Section 4: Efforts to Build Conservation Incentives and Requirements into Zoning Codes

4.1: Background

Randal A. Strobo
Yale School of Forestry & Environmental Studies

There are many techniques used to build incentives or requirements into zoning codes and other planning policies to promote land conservation. The decentralized nature of local governments and planning organizations allows for the experimentation of different techniques on a large scale. Given time, the best strategies will emerge in different places and times, while the conservation community and local governments learn how these different techniques work under different circumstances. Private land acquisition organizations and governments should not be afraid to collaborate and innovate to find approaches to encouraging land conservation.

Traditional land use requirements begin with a local government’s police power to influence how a landscape is organized. Starting in the 1920’s, zoning was quite rigid. As landscapes, developers, and communities became more complex; there was a need to make zoning regulations more flexible. Today, sustainable development, conservation, preservation, and other environmental concerns are coming to the forefront of land use planning. Many governments are utilizing traditional land use techniques while complimenting those techniques with new, innovative tools to plan their communities more sustainably.

Traditional Land Use Techniques

The 1922 Standard State Zoning Enabling Act was created by the U.S. Department of Commerce. This Act provided the models for the state laws that delegate land use planning authority to local municipalities and which were adopted by most of the 50 states. These state laws added to the already delegated and inherent police powers of local governments to protect the public health, safety, welfare, and morals. Included in those model state laws were the powers that local governments were given by their states to adopt comprehensive plans, zoning laws, and subdivision and site plan regulations (Nolon, 2003).
Comprehensive Land Use Plans

Most states require local governments to create comprehensive land use plans. Planning and zoning regulations must conform to those comprehensive plans. Comprehensive land use plans include long-term environmental goals, intermediate-term conservation objectives tied to each goal, and shorter-term strategies designed to accomplish each objective. States have used a variety of approaches to ensure that the localities under their jurisdiction develop comprehensive plans that take steps towards land conservation.¹

Zoning

Today, the variation in zoning ordinances is staggering, with many municipalities having developed innovative ordinances to protect land within their jurisdictions. Zoning use districts and their development specifications can be used to provide communities with a method of conserving natural resources and the environment. Successful strategies range from placing environmentally sensitive land into zoning districts that only allow very limited development, to incorporating property development standards through a variety of conservation measures such as maximum unit density, lot coverage, building height, minimum lot size, setback requirements, building spacing, and requirements for open space. Local governments have also adopted explicit conservation policies in their zoning ordinances. Zoning techniques are also used to protect open space and the natural resources and environmental functions associated with those spaces. Zoning can achieve environmental objectives by requiring compliance with performance objectives that limit adverse environmental effects such as erosion, ground water contamination, and wetland removal. Zoning standards can also specify that environmental functions in zoning districts be drawn to conform to watershed boundaries or include large parcels rich in natural resources be minimally impacted by land development (Nolon, 2003).

Zoning ordinances that achieve locally appropriate uses of the land are not likely to be invalidated by a court. This includes protecting land for conservation purposes as long as the local government can show that they have a rational basis for such a determination. For example, an ordinance drafted for the preservation of open space has been found to be a legitimate land use objective; however, some state courts have held that the preservation of open space for purely aesthetic reasons is not a valid exercise of a local government’s police powers.²

Approvals, Conditions, and Reviews

Another traditional power granted to local governments is the review of land use projects for the development of private property. Commonly, permits are issued, with or without conditions, or are denied for failure to comply with local regulations. Most applications will not be approved unless they are in compliance with local zoning regulations, the comprehensive plan and other local standards.

Local governments are also authorized to promulgate and enforce subdivision and site plan regulations. Here, local planning and zoning boards can impose conditions on approvals of site plans to mitigate adverse impacts on the environment.
The subdivision of land involves the legal division of a parcel into a number of lots for the purpose of development and sale. Subdivision regulations can assure that new development is cost-effective, properly designed, and has a positive impact on the community and the environment. Many states include substantial environmental standards in their subdivision regulations (Nolon, 2003).

### Examples of Incorporating Conservation Provisions into Zoning Laws

- Manhattan, Kansas, zoning ordinance includes a reference to the conservation of natural resources, including open space preservation, in its statement of purpose (City of Manhattan, Kansas, Zoning Ordinance § 2-101).

