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Report – Land Use and Septic Systems in Georgia
INTRODUCTION (Patrick Bradshaw)

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The metro Atlanta region is developing previously forested and agricultural land at an alarming pace. According to the Atlanta Regional Commission, the Atlanta area's regional planning agency, more than 240,000 acres of previously agricultural, forested or greenfield land has been developed since 1999 in the 13 county Atlanta region, representing an area roughly the size of Cobb County.¹ Due to this rapid development pace, many counties in the region, such as Cobb, Fulton, Gwinnett and Forsyth are predicted to exhaust all developable land within 15 years.² Much of this growth is typified by conventional suburban growth featuring single family households situated on 1-acre lots, especially where sewer is unavailable. One subdivision that offers a break from this trend is the Serenbe community in south Fulton County. Utilizing a clustered septic system and an on-site waste treatment facility using natural techniques, single family housing units in Serenbe can fit on smaller lots. Freed from the individual leech fields required by conventional septic systems, Serenbe features clustered villages of homes and shops, which allows a higher percentage of the subdivision's overall land to remain undeveloped than what would normally be found in comparable subdivisions.

This report will take a comprehensive look at the use of cluster septic systems as a way to foster the development of conservation subdivisions and clustered developments. It will offer a proposal for enticing developers to build cluster septic systems. A thorough analysis of the legal implications of possible mandates for cluster septic systems is also included.

¹ Atlanta Regional Commission. *Regional Snapshot: Land Development in the Atlanta Region*. Accessed April 16th

2008. Available at <http://www.atlantaregional.com/arc/documents/landprosnapshot.pdf>.

² Ibid.

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Section 1 will cover conventional septic systems. How conventional septic systems operate, the advantages and disadvantages with their implementation, and their effect on land use and water quality in the metro Atlanta region are detailed. Section 2 will introduce the concept of cluster developments as a land conserving alternative to the conventional sprawling subdivision. In particular the Serenbe community will be profiled. Section 3 will briefly describe the engineering details of Serenbe's on-site cluster septic wastewater treatment system. Section 4 explores a plan for encouraging the implementation of on-site treatment facilities such as the one installed at Serenbe, emphasizing loans, permitting fee relief, and planning assistance. Section 5 will elaborate on the legal viability of mandating cluster septic systems. Constitutional issues (5th amendment takings, due process issues, etc) state law, federal regulation and case law will be explored to determine legal feasibility. Finally, Section 6 will provide Federal and State laws that affect the implementation of cluster septic systems and guidelines for any ordinances mandating cluster septic systems.

I. CLUSTER DEVELOPMENT (Dereth Bush)

Growth is inevitable. It can't be stopped, nor should time and resources be wasted stopping it. Instead, it should be managed and guided. Specifically, land use and design tools should be created and implemented to better shape new growth and development. Cluster development is one of these tools. It encourages compact development and the preservation of natural features. When used appropriately, it can curb the demolition of undeveloped natural land and can also help to preserve land in areas that are presently already developed.

Cluster development differs from typical development in which the land is divided into lots in entirety, using all of the land. This type of development may not consider leaving open space or preserving natural features.

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Cluster development can be a challenge when waste sewers are unavailable and septic systems must be employed. Lots must be large enough to support the proposed home and conventional septic systems. Additionally, individual parcels of land must provide sufficient space to allow for excavation, repair and rebuilding of septic systems that fail. However, neighborhood septic treatment systems can provide a way to address this challenge. Serenbe is an example. Through this approach, planners can achieve the same number, if not more, individual home sites, while preserving and enhancing the overall aesthetics of the property. This approach may permit a reduction in individual lot sizes and an increase in lot density while retaining larger areas of open green space.³

A. INDIVIDUAL SEPTIC SYSTEMS (Phillip Blaiklock)

Each American household creates 50 gallons of wastewater per day, and a third of those households use some form of on-site water treatment.⁴ “When they are properly designed, installed and maintained, septic tanks and similar on-site disposal systems are effective from an engineering perspective, economic for home owners and friendly to the environment. Because septic systems are out of sight, many homeowners rarely think about them.”⁵ Furthermore, a new septic system, installed, can cost from as little as a few thousand dollars⁶ to tens of thousands.

The Atlanta metro area has 233 dedicated sewage treatment facilities, of which only 103 are publicly owned. Most of the facilities can treat only 1 million gallons per day.⁷ Due to their

³ Sustainable Land Development Today, *Decentralized Wastewater Systems on the Rise*, November – December 2007, (<http://www.sldtonline.com/content/view/165/47/>)

⁴The American Groundwater Trust, *Septic Systems for Waste Water Disposal* (<http://www.agwt.org/info/septicystems.htm>)

⁵ *Id.*

⁶ North Carolina Cooperative Extension Service, *Waste Water & Waste Management* (<http://www.bae.ncsu.edu/programs/extension/publicat/wqwm/wm1.html>)

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inexpensive overhead, and environmental hurdles to be discussed, septic systems are prevalent in the region. Twenty-one percent of the area’s wastewater is filtered through septic systems. In rural developing areas, anywhere from 40% to 90% of homes use septic.⁸

1. Components of an Individual Septic System

An individual septic systems works fully on gravity. Household wastewater – anything from toilets, bathtubs, laundry and sinks – moves to a 1000-gallon tank shallowly buried in the home’s yard. In the tank, anaerobic bacteria (those not living in aerated environments) break down the organic wastes. “Septic tanks may have one or several chambers where solids are separated from waste water. The biological action of bacteria compacts the heavier solids causing them to settle at the bottom of the chamber; lightweight compounds such as waxes and grease drift to the surface.”⁹ Septic tanks cannot handle cooking greases, paint, paint thinners and other solvents, and paper products save for toilet tissue. Furthermore, use of garbage disposal units is discouraged.¹⁰ Accumulated sludge at the bottom of the tank must be emptied every few years depending on household size. This service is inexpensive, costing about \$100 - \$200 dollars.¹¹

⁷ *Id.*

⁸ Grenoble, Penelope B, *The Fine Art of Wastewater Planning*. Onsite Water Treatment, September-October 2007 (http://www.gradingandexcavation.com/ow_0709_fine.html)

⁹ The American Groundwater Trust

¹⁰ North Carolina Cooperative Extension Service

¹¹ The American Groundwater Trust

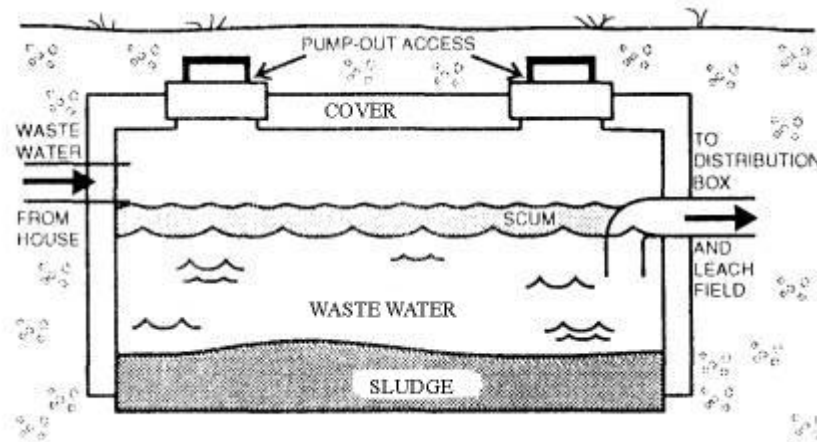


Figure 1- Septic Tank¹²

Gasses from the anaerobic processes are returned from the tank and are expelled from vents in the house's roof. The water flowing out of the tank is known as effluent. It may still contain bacteria, viruses and other contaminants. This is where the soil absorption system, or *leach field*, comes into play. Perforated pipes branching from the tank are buried in trenches in the leach field. Effluent seeps from them down through the soil. The *American Ground Water Trust* notes that fine soils heavy in clay, or loose gravelly soils are both insufficient for percolation.

