help preserve farms and forestland. In the recent “Smart Development” initiative, local governments are encouraged to locate development near existing urban services. S.B. 1128 (1999) promotes “sustainable development” and helps economically distressed communities by providing State assistance.
Pennsylvania	21st Century Environment Commission (1997)	
Rhode Island		The Comprehensive Planning and Land Use Regulation Act (1988) requires cities and towns to adopt comprehensive plans that comply with State plans, and that these local plans address natural resources, farmland, open space, and economic development. The Act contains incentives for “smart development.”
Tennessee		Pub. Chap. 1101 (1998) requires counties to adopt and adhere to growth plans that include urban growth boundaries for each municipality, planned growth areas, and rural areas. Funding provided by the State for economic development and infrastructure projects is to be limited to counties with approved growth plans after July 1, 2001.
Utah	Quality Growth Commission (1999) formed to identify growth areas and administer conservation fund to purchase easements on agricultural and open space land.	Quality Growth Act (1999) established the Quality Growth Commission.
Virginia	Joint Legislative Smart Growth Subcommittee (1998) to identify smart growth areas where State infrastructure funds are to be directed.	
Washington		The Growth Management Act (1990) in part requires cities and counties (a) exceeding a certain population or population increase to designate urban growth areas and to adopt consistent comprehensive plans, (b) to protect environmentally sensitive resources, and (c) to identify and design policies to protect commercially important farmland.
Wisconsin		The Smart Growth Law (1999) gives funding priority to local governments that address the needs of adjacent communities and identify planned growth areas for development or redevelopment. The Smart Growth Dividend Aid Program was established to award funds to local governments that have increased the amount of compact development and moderately priced housing.

Sources: Finucan (1999a-c); Johnson (1999a,b); Hirschhorn (2000); NCSL (2000); Salkin (1999a,b) and references therein.

continue to farm in the face of high competing returns from development. Real resources are needed to provide incentives for landowners to conserve land in agriculture. The most widely enacted provision to provide incentives for farmland preservation, use-value or preferential assessment, has been scrutinized very little, while the most effective, purchase of development rights, is under-funded relative to the amount of land that could be enrolled.

Cost of Preferential Assessment

Preferential or differential property tax assessment is the most popular farmland preservation technique and is authorized in all States (Aiken, 1989; AFT, 1997). Preferential assessment removes a disincentive for conserving farmland in the face of development pressure by assessing the property at its value in agricultural use, rather than the higher developed land values found near cities, often in exchange for an agreement not to develop for some period. Penalties (called rollback provisions) can be imposed if the land is developed within the agreed term. While not widely recognized by the public, tax reductions like this are a form of expenditure in disguise, called “tax expenditures.” We estimated the implicit subsidy that farm operations receive through tax expenditures in preferential assessment programs by applying each State’s tax rate per \$100 of full market value against the difference between current land values and land values in rural areas without development pressure (appendix table 1). Nationally, the estimated tax subsidy is \$1.1 billion annually. This annual flow of tax expenditures has a present value (from discounting the stream of annual tax expenditures at 4 percent) totaling nearly \$27 billion.

Evaluations of preferential assessment generally recognize that, while it is a popular subsidy for farmland owners, it has not provided a strong incentive for conserving farmland (Tremblay et al., 1987; MacKenzie, 1989; Lincoln Institute, 1993). With relatively minor agricultural activity, developers as well as other landowners can reap reductions in property taxes that reduce the cost of holding land prior to development. The rollback penalties are generally too small, relative to the potential rewards from development, to deter landowners from selling out for development if the opportunity arises. At best, preferential assessment may slow the transition from rural to developed uses, but it is not a permanent solution. Other tools, such as purchase or transfer of development rights, are more effective in permanently preventing development.

Buying Development Rights

All States now have laws enabling conservation easements on agricultural land through voluntary donations from landowners, and about 19 States have programs for purchase of development rights (PDR), purchase of agricultural conservation easements (PACE), or transfer of development rights (TDR) (Buist et al., 1995; Wiebe et al., 1996). With PDR’s and related programs, public funds purchase permanent or specified-term restrictions on the deeds of individual parcels, effectively prohibiting future development or use of the parcel for nonfarm uses. These programs are intended to retain parcels with high potential for continued, active agricultural use, and usually focus on cropland. The distinction between “cropland” and “farmland” is important: cropland is a higher quality subset of all land operated in farms, which can contain pasture, range, woodland, and other kinds of land.