- The city of Knoxville, Tennessee, established an Open Space Preservation District to provide areas in which the principal use of the land is devoted to open space and/or the preservation and protection of park and recreation lands, wilderness areas, beach and shoreline areas, scenic routes, wild and scenic rivers, historical and archaeological sites, watersheds and water supply areas, and wildlife and their habitats (Knoxville, Tennessee, Zoning Regulations Article IV, § 1a).

- The Fiscal Court in the town of Marion, Kentucky, enacted an ordinance that prevented farmers from keeping hogs anywhere within the city limits at any time from April 1 through September 30 to mitigate noxious odors, ground water contamination, and other environmental impacts (Marion, Kentucky, Zoning Ordinance § 90-24).

- Grandview, Missouri, has created a conservancy district within its zoning ordinance to preserve in perpetuity marshes, wetlands, open space, slopes, and other areas of high aesthetic and ecological value (Grandview, Missouri, Zoning Code Chapter 31). See Nolan (2003).

### Emerging Techniques for Including Conservation in Land Use Controls

The inflexibility of traditional Euclidean zoning led planners and regulators to pursue more flexible avenues of land use regulation. While the basic structure of Euclidean zoning remains, planners have instituted alternative ways of controlling the land uses in their communities that correspond to changing views on the environment, community growth, economics, and preservation. Considering the vast and varying amount of comprehensive plans, zoning ordinances, protocols for planning, enforcement and approvals, and other methods of land regulation across the country, local governments were bound to develop a myriad of techniques through regulation to promote land conservation within their communities. The

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1 Euclidean zoning can be characterized by the isolation of land uses into specified geographic districts and dimensional standards. Euclidean zoning is often criticized for its inflexibility and out-of-date theories and strategies.
following will provide examples of the more prominent of those conservation techniques.

**Urban Growth Boundaries**

Urban growth boundaries (UGBs) typically create an urban growth area that encircles the city, containing land that is not within the city’s limits but under county jurisdiction. They are long-term boundaries used as a pro-active growth management tool that seeks to contain, control, direct or phase growth to promote more compact, contiguous urban development. Their boundaries aim to protect farmlands, watersheds, wildlife habitats and other resource lands from sprawl by controlling limited urban expansion onto farm and forestlands (Jaffe, 2005). UGBs help to preserve land and resources outside the designated growth districts from random or leapfrog development prevalent in many metropolitan areas (Nolan, 2003).

The Portland Oregon UGB

One of one the most notorious examples of a UGB can be found in Portland, Oregon. Oregon’s strict UGB has generated high demand for inner city and downtown redevelopment (Paddock, 2008). By maximizing the use of land parcels within the UGB, the boundary has prevented the razing and subsequent development of huge forests and farms at the city’s edge. By also maximizing the efficient use of vacant and already-developed land, the UGB has increased the amount of housing inside the growth area and catalyzed the revitalization of Portland’s downtown (Mandelker, 1999). Yet, Portland’s UGB is not without its detractors. The impacts of Portland’s UGB on increased housing costs, increased automobile use, and increased suburban development has been hotly debated (Jun, 2004).

The area within a UGB is known as the “growth area.” Here, development at higher densities is encouraged, and infrastructure, such as roads, water systems, and sewer systems, is provided for or planned. UGBs motivate the development and re-development of land and buildings within the growth area, keeping the urban center vibrant and reducing sprawl. This allows for more sustainable, efficient growth and the preservation of lands outside of the growth area. However, when implementing UGBs, local governments should implement a strategy with surrounding jurisdictions to avoid similar spillover problems and plan for sustainable development within the growth area.4

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The Lexington, Kentucky UGB – The First, but Flawed

One of the nation’s oldest UGBs can be found in Lexington, Kentucky, where it was implemented in 1957. As the UGB began to impact the supply of land that could be developed in Lexington, growth and development began to move outside the sphere of influence of the UGB. Hence, the areas outside of Lexington’s UGB sphere of influence (beyond Fayette County wherein Lexington is located) experienced a spillover effect. Developers and homebuyers seeking lower prices and lower densities migrated to the surrounding counties without the same strict growth controls. Lexington failed to appropriately plan the development within the UGB causing uneven growth, poor transportation corridors, and poor municipal services access (Jaffe, 2005).