"Adsorption" refers to the process by which pollutants are attracted to and held on the surfaces of soil molecules, thus immobilizing them. "Absorption" is a more general word used to describe the way in which pollutants are removed from effluent as it percolates through the soil. Soil absorption systems remove most of the suspended solids by filtration and reduce the contaminants by adsorption and microbial degradation.

The action of microbes consumes or transforms nutrients and makes them harmless. If the volume of soil underlying a soil absorption system is great enough, all but an insignificant proportion of the pollutants (except for the nitrogen compounds) can be removed before the waste water reaches the water table.¹³

¹² *Id.*

¹³ The American Groundwater Trust

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Local regulatory authorities perform *percolation tests* before installation of a new system

to ensure the soil can perform the filtration process.

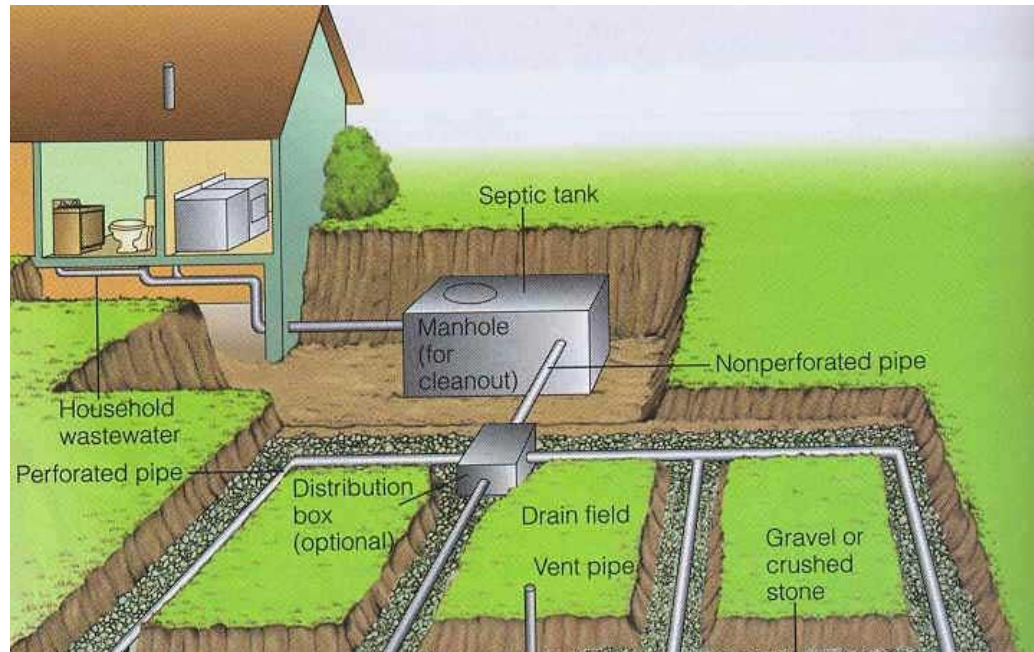


Figure 2- leach field in complete septic system¹⁴

In addition to the length of leach pipes – which itself can be twenty or more feet – another 50 to 100 feet of separation might be required between manmade and natural elements, like water mains, the property boundary, springs and wells.¹⁵ As such, septic systems typically require an entire acre of land,¹⁶ contributing to the region’s significant sprawl.

B. Over-reliance on septic

While septic system households often draw water from wells, the Atlanta metro region is an exception. The middle and southern portions of the state “rely a great deal more on

¹⁴ Thurston County Public Health & Social Services Department, *Inspecting Your Septic Tank* (http://www.co.thurston.wa.us/health/ehoss/inspect_septic.html)

¹⁵ *Id.*

¹⁶ North Carolina Cooperative Extension Service

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groundwater pumped up through wells from aquifers, as opposed to surface water. That’s partly why less stringent Level 2 restrictions exist there, permitting some outdoor watering.

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“But North Georgia’s Piedmont region doesn’t have as large a porous layer, so the groundwater is not abundant. And getting to it would entail drilling through granite—a prohibitively expensive project.”¹⁷ The region’s households instead must draw from Lake Lanier, only to lose that water to the ground.

Furthermore, “In many areas installation of septic systems was developer driven and viewed as a temporary solution, pending construction of sanitary sewers. Region-wide septic systems are considered water consumptive.”¹⁸ The Metro Atlanta Chamber of Commerce, in their 2006 *Water Resources Summary*, estimated that one million households in the region are on septic. If half of that wasted water could be reclaimed – assuming 50 daily gallons per household – it would equal the output of an additional 25 sewage treatment plants, each processing a million gallons of water daily.

In lieu of the region’s drought crisis, one might ask why additional sewer lines and treatments plants aren’t opened. There are, unfortunately, significant environmental and regulatory hurdles to overcome:

Because the assimilative capacity of surface receiving waters had been basically maxed out, the state’s Environmental Protection Division has basically ceased issuing new discharge permits. Additionally, water quality in approximately 55% of streams in the district did not meet standards for designated use, largely due to excessive fecal coliform. Georgia is currently under a federal consent decree to develop and implement total maximum daily loads (TMDLs) for impaired streams, and although most of the impairments are caused by nonpoint-source pollution, the court had threatened to shut down future water and wastewater permits, effectively halting future development.¹⁹

¹⁷ Woosley, Mark, *Rain On Me*, The Sunday Paper, October 20 2007.

¹⁸ Onsite Water Treatment, September-October 2007

¹⁹ Onsite Water Treatment, September-October 2007

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Starting in 1984, in fact, Georgia’s Environmental Protection Division began enforcing a moratorium on discharges of treated sewage into Lake Lanier. But in November of 2000, the EPD granted a permit to Gwinnet County to discharge 40 million gallons per day from a new treatment plant into the lake. The Lake Lanier Association fought the permit in court, contending that it “authorized discharges of fecal coliform that threatens public health and safety, [did] not limit mercury that will impair fishing in Lake Lanier and [permitted] pollutants at higher levels that are technically possible.”²⁰ After a four-year legal battle, the Georgia Supreme court overturned the permit. A revised discharge permit, with stricter standards, was eventually allowed. However, the association still contends that it “still does not use the highest and best level of technology available to treat the effluent prior to discharge into Lake Lanier.”²¹

Whatever side one takes in these environmental disputes, it’s obvious that the extension of sewage lines and treatment infrastructure is not a workable solution to the region’s water crisis.

Neither can the region sustain itself on septic. Clearly, a third way must be sought. Onsite cluster systems, like the one implemented in Serenebe in South Fulton County, are a compelling solution.

II. PRESERVING THE CHATTAHOOCHEE HILL COUNTRY (Dereth Bush)

In August of 2006, an overlay district was created and amended to the Fulton County zoning ordinance for the 40,000 acres of the Chattahoochee Hill country that make up south

²⁰ Perry, Val, *Lake Lanier Water Quality* (Presented at the Proceedings of the 2005 Georgia Water Resources Conference, April 25-27, 2005).

²¹ *Id.*

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Fulton County.²² The purpose of the overlay district is to: “protect the natural areas of the
Chattahoochee Hill Country and ensure responsibly planned economic and social growth.”²³

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The amended ordinance permits three types of development in the Hill country including Hamlets, Villages and Conservation Subdivisions. All three development types have open space requirements to aid in better shaping development in the area.

Requirements	Land Use Zones		
	Village	Hamlet	Conservation Subdivision
Minimum Acreage	500	200	Not Specified
Maximum Acreage	640	Not Specified	Not Specified
Open Space	10%	60%	40%
Non-Residential Development	20%	10%	Not Permitted
Residential Development	60%	30%	60%
Residential Density	14 units per acre	1 unit per acre	1 to 5 units per acre**
** density bonus permitted when more than 40% of land is conserved for open space.			