The restricted deed to the parcel, and all remaining property rights associated with ownership, are retained by the landowner, who can continue farming. Deed restrictions are binding not just on the current owner, but on all future owners. The implicit economic value of the easement is the difference between the unrestricted (market) value of the parcel and its restricted (agricultural) value, as determined by modern appraisal methods or by easement valuation “point” systems.

Nineteen States have State-level PDR programs, and at least 34 counties operate separate programs in 11 States (AFT, 1997; 2000). The growing popularity of these programs nationwide is due to:

- The nearly unique ability of this public policy tool to permanently preserve farmland;
- The voluntary nature of the programs, which avoids the takings issues that cloud the outcome of regulatory techniques such as zoning; and
- The ability of these programs to target funds toward parcels with the most important characteristics, an ability that is lacking in most other economic incentive-based farmland preservation techniques such as preferential assessment.

PDR’s and related programs are a relatively new farmland preservation technique, although land trusts and other private conservation organizations have a long history of obtaining conservation easements on valuable or unique wetlands, wildlife or biotic habitat, riparian areas, and scenic landscapes (Wiebe et al.,

1996). Until fairly recently, these easements were most often obtained from landowners as a donation to a charitable organization compensated by a Federal income tax deduction under Section 170 (h) of the Internal Revenue Code (Ward et al., 1989). Conservation easements for agricultural land were first obtained in Suffolk County, New York, in the mid-1970's (AFT, 1998a, 1998b). Since that time, 21 States have based conservation easement-enabling legislation on the National Conference of Commissioners on Uniform State Laws Uniform Conservation Easement Act (1981). Another 23 States have enacted their own versions of enabling legislation.

AFT estimates that, nationwide, PDR programs have cumulatively protected 819,490 acres of farmland with an expenditure of \$1.2 billion, slightly more in total than the *annual* tax expenditure on use-value assessment. The average easement cost \$1,519 per acre. Public expenditures for PDR programs are reported from 20 States, with the most active programs existing in the Northeast (AFT, 2000). Maryland, Massachusetts, New Jersey, and Pennsylvania account for 68 percent of PDR expenditures to date (appendix table 2). Programs are usually funded through bond issues approved in public referenda. The Conservation Fund compiled results of 35 referenda on funding for easement programs in States, counties, and townships around the country in November 2000 (Conservation Foundation, 2000). Seven proposals for \$403 million were rejected by voters. Another 28 for \$1 billion were approved.

An important advantage of PDR's and related programs as farmland protection tools is their ability to target funds to the highest quality land parcels or to parcels with the highest degree of development pressure. Programs choose the parcels on which to spend their limited funds from those offered by eligible landowners on the basis of legislatively or administratively determined criteria, or on the basis of scoring systems that rank parcel and landowner characteristics. Some programs combine the two procedures, awarding ranking "points" only to parcels that meet a set of minimum criteria (e.g., outside water and sewer service boundaries, or in areas zoned for agricultural or rural uses). Most programs award progressively higher ranking points for parcels with higher quality soils, proximity to existing preserved parcels, or proximity to existing development, with the progression heavily weighted toward parcels consisting of "prime" cropland under imminent threat of development.

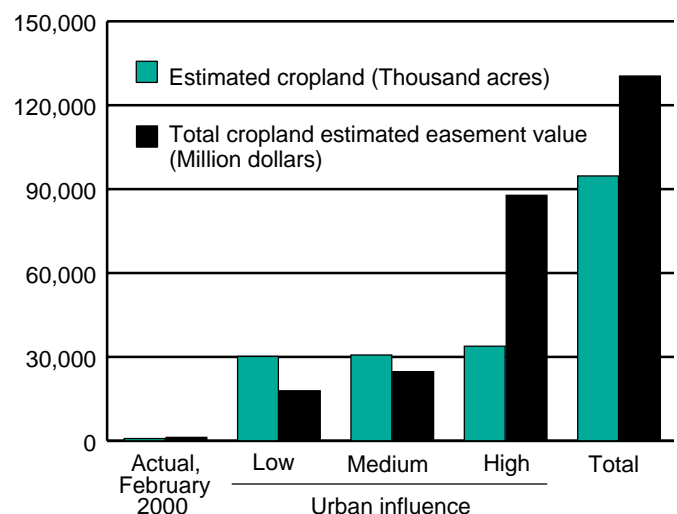
Both of these features increase the cost of PDR's and related programs. An increased likelihood of development, for example, from proximity to roads or existing development, increases the cost of the easement to the program by further increasing the difference between the parcel's market value and its agricultural value. Facing limited funds, programs must choose between preserving more farmland acres of poorer quality under less development pressure, and preserving fewer acres of higher quality under greater development pressure.