Transfer of Development Rights

Where authorized by state law to do so, localities can provide for the transfer of the right to develop property under current zoning provisions from one part of the community to another. Transfer of Development Rights (TDR) is a market-based land use tool that permits the transfer of development potential from areas identified for preservation to areas that are more appropriate to accommodate increased growth (NJHC, 2008). TDR programs can be very complicated and often require a significant public-private collaboration to work effectively (Nolon, 2003).

There are three basic elements of a TDR program: the sending zone, the receiving zone, and the TDR credits. The sending zones are the areas identified for preservation from which development potential is transferred or sent out. Receiving zones should be identified as having the infrastructure capacity, ecological integrity, and real estate market to support increased development and its attenuating growth impacts. The TDR credits are a legal representation of the development rights in the sending and receiving zones. A TDR program must also have a process for recording, transferring, and tracking TDR credits from a parcel in a sending zone to their use in a receiving zone. Once a property’s development rights are severed, the parcel is encumbered with either a deed restriction or conservation easement limiting its future use to its current use in perpetuity (NJHC, 2008).

Landowners in the sending zones receive compensation for the transferable development rights of their property that have been restricted in support of preservation. Payment for this lost development potential comes from purchasers who buy TDR credits representing the lost development potential of parcels in the sending zones. The TDR credits then entitle the purchaser to build in a receiving zone at a density greater than permitted in the existing zoning. A TDR credit can never be used again once it has been redeemed.

The TDR credits can be traded in a free market, but many TDR programs utilize a TDR credit bank to support program administration (Nolon, 2003). The bank can serve as a clearinghouse for information regarding the program and can administer...
the recording, transferring, and tracking of TDR credits. The bank may also assist sellers and purchasers of TDR credits by serving as a buyer or seller of last resort of TDR credits or by guaranteeing loans utilizing the TDR credits as collateral. TDR credit banks may also only facilitate the transaction between buyers and sellers. Most importantly, the existence of a TDR credit bank establishes a degree of credibility for a TDR program especially where the bank is able to purchase and sell credits (NJHC, 2008).

Both sending zones and receiving zones should be identified at the outset of a TDR program. These zones should also be incorporated into the overall zoning scheme as either specific zone districts or overlay zones (see Overlay Districts below). Sending zones are easily identifiable because communities usually know what resources are in need of protection. However, identification of receiving zones is more difficult for two reasons: (1) determining whether a potential receiving zone has the ecological integrity and infrastructure capacity to accept increased development requires a lot of research and work and (2) there is often the political challenge of overcoming reluctance to accept additional growth. Through careful planning and public input, however, these challenges may be overcome (NJHC, 2008).

New Jersey Highlands Council and TDR

Through passage of the Highlands Act in 2004, the New Jersey Highlands Water Protection and Planning Council (Highlands Council) was created and charged with the task of developing a Regional Master Plan to restore and enhance the significant values of the critical resources of the Highlands Region. The Highlands Council is an independent agency of the State of New Jersey. A major purpose of the Regional Master Plan is to determine the amount and type of human development and activity the ecosystem of the Highlands Region can sustain. The Highlands Council continues to undertake an impressive data gathering and analysis regime utilizing GIS and other mechanisms to identify priority sites for protection with the intention of establishing and maintaining a successful TDR program – an essential part of their overall protection scheme. However, because of political outcry and prior experiences with unwanted growth in the mandatory receiving zones of the Pinelands TDR program, the New Jersey legislature decided to make the implementation of receiving zones in the Highlands region voluntary. As a result, the Highlands TDR program is not as effective as is could be, and unless more receiving zones are established, the market will be saturated with TDR credits but have no buyers. A solution may be to require municipalities that are unopposed to more density and that receive water from the Highlands watershed to establish a receiving zone within their boundaries as a condition for a continuing water supply. For more information visit http://www.highlands.state.nj.us/.
Another difficult aspect of designing a TDR program is determining how to define and value the development rights that are severed from the land and eligible to be transferred. Usually, a formula is used to quantify and define the development rights based on such factors as the lot area, floor area, floor area ratios, density, height limitations, or any other criteria that effectively quantify an appropriate value. The formula chosen converts development rights into specific development credits (Nolon, 2003).