Source: Chattahoochee Hill Country Overlay District Ordinance

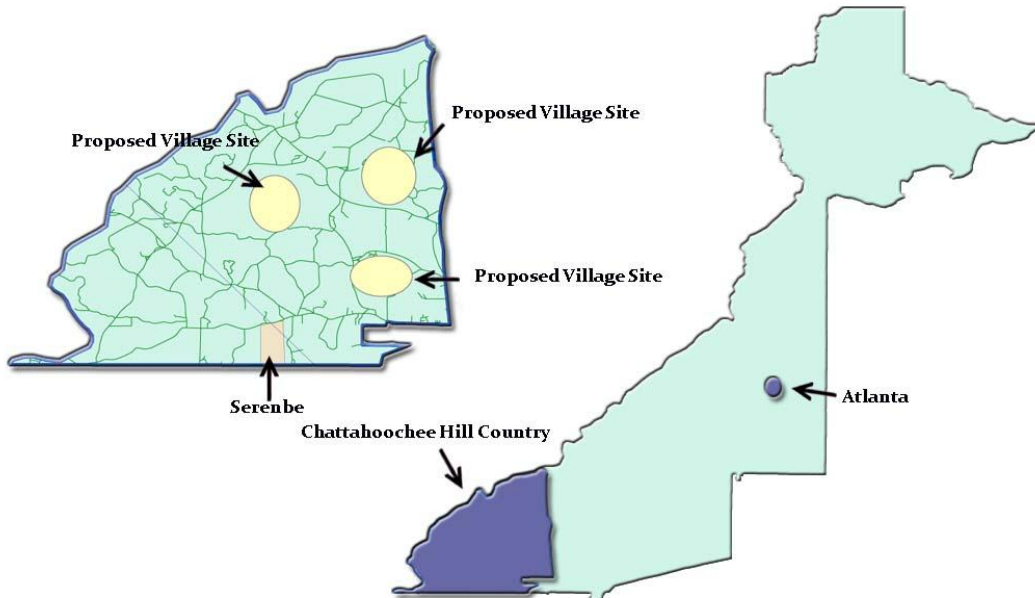
The table above breaks down the parameters set forth for development in the Hill Country under the overlay district ordinance.²⁴ There are three types of residential development zones: Villages, Hamlets, and Conservation Subdivisions. Villages and Hamlets are similar in limitation except Villages are larger. Conservation Subdivisions differ in that only residential uses are allowed. All three have open space requirements. Conservation subdivisions differ from the other two in that only residential development may occur; the other two allow for a mix of uses and encourage live/work space in residential units. Below is a map of the Chattahoochee

²² *Chattahoochee Hill Country*, Chattahoochee Hill Country Overlay District, August 2006, (<http://www.chatthillcountry.org/SusDev/Ordinances.htm>)

²³ Ibid.

²⁴ Ibid.

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Hill Country within Fulton County. On the map the existing developed hamlet, Serenbe, is shown along with three proposed village sites.



source: www.chatthillcountry.org

A. Serenbe: A Case Study in Cluster Development

Serenbe is located in south Fulton County in the Chattahoochee Hill Country. The development patterns allowed in the Hill Country differ from typical rural development land use patterns where acreage is divided into equal-sized parcels connected by streets. This layout creates a very uniform distribution of homes and usage of the entire land area.

The layout at Serenbe is non-uniform. Serenbe is a 900-acre development limited to roughly 220 homes and other commercial building space, where 60 percent of the land is devoted to open space.²⁵

²⁵ Serenbe Community, *Sustainability*, 2008, (<http://www.serenbecommunity.com/sustain.html>)

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The pictures below provide a visual example of cluster development. It's pretty

straightforward. All the developed land uses are clustered together with the surrounding acreage serving as an undeveloped green buffer.



Source: www.serenbecommunity.com

B. Cluster Development for the Atlanta Metro Region

Cluster development clearly will benefit the Chattahoochee Hill Country in preserving much of the untouched land in southern Fulton County. It can also benefit more developed areas in the Metro Atlanta Region.

County	Annual Rate Developed, 2003-2005 (Acres)	Years Until Land Exhausted
Fulton	7197	15
Coweta	6210	31
Gwinnett	6005	12
Henry	6001	17
Cherokee	5996	29
Forsyth	5674	12
Paulding	4876	27
Cobb	3540	10

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Douglas	2770	24
Fayette	2595	21
Clayton	2078	9
Rockdale	1534	27
Dekalb	1343	22
Total	55819	20

Source: Atlanta Regional Commission “Land Development in the Atlanta Region”

The table above, taken from Atlanta Regional Commission data, shows the rate of land development for counties in the Atlanta metro area.²⁶ The rate of development was calculated based on the average amount of undeveloped land that was developed annually over a period of three years from 2003 to 2005. Also projected is the year when all currently undeveloped land will be exhausted. Basically, if we continue to develop at the same rate, all undeveloped land will be exhausted in 30 years.

C. ENGINEERING A CLUSTER SYSTEM (Phillip Blaiklock)

The *Georgia Department of Human Resources* regulates public health, and issues permits for both individual septic systems and clusters. It defines an *Experimental On-Site Sewage Management System* as “any on-site sewage management system proposed for testing and observation, and provisionally accepted for such purposes by the Department’s technical review

²⁶ Broadcast Atlanta, *DeKalb’s Developable Land Exhausted in 2*, March 2007, (http://www.broadcastatlanta.com/index.php?option=com_content&task=view&id=3640&Itemid=2816)

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committee. Any limitations to the use of experimental systems shall be decided by the
Department’s technical review committee.”²⁷ Group #2

Serenbe’s system certainly fits this bill. It “consists of primary treatment tanks located at each home and constructed subsurface-flow wetlands coupled with recirculating sand filters and UV disinfection.”²⁸ The wetlands blend into a park area straddling hiking trails in a nearby forest. Steve Nygren, the founder of the development, boasts that “people love it. And they don’t even realize what it is at first. They can go completely through it and then say, ‘What was that back there?’ ‘Oh, that’s our wastewater treatment.’”²⁹

Lastly, reclaimed water is piped back into toilets, and also returned for landscaping and pasture irrigation.

Harbour Point, another private development, takes a similar approach. Directly on the sloping shores of Lake Lanier, each resident is responsible for maintaining their unit’s 1500-gallon tank. The septic tanks tie into a gravity collection system, which flows to a pumping station. Effluent pumps provide an additional safety factor to protect the dispersal field.”³⁰ In this case, water is available to the lake – and in the current drought situation, every little bit helps.

While the costs of this and Serenbe’s cluster system were unavailable, Orenco Systems International have installed numerous cluster systems using similar technologies. Based on the

²⁷ Rules Of Department of Human Resources Public Health, Chapter 290-5-26: On-Site Sewage Management Systems, § 10.

²⁸ Saunders, Mark, *Decentralized Evolution*, Onsite Water Treatment, January-February 2007 (http://www.gradingandexcavation.com/ow_0801_decentralized.html)

²⁹ *Id.*

³⁰ Infiltrator Systems, *Community Septic System Includes High Capacity Infiltrator® Chambers* (Press release) (http://www.infiltratorsystems.com/pdfs/CS7_Harbour%20Point_0605.pdf)

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firm’s published case studies, costs per-dwelling average about \$10,000 in inflation-adjusted terms.³¹ This is competitive with the cost of an individual septic system.

III. Statute Implementation and Financing (Patrick Bradshaw)

The goal of this paper’s proposal is to foster the development of cluster septic systems as a tool to allow developers to create subdivisions that conserve land by clustering housing units on smaller lots. Such systems are relatively rare at this point in the state of Georgia, and more costly than conventional septic sewer systems. Georgia’s one local example of such a system, as mentioned earlier, is Serenbe in south Fulton County. The proposal seeks to make it easier for developers to build cluster septic systems by providing financial relief for their construction costs and associated fees. It provides this relief to a 5 county pilot area, representing some of metro Atlanta’s fastest growth in single family housing units. Lastly, it provides planning assistance to these counties in order to maximize effectiveness.