Potential Cost of Development Rights

State PDR's and related programs focus on protecting cropland as the highest quality farmland that holds the most potential for long-term viability in agricultural use. We estimated the cost for voluntary easements on all urban-influenced U.S. cropland (94.7 million acres) at \$130 billion (figure 25; appendix table 2; see box, "Methods for Estimating Cropland and Farmland Purchase of Development Rights Cost"). The easement cost of 36 percent of the acres subject to the highest level of urban influence is \$88 billion. Thus, expenditures nationwide for PDR's and related programs through February 2000 constitute just 1 percent of the estimated total easement cost to preserve all urban-influenced cropland. Cropland acres protected to date through PDR's constitute less than 1 percent of urban-influenced cropland acres nationwide.

Nationally, figure 25 indicates that it would cost \$88 billion to purchase easements on the 34 million crop-

Figure 25
Actual and estimated easement value for cropland, by urban influence



Source: ERS analysis of National Resources Inventory land use and NASS land values data.

land acres most influenced by urbanization, at an average cost of \$2,595 per acre. However, purchasing easements only on the 31 million acres of cropland subject to the medium level of urban influence preserves roughly the same number of acres for \$25 billion, \$806 per acre, or less than one-third the cost. Selecting cropland parcels only in the low urban influence category, for which urban conversion might not be expected for many years, would reduce current easement costs by an additional third, to \$592 per acre, or \$18 billion.

The chief obstacle to conserving more farm and forestland through PDR programs is the high cost of purchasing easements. However, States already incur a tax expenditure in use-value assessment programs for all farmland of \$1.1 billion annually, which equals a present value of \$27 billion when amortized at 4 percent (figure 26; appendix table 1). The tax subsidy on use-value assessment dwarfs the \$1.2 billion in cumulative public expenditures on PDR programs since the mid-1970's. Since use-value assessment is generally acknowledged to provide far less certainty that farmland will actually be preserved from development than PDR's and related programs, more effective farmland

conservation could perhaps be obtained by reallocating these expenditures.

We estimated that by applying the annual expenditure on use-value assessment to PDR's, State programs could cover 30 percent of the \$88 billion easement cost needed to conserve cropland in the high-urban-influence category, or 63 percent of the cost of easements in the middle- and low-urban-influence categories. Because use-value assessment is generally provided to all qualifying farmland, redirecting expenditures on it to conserving cropland alone could cover a substantial portion of the total cost of cropland easements, particularly in States with less urban pressure, or with a lower ratio of cropland to all farmland (appendix table 2). In other words, converting use-value assessment tax subsidies to PDR expenditures could fund permanent easements on much of the cropland really at risk of development.

These estimates do not include costs associated with purchasing easements, which can be substantial. Direct costs—such as those incurred from settlement fees, title work and insurance, and conducting appraisals—

Methods for Estimating Cropland and Farmland Purchase of Development Rights Cost

USDA's National Agricultural Statistics Service annually collects information on farmland values via the national June Agricultural Surveys (JAS). Farmland values from the JAS, pooled for 1994-96, consist of more than 75,000 observations geo-referenced to the approximate parcel location (latitude and longitude). Each parcel was classified as urban-influenced or not based on an index of proximity to urban areas derived from Census tract population data using GIS-based statistical smoothing techniques. In geographers' terminology, the index is derived from a "gravity" model of urban development, which provides measures of accessibility to population concentrations. The index accounts for both population size and location of the parcel relative to that population (distance within a 50-mile radius). The index increases as population increases and/or as distance from the parcel to population decreases, hence, the "gravity" analogy. Census tracts were assigned to a "totally rural" category based on 1990 commuting data and Census Bureau geographic definitions. "Totally rural" means that the tract does not contain any part of a town of 2,500 or more residents and the primary commuting pattern was to sites within the tract. JAS parcels were classified as urban-influenced if the population accessibility index exceeded the 95th percentile of the index's distribu-

tion for the set of totally rural tracts in the region (LRR) containing the parcel. Within each LRR, the urban-influenced JAS sample points were sorted by their associated population accessibility index number and the distribution split into three categories, each containing equal numbers of JAS sample points.