The first TDR program was implemented in New York City in 1968. As of 2007, there were at least 181 TDR programs in 33 states that have preserved at least 300,000 acres of farmland, natural areas, and open space (Pruetz and Pruetz, 2007). Two-thirds of the 181 TDR programs are designed primarily for environmental protection. TDR programs emphasize farmland preservation for 20% of the 181 TDR programs. More than half of this 20% are located in Maryland and southeastern Pennsylvania. This is likely due to the high productivity of farms in this region and the desire of its farmers to stay in agriculture, particularly the Amish and Mennonite farmers in Chester and Lancaster counties in Pennsylvania (Pruetz and Pruetz, 2007). TDR programs are also being utilized to promote historical preservation, community revitalization, and economic development. TDR programs continue to be established for a number of conservation purposes including maintaining agricultural viability, protecting ecologically important lands, maintaining ecosystem health, and protecting high water quality.

Several factors have been identified for the successful implementation of a TDR program, including:

- The TDR program’s consistency with the comprehensive plan of the area;
- The suitability (or lack of) for development of properties in sending zones due to a remote location, limited infrastructure, poor soils, steep slopes, and other physical constraints;
- Successful outreach and education of receiving zone landowners regarding the TDR program’s purpose of implementing, rather than circumventing, community land use plans and requirements; and
- The provision for enticing incentives for buyers and sellers of TDR credits beyond residential density bonuses, such as streamlined application process, the adoption of low baseline densities, balancing the affordability of TDR credits with appropriate compensation to the sellers, the flexibility and diversity of options of a TDR program, and the willingness to adjust the TDR program if needed (Pruetz and Pruetz, 2007).

TDR programs are most effective in communities that face strong development pressure, where officials believe it would be difficult to successfully implement traditional zoning restrictions to achieve preservation goals, or where financial resources are not available for municipalities to buy land or development rights on their own. TDR programs also require sophisticated administration, structure, and funding. TDR should be a compliment to an already strong zoning program, not a substitute for traditional zoning (Hanly-Ford, 2010).
Land trusts have experience with the purchase of development rights, as conservation easements have been a major tool in the land trusts’ conservation arsenal for some time. Thus, land trusts should make a great partner with local governments to facilitate and administer TDR programs. In addition, land trusts may also contribute by educating the public to simplify the complexities of a TDR program and by marketing the program to landowners and developers. If land trusts are involved, an unambiguous agreement or contract between the local government and the land trust is crucial.

Lancaster County Farm Trust – Municipal Partner in TDR

The Lancaster County Farm Trust (LCFT) has developed the organizational capacity to assist Lancaster municipalities with a variety of their planning programs, including TDR programs. The Trust has successfully developed cooperative relationships with several townships and has had the opportunity to assist in establishing TDR programs and prioritizing areas for preservation. This includes the promoting and executing of TDR programs in Warwick, West Lampeter, and West Hempfield Townships. The Trust has also participated in creating The Lancaster County TDR Practitioner’s Handbook. With a solid understanding of the nuts and bolts behind TDR programs, Trust staff will introduce the TDR handbook to municipal employees and officials and will support development of this preservation and growth management tool. As of 2008, the LCFT has preserved over 20,000 acres and 1000 farms in Lancaster County. The TDR Handbook can be downloaded at http://www.co.lancaster.pa.us/toolbox/lib/toolbox/tools/tdr_handbook.pdf. For additional information visit http://www.lancasterfarmlandtrust.org.

Still, TDR programs have not been as successful as hoped. There has been difficulty establishing market value for the development rights of property in the sending zones, a lack of acceptable incentives to satisfy landowners and developers, vigorous political opposition to expanded growth in receiving zones, a need to establish more TDR credit banks, lack of resources and inadequate administration, and frustration with the overall complexity of a TDR program. Land trusts and government regulators should address these difficulties, limit the constraints, and expand the opportunities to make TDR programs more successful and widespread.

Conservation Development

Conservation developments are projects that combine land development, land conservation, and revenue generation while providing protection of conservation resources. Although conservation development is more of a tool for developers to design developments for conservation, it is not necessarily mandated through regulation. Nevertheless, conservation development has been found to increase
conservation value as compared to traditional subdivision development. Moreover, in order to allow for conservation development, zoning ordinances, and other land use regulations often have to be amended. Conservation development may be another important tool for land trusts, regulators, and developers to explore in order to preserve conservation values in a property slated for development.