A. Incentive Proposal

The proposal outlined in this section emphasizes the creation of financial incentives to encourage subdivision developers to install on-site cluster septic/treatment systems (commonly referred to as small diameter sewers in the waste treatment industry).³² Since such systems use sealed septic tanks and send wastewater to a centralized natural treatment facility, such as constructed wetlands, the need for larger lot sizes can be circumvented, thusly conserving land though the clustering of development. Cluster septic systems are slightly more complicated than traditional septic systems, and therefore cost somewhat more to implement. Whereas both liquids

³¹ Orenco Systems, *Orenco Systems: Decentralized Wastewater Systems (STEP Systems) – Case Study* (http://www.orenco.com/ccs/ccs_caseStudy.asp)

³² Crites, Ron, and George T. Small and Decentralized Wastewater Mangement Systems. Boston: WCB McGraw-Hill, 1998. 347-348

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and solids are held in a traditional septic system, only the solids are held in a cluster system, which uses watertight septic tanks. Tanks are also outfitted with a small electric pump, which moves liquids from the tank to a small diameter collection line. This line will use either gravity or additional pumps to send effluent to a treatment facility (on-site constructed wetlands in Serenbe’s case).³³ The need for pumps, effluent collection lines, specialized septic tank design and on-site treatment facility increase the cost of cluster septic systems. These systems are also relatively new in the United States, having only been around here for roughly three decades.³⁴ These factors necessitate the need for incentives for developers to both try a technology in which they may not be familiar with and to soften the increased costs of such systems, especially if such systems are mandated in certain areas.

The proposal put forth has two developer targeted financial incentive components: developer access to low interest loans for the capital costs involved in constructing cluster septic systems, and a reimbursement program to help defray the costs of site review and permitting for such systems, both of which will be discussed in detail below. Because cluster systems can facilitate the development of conservation subdivisions, a pilot area is also envisioned, consisting of the 5 metro Atlanta counties (Fulton, Gwinnett, Cobb, Henry and Forsyth) with the most growth in new single family housing unit construction in the last 7 years.³⁵ Financial assistance would only be available to developments within the pilot area. Lastly, assistance for counties in the pilot area to help craft a conservation subdivision plan, which will help counties identify land conservation goals, choose areas to encourage conservation subdivisions which utilize cluster

³³ Crites 350

³⁴ Crites 348

³⁵ Atlanta Regional Commission Website. *Population and Housing Data*. Accessed April 3rd 2008. Available at

<http://www.atlantaregional.com/documents/Housing07.XLS>

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septic systems, and develop a uniform zoning designation to mandate the construction of cluster systems identified conservation areas.

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B. Funding Sources

Developer financial assistance for the proposal will originate from an attached agency of the Georgia Department of Community Affairs, the Georgia Environmental Facilities Authority (GEFA). GEFA's mission is "to provide financing and other support services for infrastructure improvements, land conservation, energy programs, and fuel storage systems that result in a cleaner environment for all Georgians".³⁶ Specifically, financial assistance will originate from an existing GEFA program: the Georgia Fund.

The Georgia Fund consists of six financing mechanisms: a permanent loan program for water and sewer projects, a construction loan program providing interim financing for applicants with a known source of permanent financing, environmental emergency loans for projects designed to mitigate immediate public health hazards, public sewer system grants for the construction of public sewer systems, a water reuse grant program for water recycling projects in coastal Georgia counties and solid waste loans to aid in the construction of landfills.³⁷ The proposal envisions utilizing the Georgia Fund's permanent loan program and the public sewer system grant program, though adjustments in current GEFA policy will be necessary.

The GEFA Georgia Fund permanent loan program provides a revolving loan pool for the construction drinking water, sewer and sewer treatment facilities. The program has dispersed

³⁶ Georgia Environmental Facilities Authority Webpage. *Vision and Mission Statement*. Accessed April 3rd 2008

Available at <http://www.gefa.org/Index.aspx?page=28>

³⁷ Georgia Environmental Facilities Authority Webpage. *Georgia Fund Loan Program*. Accessed April 3rd 2008

Available at <http://www.gefa.org/Index.aspx?page=78>

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more than \$2 billion for such projects since 1985.³⁸ Loans dispersed under the program have a maximum amortization period of 20 years and have a fixed interest rate which mirrors the current state 20 year general obligation bond issue.³⁹ Currently, rates for Georgia Fund loans are 4.1%.⁴⁰ For fiscal year 2009, \$42 million is programmed for the Georgia Fund permanent loan program.⁴¹ The proposal envisions allowing developers to petition GEFA directly for loans for construction of cluster septic systems. As mentioned earlier, GEFA policy will need to be changed to allow GA Fund permanent loan program funds to be awarded directly to developers, as it currently only allows locally qualified governments to apply for funds.⁴² Uniform standards and regulations which locally qualified governments currently must follow to be eligible funds can also be applied to developers to ensure a fair awards process amongst developers.

GEFA's public sewer system grant program currently provides one time grants of up to \$100,000 for small communities that own or operate a water system so that they may build or expand a public sewer system. Currently \$500,000 is allotted for fiscal year 2009 for the program.⁴³ This paper's proposal calls for allowing this existing funding source to be utilized for reimbursing counties within the pilot area so that they may waive permitting and site review fees

³⁸ Georgia Environmental Facilities Authority Webpage. *Permanent Loans*. Accessed April 3rd 2008 Available at <http://www.gefa.org/Index.aspx?page=148>

³⁹ Georgia Environmental Facilities Authority Webpage. *2007 GA Fund Loan Program Policies*. Accessed April 3rd

2008. Available at <http://www.gefa.org/Modules/ShowDocument.aspx?documentid=67>

⁴⁰ Georgia Environmental Facilities Authority Webpage. *Loan Rates*. Accessed April 5th 2008 Available at <http://www.gefa.org/Index.aspx?page=323>

⁴¹ Governor's Office of Planning and Budget. *Governor's Budget Report, Fiscal Year 2009*. Pg 111.

⁴² Georgia Environmental Facilities Authority Webpage. *2007 GA Fund Loan Program Policies*. Accessed April 5th

2008. Available at <http://www.gefa.org/Modules/ShowDocument.aspx?documentid=67>

⁴³ Georgia Environmental Facilities Authority Webpage *Public Sewer System Grants* Accessed April 5th 2008.

Available at <http://www.gefa.org/Index.aspx?page=151>

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for developers of cluster systems. Changes necessary to the program include allowing funds to be used for permitting/site review reimbursements and to be limited to the 5 county pilot area. Both the loan and fee reimbursement element of the program are to be implemented as a pilot program with a fixed lifespan of five years. At the end of the pilot, the policy will be evaluated by GEFA to determine whether or not it should be expanded or abandoned.

As mentioned earlier, the proposal calls for a conservation subdivision plan, which will guide policy and identify high priority areas in which cluster septic systems will be mandated. The proposal calls for the pilot area counties to coordinate with the North Georgia Water Planning District to create such a plan. The NGWPD “establishes policy, creates plans and promotes intergovernmental coordination of all water issues in the district from a regional perspective”.⁴⁴ Currently there is \$300,000 budgeted in fiscal year 2009 for an update for district water plans.⁴⁵

C. Staffing and Work Programming

Most staffing/work programming needs should be already budgeted. Pilot area counties already have staff to perform site inspections for permitting and site review. GEFA currently has staff which could handle application processing and review for incoming developer loan proposals, just as they currently do for municipalities and counties under current policy. The budgeted \$300,000 for the NGWPD will cover the cost of developing a water plan for the 5-county pilot area, and all pilot area counties have planners on staff to coordinate with.

⁴⁴ North Georgia Water Planning District Webpage. *About Us* Accessed April 5th 2008 Available at

<http://www.northgeorgiawater.com/html/aboutus.htm>

⁴⁵ Governor’s Office of Planning and Budget. *Governor’s Budget Report, Fiscal Year 2009*. Pg 285.