The statistical design properties of the JAS data can be used to estimate the number of acres and the average market value per acre in the totally rural category and in each of the three urban-influenced categories for each LRR. Because the average market value in the totally rural category is assumed to approximate the agricultural value in each of the three urban-influenced categories, the easement value per acre can be estimated as the difference between average market values in the totally rural category and in each of the urban-influenced categories. We assume that landowners would be willing to sell voluntary easements at this price. Multiplication by the respective crop or farmland acres in each category then determines the cost of purchasing all the crop or farmland development rights in each urban-influenced category. Results were summarized at the State and U.S. levels.

amount to several thousand dollars for each easement purchased. Appraisals, which may be needed to establish the market value of the property and hence the easement value, can cost \$1,500 to \$2,500 per property (MALPF, 2000; Daniels, 2000). In the Lancaster County, Pennsylvania, program in 1993, administrative costs averaged \$83 per acre (4 percent) on easements averaging over \$2,000 per acre (Wiebe, 1996, p. 13). Administering agencies also incur indirect costs in the form of salaries, administrative expenses, and legal fees. On the other hand, the cost of administering use-value assessment programs is also not included in the estimates of tax expenditures for use-value assessment. Assuming a cost of \$2,000 per acre, and a \$2,500 administrative cost, a 100-acre parcel would have additional costs of 1.27 percent, while a 10-acre parcel would have costs of 14.3 percent. A generous estimate of additional administrative costs for easements would be 5 percent of the easement cost, averaged across all transactions of different parcel sizes.

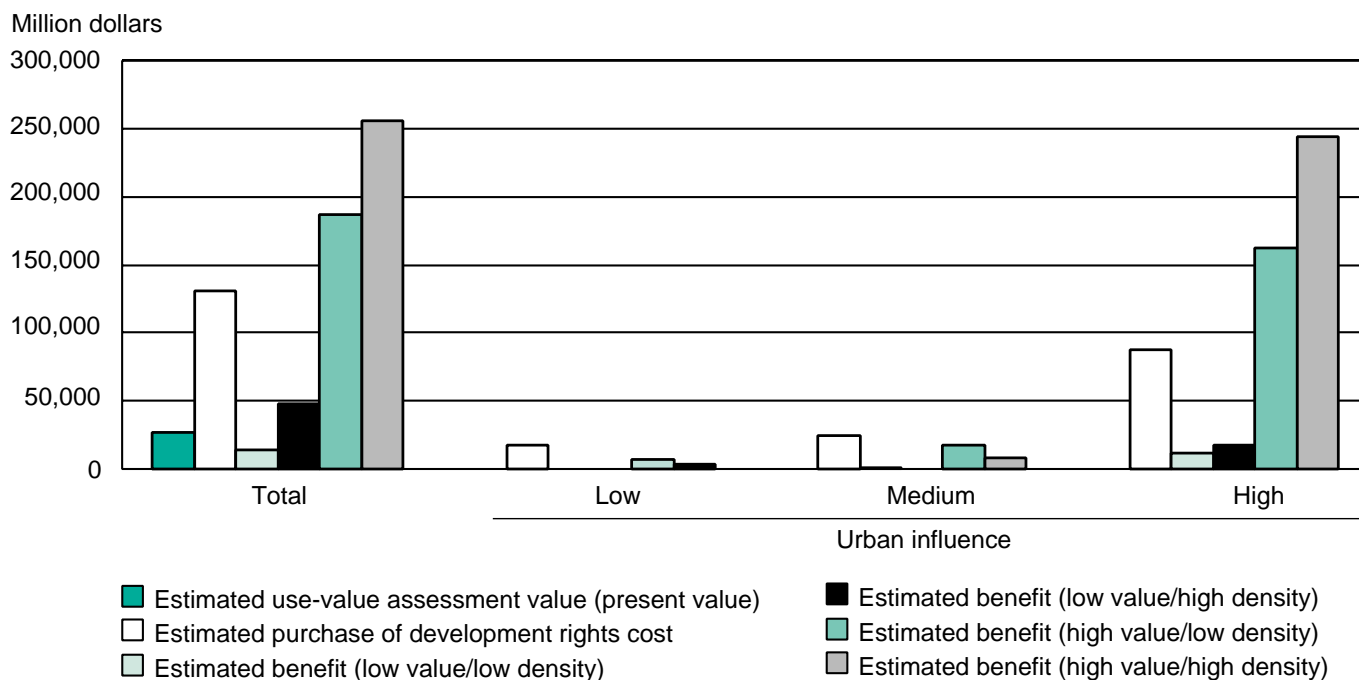
Redirecting use-value assessment tax expenditures to PDR's is not without risks. Essentially, this replaces a small monetary incentive applied to many farmland