Conservation development uses a process of ecologically based planning and design to assess a site’s natural resources and environmental context, and then to use this knowledge to conserve portions of the site with high resource value while designing a development that minimizes environmental impacts on the remainder (Milder, Lassoie, and Bedford, 2008). Conservation developments are one response to the lack of public funding to support private land conservation initiatives. Conservation developments are mostly a tool of the private sector; however, it is essential that local governments incorporate more conservation-oriented design standards into the local land-use ordinances and subdivision regulations to assure that the majority of new developments are able to contain a substantial percentage of protected open space.

There are several different types of conservation developments that vary in scale, development density, context, and expected conservation benefits. The four prominent types are conservation buyer projects, conservation and limited development projects, conservation subdivisions, and conservation-oriented planned development projects. Conservation buyer projects contain a small amount of development – most often a single house for the landowner. This technique is predominantly used by land trusts as a cost-effective land protection strategy. Conservation and limited development projects (CLDPs) are usually initiated by land trusts, landowners, and/or developers and use limited development as a means to finance land conservation or to create a project with both profit and conservation goals. Conservation subdivisions, usually initiated by for-profit developers, can be defined as cluster developments (see below) or open-space residential developments and are built at or near the full density allowable by zoning, but housing is clustered onto smaller lots to protect a portion of the site for conservation purposes. Conservation-oriented planned developments, also conducted by for-profit developers, typically occupy large sites of 500–1500 hectares and include a mix of development types and large protected areas (Milder et al, 2008).

A study by Milder et al. (2008) illustrated that CLDPs are an effective yet low-cost conservation strategy that can be used by land trusts, landowners, and conservation-minded developers. The CLDPs evaluated were protecting threatened conservation resources, including rare biodiversity and ecosystem functions, and resulted in significantly more conservation benefits than their respective baseline land-use scenarios.

Milder et al. (2008) indicated that the conservation subdivisions evaluated provided significantly less conservation benefit than the CLDPs. Though conservation subdivisions have a more conservation-friendly layout than conventional developments, they are not as effective as CLDPs for conservation purposes.
This figure, taken from Milder (2007), demonstrates the various uses of CDLP. As Milder explains “(a) Land parcels are artificial demarcations that rarely coincide with the distribution of natural resources. Thus, the conventional conservation approach of protecting individual parcels often fails to safeguard the full extent of critical resources while expending scarce funds to protect land of lower conservation value. (b) In conservation development, valuable resource areas with patchy distribution—such as streams and their riparian zones (1), a meadow containing rare plant species and a surrounding buffer (2), a seep and up-gradient areas that directly feed it (3), and a complementary set of reptile habitats (4) can be protected while making less valuable areas (shown in dark gray) available for development. Development of the lower-value portion of each site finances protection of the higher-value areas, resulting in a cost-effective approach to natural resource conservation.”

Certain conservation developments can also generate additional profits compared to conventional developments. From a developer’s standpoint, conservation subdivisions can provide higher profits than conventional subdivisions. Lots in conservation subdivisions often carry a price premium, are less expensive to build, and sell more quickly than lots in conventional subdivisions. However, this does not account for the benefits and costs to society that result from the use of conservation subdivisions (Mohamedurban, 2006). These include higher housing costs, impacts on sustainability, the development of lands that perhaps should be left for protection, and sprawl.

**Build Out Analyses**

One of the greatest difficulties in enacting effective zoning is the lack of political will to adopt zoning that increases density in planned growth areas to accommodate development and reduce densities in planned protection areas to discourage development. A build-out analysis is an important first step in evaluating a community’s zoning. By preparing maps showing potential future development under the existing conventional zoning, a build out analysis can visually represent to community members what their community will look like in the near future. Build-out analyses are conducted to estimate how much new development could occur and where it could occur under the current zoning. They can also help prevent overzoning by tying the amount of land planned for growth and development to future growth projections. A build-out analysis can be an effective wake-up call to a community that is growing faster than it desires (Daniels and Bowers, 1997).
Build Out Analysis of the Barnegat Bay Watershed

As part of the Barnegat Bay National Estuary Program’s management plan, the Center for Remote Sensing and Spatial Analysis (CRSSA) completed a build-out analysis of the watershed in New Jersey. The build-out analysis created a model of the watershed when all land available for development is developed at the highest intensities possible. This type of analysis was useful in long-term planning efforts as a way to understand the potential impacts of future growth in the area. The build-out model estimated that the number of dwelling units and population could increase 30 to 34% and impervious surface cover could increase up to 50% in the baseline scenario. This indicated that comprehensive watershed scale planning is needed to address future development impacts in the area. For the complete analysis visit http://www.crssa.rutgers.edu/projects/runj/buildout.html.