IV. LEGAL VIABILITY OF MANDATING CLUSTER SYSTEMS (Rob Garner)

A statute mandating the use of cluster septic systems in larger developments will likely be constitutional because it is a valid exercise of a state’s police power. Courts considering the legal viability of mandated cluster septic systems will first look to existing law – constitutional, statutory, and case law – to reach a decision. Private property rights in Georgia are governed by the U.S. Constitution, the Georgia Constitution, federal and state statutes and regulations, local ordinances, and case law interpreting all of the above. Additionally, courts would likely uphold rezoning legislation that mandates cluster developments in certain areas.

A. General Background in takings claims

Before examining a property owner’s potential challenge of a statute that mandates cluster systems, some legal background should be provided.

1. Constitutional

The most likely assault on a regulation or ordinance regulating the use of land will stem from alleged violations of constitutional rights. The U.S. Constitution created private property rights for every individual in the form of the 5th Amendment. Private property receives additional protection from the due process clause of the Constitution. In Georgia, the state constitution mirrors the 5th Amendment to the U.S. Constitution, stating that private property “shall not be taken or damaged for public purposes without just and adequate compensation being first paid.”⁴⁶ And some have noted that Georgia courts require a higher standard for due process than the U.S. Constitution, which permits local governments less flexibility in regulating land use.⁴⁷

⁴⁶ GA CONST Art. 1, § 3.

⁴⁷ MELVIN B. HILL, JR., THE GEORGIA STATE CONSTITUTION: A REFERENCE GUIDE 33.

2. Methods to challenge a government’s regulation of land.

Property owners can challenge land regulations with a variety of methods. The most notable is to declare a “taking” has occurred. But other methods can achieve equal success, such as alleging a violation of due process or equal protection. Characteristically, land use regulation is divided into two categories: quasi-judicial and quasi-legislative decisions. In quasi-judicial decisions, the property owner’s options are more numerous and have a greater chance of success. Courts, being judicial forums themselves, are less loathe to intrude into local governments’ regulation of land on a case-by-case basis. But in quasi-legislative schemes, courts normally provide the law with a “presumption of validity.” Consequently, the property owners are either limited to challenging the statute on its face, which is very difficult, or must challenge the statute “as-applied”, where it may be pushed into a quasi-judicial scheme. In all “as-applied” actions, the property owner must ensure a “final decision” has been reached.

In a traditional 5th Amendment taking, the landowner must establish that property was “taken ... that the regulation goes too far.”⁴⁸ Successful landowners can seek money damages, which are calculated based on the “value of the property taken and the duration of the taking.”⁴⁹ In most cases, a final decision is needed that demonstrates how the zoning ordinance, as applied to the property, is a “taking.”⁵⁰ Prior to a final decision, the landowner must follow all the “state procedures which provide for obtaining just compensation.”⁵¹ An example of a taking claim

⁴⁸ Eide v. Sarasota County, 908 F.2d 716, 720-721 (11th Cir. 1990).

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

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occurred in *Penn Central*, when an application to construct a high rise building was denied due to the property’s registration as an historical site.⁵² Group #2

In other instances, land owners may declare that a violation of due process has occurred. These claims can be broken down into two categories: procedural and substantive.⁵³ Procedural due process claims rarely succeed because local governments are usually proactive in developing the procedures needed to satisfy due process. In cases of substantive due process, the land owner is either challenging the application of the ordinance to the property in question, or the statute itself.⁵⁴ If the land owner challenges the statute as a whole, then no final decision is required. But if the landowner challenges the application of the statute to his property, the most common form of due process challenge, then a final decision must be reached. Whether or not a final decision has occurred is a question of law for the court. Remedies include money damages and possibly an invalidation of the statute, as opposed to “just compensation takings” claims where only money damages are allowed.⁵⁵

When challenging the statute as applied, property owners usually alleged that the local government acted “arbitrarily and capriciously.”⁵⁶ The property owner must demonstrate that the statute “does not bear a substantial relation to the public health, safety, morals, or general welfare, and is therefore an invalid exercise of the police power.”⁵⁷ The remedies available are

⁵² Penn. Central Transportation Co. v. New York City, 438 U.S. 104 (1978).
⁵³ Eide v. Sarasota County, 908 F.2d 716, 721 (11th Cir. 1990).
⁵⁴ *Id.*
⁵⁵ *Id.*
⁵⁶ *Id.* at 722.
⁵⁷ *Id.*

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either a complete invalidation of the statute, or, in as applied cases, an injunction against the
application of the statute.⁵⁸ Again, a final decision is required.

The last method to challenging a land use regulation is to claim a violation of equal protection. The regulation must involve a “fundamental right” or a “suspect class.” Courts apply strict scrutiny in these claims, which increases the chances of success for credible equal protection claims.

B. Georgia law

In Georgia, courts consider three key questions when deciding whether a taking has occurred.⁵⁹ First, does the statute authorize a “permanent physical ... occupation of plaintiff’s property by another” or does it merely regulate its use? If the answer to this question is “yes,” then a taking has occurred.⁶⁰ If the answer to the first question is “no,” then Georgia courts next determine whether the regulation is a valid exercise of the “police power.” Finally, courts utilize a balancing test, comparing the public benefit attained by the statute to the harm the statute causes to the individual property owner.⁶¹ The property owner has the burden to demonstrate that his harm outweighs the overall public benefit.⁶²

1. Parking Ass'n of Georgia, Inc. v. City of Atlanta

In *Parking Ass'n of Georgia*, the City of Atlanta passed an ordinance affecting certain commercial property owners with 30 or more parking spaces.⁶³ The ordinance required more greenery to be added to barren parking lots, such as shrubs or ivy, and “at least one tree for every

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Id.

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Parking Ass'n of Georgia, Inc. v. City of Atlanta, 450 S.E.2d 200, 202 (Ga. 1994).

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Id.

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Id.

⁶²

Id.

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Parking Ass'n of Georgia, Inc. v. City of Atlanta, 450 S.E.2d 200, 201 (Ga. 1994).

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eight parking spaces.”⁶⁴ The purpose of the ordinance was to “improve the beauty and aesthetic appeal of the City.”⁶⁵ The Supreme Court of Georgia stated that the required greenery did not constitute a permanent physical occupation, so the burden was on the property to show that his financial harm – a loss of parking – outweighed the ordinance’s benefits. The Court denied the property owners’ suit, explaining:

Plaintiffs failed to present clear and convincing evidence that the ordinance presents a significant detriment. Plaintiffs may experience a loss of profits due to a reduction in the number of available parking spaces and the costs of compliance; however, a zoning ordinance does not exceed the police power simply because it restricts the use of property, diminishes the value of property, or imposes costs in connection with the property ... [i]t is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well-balanced as well as carefully patrolled.⁶⁶

2. Greater Atlanta Homebuilders Ass’n v. Dekalb County

Homebuilders involved a facial challenge to a tree ordinance statute. Property owners, representing developers, declared the tree ordinance violated the state’s Zoning Procedures Law and violated due process because it was devoid of any usable standards.⁶⁷ Dekalb County enacted the tree ordinance to “provide proper and sufficient regulation of the removal and/or replacement of trees as part of land development.”⁶⁸

The Supreme Court of Georgia dismissed the first complaint, stating that the tree ordinance did not have to conform to the Zoning Procedures Law because it applies to all of Dekalb County, rather than certain zones or districts.⁶⁹ For an ordinance to fall under the requirements of the Zoning Procedures Law, it must “establish procedures and zones or districts

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Id.

⁶⁵

Id.

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Id. at 202-203.

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Greater Atlanta Homebuilders Ass’n v. Dekalb County, 588 S.E.2d 694 (Ga. 2003).

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Id. at 695.

⁶⁹

Id.

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... which regulate the uses and development standards of property within such zones or districts.”⁷⁰ Therefore, Dekalb County did not have to follow the statute, which defined the minimum standards of due process.