acres (the tax reduction) with a larger monetary incentive on fewer cropland acres (the easement purchase). Owners who no longer receive the tax reduction will be more inclined to sell land for development due to higher taxes. However, tax revenues from the land on which development rights are purchased will likely rise above agricultural use values, but will probably not rise to full market value levels. This is because a market for land with severed development rights has developed in States with extensive PDR programs (Nickerson and Lynch, 1999; Blakely, 1991). There are potential buyers of these parcels who are not primarily interested in agricultural production. Politically, many property owners will object to losing a property tax reduction, and fewer of them will benefit from PDR purchase. There may also be difficulty in getting voter agreement to convert the annual and largely disguised tax expenditure into a bond or other financing instrument for capital purchases of development rights.

Targeting cropland with the highest urban influence for protection may be a shifting target. Unless consumer preferences for single-family homes and low-density development patterns are altered, or growth control

Figure 26

Costs of purchase of development rights and use-value assessment relative to benefits for preserving cropland, by urban influence



See text for explanation of value/density scenarios.

Source: ERS analysis of National Resources Inventory land use and NASS land values data.

policies pursued more vigorously, purchasing development rights on land currently under the most intense development pressure would likely shift developers' attention to other land. The \$27 billion that could be derived from current use-value assessment tax expenditures is more than the estimated \$18 billion cost of easements for cropland with middle and low urban influence farther out from the urbanized areas, and would put "greenbelts" totaling more than 30 million acres around existing urban areas and surrounding areas of high urban influence.

Comparing Benefits and Costs

The costs of purchasing development rights easements on cropland estimated above can be compared with the benefits of conserving cropland (table 8). Because PDR easements are essentially an up-front capital investment, the annual stream of benefits estimated above in table 5 must first be converted to a present value (using a 4 percent discount rate consistent with that used to analyze use-value assessment above). An estimate of the benefits of conserving cropland, distinct from all farmland, is made by assuming that the benefits are proportional to the amount of cropland in the land base. After these adjustments, the costs and benefits can be compared (table 8). The benefits from not incurring additional soil erosion during construction in table 6 are not included in these estimates.

The most important conclusion from this exercise is that the relationship between costs and benefits depends heavily on the initial value per acre per house-

hold (\$0.21 versus \$2.93) assumed from the literature, and on the development scenario assumed. If the lower value estimate and a relatively low-density development scenario are correct, the benefits from cropland conservation probably will not justify the costs of a comprehensive PDR program. Not surprisingly, 87 percent of the benefits occur in the high-urban-influence area because more households are located there. Even in that area, however, estimated benefits are only about 13 percent of easement costs.

However, if the true per acre value is higher and development follows the high-density pattern with the land targeted for conservation in the more populated high urban influence area, then estimated benefits are much greater than expected costs. Estimated benefits exceed costs in total and for the high-urban-influence area whenever the high value per household per acre is assumed.

Estimated costs are relatively certain, and likely have a fairly narrow band of confidence, simply because we have market data on which to base these estimates. The results must be tempered by the fact that the benefit estimates cover only part of the benefits from farmland conservation that can be estimated quantitatively. The literature provides a wide range of values from which to choose, and the site-specific characteristics and preferences of areas across the country need to be factored in. However, the exercise is a useful one to judge the potential magnitudes and to provoke discussion and further analysis.

Table 8—Comparison of costs and benefits for protecting cropland, by degree of urban influence, 1995

	Degree of urban influence ¹			Total
	High	Medium	Low	
	<i>Million dollars</i>			
Cost of PDR easements²				
Cropland	87,803	24,741	17,894	130,438
Estimated benefits of conserving farmland³				
High-density scenario				
Percent developed	90%	10%	5%	
Low value/acre/household	17,500	500	250	18,250
High value/acre/household	243,500	8,500	3,750	255,750
Low-density scenario				
Percent developed	60%	20%	10%	
Low value/acre/household	11,750	1,250	500	13,500
High value/acre/household	162,250	17,250	7,500	187,250

¹ See box "Methods for Estimating Cropland and Farmland Purchase of Development Rights Cost" for an explanation of urban influence.

² See appendix table 2 for details and box "Methods for Estimating Cropland and Farmland Purchase of Development Rights Cost."

³ Present value of estimated annual benefits capitalized at 4 percent. See table 5 for details of estimated annual benefits.

Sources: ERS analysis of NASS June Agricultural Survey and USDA National Resources Inventory data.