Incentive Zoning

Local governments are often delegated by state statutes the power to secure open space, recreational, and other natural resource benefits for the community. This can be done by imposing conditions on development projects that require developers to dedicate land to the community for public use or contribute cash in lieu of land dedication. Some states allow local governments to award bonus density to developers in exchange for their agreement to preserve natural resources or provide recreational facilities. This is known as incentive zoning, wherein the local government will incentivize developers to make a conservation contribution to the community in exchange for bonus density or some other incentive. The success of incentive zoning is usually predicated on whether the incentives are mandatory or not (Clark, 2007).

Related to incentive zoning are impact fees, where a local government requires a developer to pay a fee in order to help provide for sewage, roads, and other infrastructure access to the new development. However, impact fees are often too insignificant to be effective conservation tools.

Incentivizing for the Environment

Local governments can provide zoning incentives to developers in exchange for the provision of amenities such as recreation and open space benefits. In Lancaster County, Nebraska, a zoning ordinance allows development under an approach called the Community Unit Plan (Lancaster County, Nebraska, Code § 14.003). The Community Unit Plan includes development bonuses for developments that preserve the rural character of the site, a natural habitat, a natural environmental feature and existing drainage courses. The Community Unit Plan also allows developers to receive density bonuses of up to 20% for conserving energy, protecting environmentally sensitive areas, and for maintaining agricultural lands (Nolon, 2003).
Cluster Development and Planned Unit Developments

Cluster and planned units developments emerged around the 1950’s in response to the trend towards large-scale development projects (Nolan, 2003). In direct response to the rigidity of traditional Euclidean zoning, these techniques allow developers and planners to provide for flexibility in building and site design while allowing large developments to proceed.

Under cluster development, the local government permits a land developer to vary the traditional dimensional requirements of a zoning ordinance. For instance, a developer can develop with a higher density than usually allowed, leaving undeveloped property to provide open space or serve the recreational needs of the residents of the development. When properly implemented, this technique is popular because it will both reduce the amount of land required for the infrastructure of the development, such as roads and utilities, and will increase the amount of open space (Reichle, 2009).

Local governments have also implemented planned development units (PUDs). PUDs allow developers to apply for a special permit to create a higher density, mixed use development in areas that are usually zoned for only one use, giving the developer more design flexibility. This helps create more cost-effective, efficient, and conservation-friendly development.

Cluster Developments and Conservation Easements

In Johnson County, Iowa, the zoning ordinance provides for clustered subdivisions using conservation easements that provide permanent protection of the preserved environmental resources (Johnson County, Iowa, Code § 05-16-02.). This provision is intended to allow development that will meet future growth projections while preserving and protecting agriculturally, environmentally, and historically significant features, and other open areas of Johnson County. The ordinance mandates the maintenance of conservation easements and includes a process for acquiring a density bonus as long as no less than 50% of the parcel is designated open space or limited use agriculture. Easement and site plan requirements consider topography, drainage, topographical features, areas for mitigation and preservation, existing zoning and land use, and approximate density of residential uses (Nolan, 2003).

Overlay Districts

Overlay districts are mapped areas that are superimposed on existing zoning districts. These overlay districts impose additional regulations on the underlying zoning districts while the regulations of the underlying district remain in place. Overlay districts can be designed to protect specific resources such as habitats, ridgelines, trees, historic or scenic districts, or even night skies. They can also be designed to protect environmentally significant or vulnerable areas. Overlay districts can also
counter the fragmenting effects of traditional zoning by crossing district boundaries and can be used to direct development to appropriate areas of a community. A great tool for local natural resource protection, overlay zones can be utilized as only one layer of protection or in tandem with other overlay zones to protect vulnerable or valuable lands. For example, DeKalb, Georgia, has included in its zoning ordinance an Environmental Overlay Zone that allows the zoning commission to identify and protect environmentally sensitive areas. The overlay preserves viewsheds, limits impervious surfaces, and provides for increased density of development in exchange for environmental benefits to the town (Nolon, 2003).