Next, the property owners challenged the statute as a taking on its face. The Court noted that the property owners would have to demonstrate that the “ordinance does not substantially advance legitimate state interests ... or denies an owner economically viable use of his land.”⁷¹ Since the property owners did not raise the first issue, illegitimate state interests, the Court focused on the second issue, economic viability of land use. First, the Court admitted that the property owners had to incur some additional costs to comply with the ordinance.⁷² But the Court stated that many regulations require additional costs, and there was no exceptional requirement in the tree ordinance.⁷³ Also, the Court rejected the property owner’s use of *Dolan v. City of Tigard*. *Dolan* involved an “as-applied challenge”, while the property owners were attacking the statute on its face.⁷⁴

Finally, the court dismissed the due process claim because it was not ripe for review. Since the complaint was based on ascertainable standards, the Court wanted to see how the statute applied on a case by case basis before invalidating it.⁷⁵ Consequently, the Court upheld Dekalb County’s tree ordinance.

3. Georgia law applied to mandated cluster septic systems

⁷⁰ *Id.* at 696.

⁷¹ *Id.*

⁷² *Id.* at 697.

⁷³ *Greater Atlanta Homebuilders Ass’n v. Dekalb County*, 588 S.E.2d 694, 697 (Ga. 2003).

⁷⁴ *Id.*

⁷⁵ *Id.* at 698.

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While there is no Georgia case on point – nor any case in the nation on point – that decides the legality of mandated cluster septic systems, it is likely that such an ordinance would be upheld. The burden of a challenge to such a statute would be on the property owner and the Court must consider three questions. First, would the statute constitute a per se taking, such as a permanent intrusion onto private property in the form of an easement? This is highly unlikely to be the case. Second, is this a valid exercise of the State’s police power? Again, this is likely to be upheld because the statute would attempt to: (1) ensure that septic systems are properly maintained; (2) improve the green space and aesthetic beauty of Georgia; and (3) begin to establish requirements for cluster septic systems that recycle water. The previous two Supreme Court cases examined statutes based solely on aesthetic improvements that were easily upheld. Lastly, does the property owner’s injury – losing land value or paying for improvements – outweigh the benefit to the public? As discussed during the previous sections of this report, cluster septic systems are not much more expensive than individual septic systems, so long as each property owner in the development shares equally in the installation and maintenance of the system. Consequently, the cluster system would likely be upheld.

Of course, landowners in other states have challenged regulations involving septic systems with varying degrees of success. Chapter D summarizes some of these cases.

C. Georgia Zoning Law

A law mandating cluster developments, or cluster septic systems, could be challenged as invalid zoning. As a result from an amendment to the state constitution, Georgia follows “home rule.” Home rule dictates that zoning decisions are made at the local level, and a state law that interferes with this principle is invalid. Consequently, laws requiring cluster developments would have to be enacted on a county by county basis. However, state laws that mandate cluster

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septic systems could inadvertently require cluster developments, which, as discussed in the
previous chapter, would be a valid exercise of the police power.

Georgia courts would likely uphold cluster zoning that is designated at the local government level, since the state constitution gives local governments' wide latitude in land use. Several cases serve as examples. For instance, the Georgia Supreme Court stated in a 1960 case that "[u]nder constitutional and statutory provisions, [the] Board of Commissioners of Fulton County have complete freedom to create any number of zones and districts and of such size and shape as they may arbitrarily choose."⁷⁶ *Vulcan* was overruled to the extent that it permitted spot zoning.⁷⁷ Additionally, zoning is a legislative function, which means that it "is presumed to be valid."⁷⁸

D. Cases involving Septic Systems

1. General problems with improperly maintained septic systems

Rural property owners have used septic systems for over 100 years. *Loughridge* provides an example of the problems caused by improperly maintained septic systems. The City of Dalton failed to maintain its septic systems, negatively impacting a nearby farmer. The wastes were dumped into a previously clean spring that flowed through the farmer's lands. The farmer's account of the damages demonstrates why septic systems should be properly maintained:

All kinds of filthy, fecal matter flow from said tank and empties into the branch, which empties into the creek within a short distance from petitioner's home, whereby the waters of the creek are made extremely filthy. The odors from it are such that petitioner cannot enjoy his home. His meadow is ruined. The waters in the small branch are slow and sluggish, and the filthy matter hangs to the grass and reeds along its banks and

⁷⁶ *Vulcan Materials Co. v. Griffith*, 114 S.E.2d 29 (Ga. 1960).

⁷⁷ *East Lands, Inc. v. Floyd County*, 262 S.E.2d 51 (Ga. 1979).

⁷⁸ *Hall Paving Co. v. Hall County*, 226 S.E.2d 728, 729 (Ga. 1976).

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accumulates in pools and adheres to the rocks, and when it rains and flushes the branch this filthy matter spreads out over the meadow and ruins the hay, etc.⁷⁹

2. Decisions upholding septic regulations

a. Sustaining a Septic System setback from wetlands.

In *Boulders*, a developer asserted that a zoning ordinance that required septic systems to be set back a certain distance from wetlands “was unconstitutional on its face *and* as applied.”⁸⁰

Boulders submitted a development plan to the Stafford Planning Board for approval with two alternative designs.⁸¹ Both designs required the use of septic systems, with one design permitting 58 subdivided lots and the other permitting 66 subdivided lots.⁸² One plan was a conventional development and the other was a “conservation/open space proposal.” The conservation proposal required a variance for 25 of the 66 lots. The Board expressed preference for the conservation proposal and urged Boulders to seek a variance for the project.⁸³

Boulders sought a variance to permit septic systems to be placed up to 75 feet from the wetlands.⁸⁴ The zoning ordinance required varying setbacks for septic systems; the steeper the slope, the greater the setback. Setback distances started at 100 feet and went up to 200 feet.⁸⁵ The zoning board of adjustment disapproved Boulder’s request and, instead of appealing the

⁷⁹ Loughridge v. City of Dalton, 143 S.E. 393 (Ga. 1928); Morris v. Douglas Board of Health, 561 S.E.2d 393 (Ga. 2002).

⁸⁰ Boulders at Strafford, LLC v. Town of Strafford, 903 A.2d 1021 (N.H. 2006) (emphasis added).

⁸¹ *Id.* at 1024.

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ Boulders at Strafford, LLC v. Town of Strafford, 903 A.2d 1021, 1024 (N.H. 2006).

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denial, Boulders immediately sued in Superior Court, claiming the statute was unconstitutional.⁸⁶ Group #2

The Superior Court heard expert testimony and ruled in favor of Boulder. The Town appealed.

The Supreme Court of New Hampshire examined whether the Town validly exercised its police power when passing the ordinance.⁸⁷ The Court noted that New Hampshire uses the “rational basis test,” requiring a two part test. First, the Town’s goal must be legitimate. Second, the means to accomplish a legitimate goal must be rationally related to the goal. The trial court had invalidated the ordinance because all the experts testified that the Town’s goal could be accomplished with a minimum setback of 75 feet.⁸⁸ The Supreme Court stated that the trial court improperly applied a strict scrutiny test, which would invalidate the ordinance if the setbacks could have been “more narrowly tailored.”⁸⁹ Under the rational basis test, the Court “will not invalidate” an ordinance “merely because there are less restrictive means of accomplishing the same end.”⁹⁰ Instead, Boulder had to demonstrate that “there is *no substantial relationship* between the ordinance and health safety morals or general welfare of the community.”⁹¹

The Court remanded the case for a new trial based on the standards described.⁹² The Court also noted that there “are many reasons besides scientific data that a town could posit to justify its zoning ordinances,” such as aesthetics, safety, and planning.⁹³

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Id.

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Id. at 1025.

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Id.

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Id. at 1026.

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Boulders at Strafford, LLC v. Town of Strafford, 903 A.2d 1021, 1027 (N.H. 2006).

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Id.

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Id. at 1030.

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Id.

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- b. Sustaining denial of construction permit for addition to lakeside cabin based on poor condition of the septic system.

In *Christianson*, the plaintiff's application for a building permit was denied due to an inadequate septic system.⁹⁴ The Christiansons' purchased a small cabin in the mountains, located on a steep slope, and proceeded to construct an addition to the cabin.⁹⁵ Their building permit was denied because their septic system had "inadequate setback from the lake shoreline, inadequate separation from one or more domestic wells, inadequate vertical separation above the seasonal high water table, inadequate reserve area, and unsuitable soil conditions."⁹⁶ The Christiansons' accepted the findings, but challenged the denial of a waiver from the onsite sewage regulations as a violation of due process.

First, the Christiansons' alleged that under *Dolan*, the State has the burden of proving that the health regulations do not violate due process.⁹⁷ The Washington Supreme Court distinguished *Dolan*, noting that the burden of proof only shifts to the State if the State acquires a "property interest" in return for approving a permit (note that the Georgia Supreme Court distinguished *Dolan* as only applying in "as-applied" cases, but here the Washington Supreme Court further distinguished *Dolan*).

Second, under due process, the Washington Supreme Court utilized a three prong test that was similar to a takings analysis. The court had to determine "(1) whether the regulation is aimed at achieving a legitimate public purpose; (2) whether it uses means that are reasonably

⁹⁴ Christianson v. Snohomish Health Dist., 946 P.2d 768, 769-772 (Wash. 1997).

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ *Id.* at 774.

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necessary to achieve that purpose; and (3) whether it is unduly oppressive on the land owner.”⁹⁸ Group #2

The Court treated the Christiansons’ property as a nonconforming use and dismissed the Christiansons’ arguments to the contrary.

Consistently, zoning policy is against the indefinite extension of nonconforming uses. The public effort is not to extend a nonconforming use but rather to permit it to exist as long as necessary and then to require conformity in the future. Indeed, the public intent is the eventual elimination of nonconforming uses. It is only to avoid injustice that zoning ordinances generally except existing nonconforming uses.⁹⁹

The Court then determined whether the Christiansons’ had a valid argument under the third prong of the test – whether the regulation is unduly oppressive on the landowner.¹⁰⁰ Again, the Court decided against the Christiansons. Courts have discretion when balancing the interests of the landowner against the public interest and may consider factors like “the nature of the harm sought to be avoided; the availability and effectiveness of less drastic protective measures; and the economic loss suffered by the property owner.”¹⁰¹ The Court balanced these interests on the public side, considering “the seriousness of the public problem, the extent to which the owner’s land contributes to it, the degree to which the proposed regulation solves it and the feasibility of less oppressive solutions would all be relevant.”¹⁰² The Court concluded that the Christiansons’ failed to demonstrate a violation of due process.

3. Regulation requiring more open space

One of the purposes of a law requiring cluster subdivisions would be to increase the amount of available open space. Hopefully other reasons would be employed because, based on the decision in *Bailes*, this reason alone may not be sufficient to avoid scrutiny by the courts. In

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Id.

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Id. at 775.

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Christianson v. Snohomish Health Dist., 946 P.2d 768, 776 (Wash. 1997).

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Id.

¹⁰²

Id.

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Bailes, the Court invalidated an ordinance that limited the development of property owners' lands to "one unit per six acres or one unit per three or three-and-a-half acres under a **cluster** option."¹⁰³ Consequently, the "constraints of septic systems and aquifers were met under density in prior ordinance ... and there was no environmental constraint or other legitimate reason to create open space by restrictive zoning."

V. Clustered Development Model and Onsite Wastewater Treatment Systems (Yakov Shteyman)

Onsite and clustered wastewater treatment systems are growing in popularity around the country due to the numerous benefits of such systems.¹⁰⁴ A major benefit of implementing an onsite treatment system is the flexibility of developing communities in areas where connection to a public sewer is not feasible.¹⁰⁵ Additionally, implementing this type of system is a cheaper alternative in many circumstances where public sewer is not easily accessible.¹⁰⁶ Likewise, as our precious land resources are being exhausted, the clustered development model is also gaining popularity as a way to develop land in a way that not only maximizes this resource, but also preserves it.¹⁰⁷ Typically, development of suburban and rural areas takes the form of the subdivision model which causes "splitting wide open spaces into fragments that are useless for agriculture, wildlife habitat, or other rural open space purposes."¹⁰⁸ Cluster development, on the other hand, concentrates dwelling units on the most buildable portion of the site and preserves

¹⁰³ *Bailes v. Township of East Brunswick*, 882 A.2d 395, 396-398 (N.J. App. Div. 2005).

¹⁰⁴ *See* Response To Congress On Use of Decentralized Wastewater Treatment Systems, EPA (April 1997).

¹⁰⁵ *See id.*

¹⁰⁶ *See id.*

¹⁰⁷ *See id.*

¹⁰⁸ Gary Pivo, Robert Small, & Charles R. Wolfe, *Rural Cluster Zoning: Survey and Guidelines*, Land Use Law (September 1990).

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natural drainage systems, vegetation, open space, and other significant natural features that help control stormwater runoff and soil erosion.¹⁰⁹ The benefits of developing areas using the clustered development model and the availability of onsite wastewater treatment systems capable of handling this type of development in areas where public sewer is unavailable makes the combination of these two options a smart move.¹¹⁰

A. Regulation of Onsite Wastewater Treatment Systems

Large-capacity septic systems (LCSSs) capable of partially treating and disposing of sanitary water and serving 20 or more persons per day are classified as Class V underground injection wells.¹¹¹ Typically, these LCSSs are configured for each site to fit the characteristics of the given terrain and usage.¹¹² Given the increased usage of LCSSs and their impact on the environment, the government, both at the federal and local levels, have a great interest in regulating the implementation and maintenance of these wastewater treatment systems. The federal government, through the Environmental Protection Agency, has conducted numerous studies on the impact of LCSSs on the environment and has promulgated rules, regulations, and best management practices relating to the implementation of these types of systems.¹¹³

At the Federal level, the United States Environmental Protection Agency is empowered with the authority to regulate activities which affect public health and the natural environment.¹¹⁴ The EPA, in addition to setting and enforcing environmental standards, delegates some functions

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Id.

¹¹⁰

See Response To Congress On Use of Decentralized Wastewater Treatment Systems, EPA (April 1997).

¹¹¹

United States Environmental Protection Agency, EPA 816-R-99-014e, The Class V Underground Injection Control Study (1997).

¹¹²

Id.

¹¹³

See id.

¹¹⁴

9 Ga. Jur. Environmental Law § 8:5 (2007).

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directly to individual states.¹¹⁵ In fact, a number of environmental statutes give states the option of either enacting laws which at least meet the minimum federal requirements or simply be preempted by the federal laws.¹¹⁶ This option is very beneficial because it allows each state to tailor its regulatory programs to meet the individual needs of that state. Georgia is one of many states which have chosen this option.¹¹⁷

Federal laws which govern and regulate LCSSs include the Federal Water Pollution Control Act Amendments of 1972 (amended in 1977 to become what is more commonly known as the Clean Water Act) and the Safe Drinking Water Act of 1974.¹¹⁸ The Ground-Water Protection Strategy is also an effort EPA coordinated between the federal and state governments to protect our groundwater.¹¹⁹

At the state level in Georgia, the Department of Natural Resources (DNR) through its Environmental Protection Division (EPD) and the Department of Human Resources' Division of Public Health are empowered with the authority to oversee and regulate onsite and clustered wastewater treatment systems.¹²⁰ Georgia laws which govern and regulate these systems include the Georgia Water Quality Control Act and the Safe Drinking Water Act. Further, onsite wastewater systems are also subject to rules and regulations promulgated by EPD and DHR.

¹¹⁵ 9 Ga. Jur. Environmental Law § 8:6 (2007).

¹¹⁶ *See New York v. U.S.*, 505 U.S. 144, 112 S.Ct. 2408 (1992).

¹¹⁷ *See e.g.*, O.C.G.A. § 12-2-3(4) (stating that the Department of Natural Resources shall “establish and maintain perfect cooperation with any and every agency of the federal government interested in or dealing with the subject matter of the department), *see also* 9 Ga. Jur. Environmental Law § 8:11 (2007).