The Conservation Area Overlay District – A Model Ordinance

The Conservation Area Overlay District (CAOD) was developed by the Metropolitan Conservation Alliance of the Wildlife Conservation Society. The CAOD is an overlay district that crosses political boundaries and includes performance standards to protect the diversity of habitats and species. The purpose of the CAOD is to preserve ecological communities, environmentally sensitive areas, and native vegetation; and to protect scenic and historical resources. One of the most innovative features of the CAOD is that it can extend across municipal boundaries to follow the natural contours of ecosystems rather than political contours. The CAOD also protects open space, water resources, slopes, and ridges (Nolan, 2003). For more information visit http://www.ecostudies.org/mca.html.

Conclusion

This is by no means an exhaustive list of the many ways to build incentives and restrictions into zoning regulations. New techniques are always being developed, as are refinements to older techniques. Private land acquisition organizations, community members, and local governments must continue to work together to innovate and determine which techniques work best for their communities. Finding ways to incorporate conservation into land use regulation is imperative to the protection of lands in every community.
Natural Lands Trust – Influencing Government Land Use Regulation

Natural Lands Trust has been working to protect over 38,000 acres in eastern Pennsylvania and southern New Jersey since 1953. Natural Lands Trust has also developed a variety of ways to influence and inform government regulators on how to take a more proactive approach to managing growth by providing mapping, open space plans, zoning ordinance revisions, and other techniques that promote conservation. Among those techniques is a program called “Growing Greener.” Growing Greener is a collaborative program of the Pennsylvania Department of Conservation and Natural Resources, the Pennsylvania Governor’s Center for Local Government Services, and Natural Lands Trust. Participating municipalities learn how to make changes to land-use instruments such as regulations and comprehensive plans in order to protect land through their municipal land development process. For more information visit http://www.natlands.org.

Discussion Questions

- What role does the land conservation community play in regards to land use regulation? Are they where they want to be; do they need to be more involved; less involved?

- How can land trusts and other private land acquisitions organizations prioritize which land use regulatory techniques are most suitable for their community?

- What are the different ways land trusts can collaborate with government officials and smart growth advocates to pass land use regulations that promote conservation?

- Since some of the techniques are quite complicated, how can land conservation organizations harness the resources and expertise of the government and others to help implement these techniques? How have land trusts in Lancaster County, Pennsylvania managed to implement and manage a TDR program in that area? Why are there so few others?

- What other innovative techniques are out there? What can the land conservation do to help develop new techniques?

- Should land trusts be putting forth people to sit on planning boards or commissions?

Organizations Doing Interesting Work

Land Use Law Center – Pace University School of Law – Established in 1993, the Land Use Law Center is dedicated to fostering the development of sustainable communities and regions through the promotion of innovative land use strategies and dispute
resolution techniques. The Center involves land use and real estate leaders, attorneys, and other professionals in its programs. The Land Use Law Center continues to develop its Gaining Ground Information Database, compiling innovative land use and planning instruments and regulations across the nation. See http://www.law.pace.edu/landuse.

**Natural Lands Trust (NLT)** – The NLT continues to develop ways in which land trusts can interact and influence local government to incentivize conservation. Through their Growing Greener program, NLT provides model ordinances, policies, and plans to make conservation a priority for government planners. For more information visit http://www.natlands.org.

**Metropolitan Conservation Alliance (MCA)** – The MCA is a program developed by the Cary Institute for Ecosystem Studies. The MCA develops innovative conservation tools that respond to the needs of communities and decision-makers as they strive to integrate biodiversity information into the land-use planning process. Published in the MCA Technical Paper Series, these tools are developed in collaboration with land-use attorneys, biologists, developers, municipal officials, agency personnel, and university researchers. The MCA develops partnerships with local land trusts, watershed organizations, conservation districts, and others. For more information visit http://www.ecostudies.org/mca.html.

**Lancaster County Farm Trust (LCFT)** – LCFT is a successful land trust in Pennsylvania that has developed sophisticated programs to foster conservation programs in Lancaster County, Pennsylvania. LCFT works closely with conservation organizations and local governments and advises each of the different techniques and strategies for conservation including TDR. For more information visit http://www.lancasterfarmlandtrust.org.

**New Jersey Highlands Water Protection and Planning Council (Highlands Council)** – The Master Plan for the Highlands created by the Highlands Council gives insight how a large state mandated organization works with the public to identify priority areas for conservation. The Highlands Council is very transparent and allows public access to a large amount of data, research, and documents. For more information visit http://www.state.nj.us/njhighlands.

**Piedmont Environmental Council (PEC)** – The PEC safeguards landscapes, communities and the heritage of the Virginia Piedmont by involving citizens in public policy and land conservation. The PEC focuses on a variety of conservation issues including clean air and water, conserving land, energy solutions, historic and scenic landscapes, thriving communities, transportation solutions, wildlife habitat, and working farms and forestland. For more information visit http://www.pecva.org.

**Rutgers University Grant F. Walton Center for Remote Sensing and Spatial Analysis (CRSSA)** – CRSSA’s research and development program focuses on advancing the application of various geo-spatial technologies including remote sensing, geographic information systems (GIS) and global positioning systems (GPS). CRSSA also develops spatial-statistical analysis/modeling techniques to the environmental, agricultural and natural resource sciences and management including build out analyses to monitor the relationship between growth and natural resources. For more information visit http://www.crssa.rutgers.edu.
Works Cited


4.2: Examples, sources of information and other key points from the discussion

Some of the examples, sources of information and key points from the discussion included the following:

- Zoning is a tool for implementing comprehensive plans.
  - But it is often skewed toward development in the hunt for a bigger, local real estate tax base.
  - Zoning alone is not well suited for protecting natural resource values as it needs to maintain reasonable economic opportunities for land owners in order to pass constitutional muster.
  - There is a need for comprehensive plans that incorporate a big vision of bringing back cities, stopping sprawl and encouraging smart growth.
  - Zoning controls can be paired with land acquisition to make conservation efforts more durable – even (particularly?) in quite restrictive zones.

- A number of lessons have been learned about using zoning codes to support land conservation, including the following:
  - The premier tools used to date (transferable development rights, urban growth boundaries and very low density zoning) take a long time to put in place and are not widely used.
  - Transferable development rights (TDR) work best across large geographic areas that include receiving zones with high demand for development.
  - Urban growth boundaries are more difficult to put in place than TDR programs, but have worked well in locations such as Lexington, KY and Lancaster, PA. Approximately 150 such boundaries exist in the US today.
  - Agricultural and forest zones using large minimum lot size zoning (25 acres or more) have been successfully used in areas such as Baltimore County, MD, but found mainly on the West Coast and the rural Midwest.

- Conservation design – including community assessments, comprehensive planning, conservation zoning and conservation subdivision design – have been used in many communities both to preserve land and channel development in a more sustainable manner. Additional information on this approach can be found at www.landchoices.org and www.greenerprospects.com. The Natural Lands Trust has also worked on a number of such projects (see http://www.natlands.org/categories/subcategory.asp?fldSubCategoryId=26).

- Greenway exactions from developers have been successful in Cary, NC, as part of the effort to implement a regional greenway plan and allow developers to charge more for homes along the greenway.
• Conservation or cluster zoning can work well in suburban areas, but not as well in working landscapes given the risk of “cluster sprawl.”

• In York, ME, the zoning ordinance calls for the land trust to work with the Planning Board and developers to include conservation areas in site designs.

• Easements from mitigation activities appear to be creating some waves in the land trust community – leading some organizations to complain that if they accept such easements they are viewed as “second class citizens” given the relative newness of the tool and the worry that the land trust is picking up the enforcement tab from developers and regulatory agencies.

• A huge number of easements are generated by municipal officials across the country – no one knows if they are being monitored or enforced or even if the resources exist to do so. This poses major risks for the future.

• With the current administration in DC there exists an opportunity to try and redirect the federal incentives/subsidies affecting development from encouraging sprawl to encouraging the redevelopment of US cities. For example, the Department of Transportation is only allowed to support highways, not roads in cities.

• The efforts to build “green infrastructure” in cities (such as for stormwater management) are creating new opportunities to blend conservation and more sustainable/resilient development.

• Conservation groups can help reduce development pressure on rural areas by joining the coalitions seeking to build and restore livable cities – thereby also adding a positive argument to their repertoire . . . not just “don’t build there”, but also “do build here”.

• Public access can be a decider between private and public tools – acquisition yes, regulation no.

• Land trusts started as a response to poor local zoning. If they seek to enter this arena, they should start with the tools that are likely to succeed in their context and build from there.