¹¹⁸ 33 U.S.C. 1251 et seq. (1972) and 42 U.S.C. 300f et seq. (1974).

¹¹⁹ *See United States Environmental Protection Agency, A Groundwater Protection Strategy for the Environmental Protection Agency, Office Of Groundwater Protection (1984).*

¹²⁰ 9 Ga. Jur. Environmental Law § 8:16 (2007).

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B. Federal Law and Regulation

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Federal Underground Injection Control Program (UIC) regulations define Large Capacity Septic Systems (LCSSs) as “septic systems serving 20 or more persons per day and that are designed to receive, treat, and dispose of solely sanitary wastes.”¹²¹ “Septic wells used to inject the waste or effluent from multiple dwelling, business establishment, community or regional business establishment” fall under the federal regulations of Class V wells.¹²² The UIC program under the Safe Drinking Water Act is authorized with management and regulation of these systems.¹²³ Whether drafting a wastewater treatment system ordinance or planning to construct a LCSS, reviewing and complying with federal laws, regulations, and rules should be the first step. The Safe Drinking Water Act, the Clean Water Act, and the EPA rules and regulations are the major laws governing LCSSs.

1. Safe Drinking Water Act

Congress passed the Safe Drinking Water Act (SDWA) in 1974 “to protect public health by regulating the nation’s public drinking water supply.”¹²⁴ The SDWA authorizes the EPA to promulgate rules and standards for protection of our nation’s drinking water.¹²⁵ The Act was amended in 1986 and 1996 to increase the scope of the regulations as well as provide funding to support federal and state water programs.¹²⁶

¹²¹ United States Environmental Protection Agency, EPA 816-R-99-014e, The Class V Underground Injection Control Study, p. 4 (1997).

¹²² *Id.*

¹²³ *See id.*

¹²⁴ 42 U.S.C.A. § 300 *et seq.* (2007), *see also* 9 Ga. Jur. Environmental Law § 8:10 (2007).

¹²⁵ *See id.*

¹²⁶ *See id.*

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Under the Act and pursuant to EPA regulations, states are allowed to implement and oversee their own water programs if the states adopt laws and regulations that meet at least the minimum requirements of the federal laws and regulations.¹²⁷ The EPA, in addition to promulgating rules, regulations, and guidance, assist states in implementing safe drinking water programs through various funding grants.¹²⁸ Enforcement of the rules and regulations may come in the form of administrative orders, legal actions, or fines from either the EPA or the individual states.¹²⁹

2. Clean Water Act

The Clean Water Act (CWA), enacted in 1948 and later amended, also governs water pollution.¹³⁰ Like the Safe Drinking Water Act, the Act delegates rulemaking authority to the Environmental Protection Agency.¹³¹ The EPA, in order to effectuate the goals of the Act, has promulgated numerous rules, regulations, and guidance materials. Additionally, the agency sets national standards for water quality and implements numerous pollution control programs.¹³²

C. State Regulation and Law

3. Georgia Department of Natural Resources (DNR)

The Georgia General Assembly created the Department of Natural Resources “to promote the conservation and development of Georgia's natural resources, a more profitable use

¹²⁷ 9 Ga. Jur. Environmental Law § 8:2 (2007).

¹²⁸ *See id.*

¹²⁹ 9 Ga. Jur. Environmental Law § 8:5, 8:6 (2007).

¹³⁰ 9 Ga. Jur. Environmental Law § 8:1 (2007).

¹³¹ 9 Ga. Jur. Environmental Law § 8:2 (2007).

¹³² *See id.*

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of lands and waters, and the development of commerce and industry.”¹³³ The Environmental
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Protection Division (EPD) of DNR is charged with administering numerous state environmental
laws as well as overseeing programs under four federal laws including the Clean Air Act, the
Resource Conservation and Recovery Act, the Safe Drinking Water Act, and the Clean Water
Act.¹³⁴ In order to obtain approval to construct an onsite wastewater treatment system in a
clustered development, the developer must apply to and receive a permit from EPD.¹³⁵

a. “Georgia Water Quality Control Act”

Recognizing “[t]he people of the State of Georgia are dependent upon the rivers, streams,
lakes, and subsurface waters of the state for public and private water supply and for agricultural,
industrial, and recreational uses,” the General Assembly enacted the Georgia Water Quality
Control Act.¹³⁶ The General Assembly declared Georgia’s policy of protecting its water
resources “for the maximum benefit of the people.”¹³⁷ To effectuate this policy, the Act gave the
EPD “the authority to regulate the withdrawal, diversion, or impoundment of the surface waters
of the state, and to require the use of reasonable methods after having considered the technical
means available for the reduction of pollution and economic factors involved to prevent and
control the pollution of the waters of the state.”¹³⁸

b. Rules of Georgia Department of Natural Resources – Title 391

¹³³ 9 Ga. Jur. Environmental Law § 1:3

¹³⁴ See O.C.G.A. § 12-2-2.

¹³⁵ 9 Ga. Jur. Environmental Law § 8:33 (2007).

¹³⁶ O.C.G.A. § 12-5-21.

¹³⁷ O.C.G.A. § 12-5-21(a).

¹³⁸ O.C.G.A. § 12-5-21(b).

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Empowered with this broad rulemaking and enforcement authority, the EPD promulgated the “Water Quality Control” rules which can be found in the Georgia Administrative Code under Title 391.¹³⁹ These rules were promulgated specifically to “establish the organizational and administrative procedures to be followed in administration and enforcement of the Georgia Water Quality Control Act . . . and of the Federal Water Pollution Control Act Amendments of 1972.”¹⁴⁰

The “Underground Injection Control” rules “establish classes of injection wells, prohibitions, criteria and standards applicable to injection wells.”¹⁴¹ These rules regulate, *inter alia*, “Class V septic systems,” which are defined as septic systems that handle sanitary and/or other wastes and have the capacity to serve 20 or more persons a day. These rules also define a “septic system” as “a ‘well’ that is used to emplace sanitary waste below the surface and is typically comprised of a septic tank and subsurface fluid distribution system or disposal system.”¹⁴² Individual septic systems or septic systems that serve fewer than 20 persons a day are not governed by these rules. These smaller systems are governed by rules promulgated by the Department of Human Resources’ Public Health Division.¹⁴³

In order to construct or operate a large capacity onsite clustered water treatment system, the EPD director must issue a permit.¹⁴⁴ In applying for the permit, the applicant must meet stringent requirements and submit a variety of technical documentation, including submittal of a

¹³⁹ See Ga Comp. R. & Regs. 391-3-6.

¹⁴⁰ See Ga Comp. R. & Regs. 391-3-6-.01.

¹⁴¹ United States Environmental Protection Agency, EPA 816-R-99-014e, The Class V Underground Injection Control Study (1997).

¹⁴² See *id.*

¹⁴³ See Ga Comp. R. & Regs. 290-5-26-.01.

¹⁴⁴ See Ga Comp. R. & Regs. 391-3-6-.13(10).

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hydrogeologic determination report prepared by a professional geologist or professional
engineer.¹⁴⁵ Group #2

4. Department of Human Resources' Division of Public Health

The Department of Human Resources is empowered with administering state regulation of individual on-site sewage management systems.¹⁴⁶ Unlike the Environmental Protection Division of the Department of Natural Resources, DHR only oversees and promulgates rules applicable to private, individual on-site treatment systems that handle less than 10,000 gallons per day. The rules require the construction of an approved on-site management system where public or community sewage treatment systems are not available.¹⁴⁷ In addition, DHR establishes minimum requirements for design, siting, and construction of all on-site wastewater systems in the state.¹⁴⁸ These requirements are enforced at the county level through the county Boards of Health.¹⁴⁹ For purposes of implementing onsite wastewater treatments systems in a clustered community, DHR will not have jurisdiction over these systems.¹⁵⁰

D. Implementing Clustered Developments

Faced with population growth and limited land availability, planners are rethinking land use. According to the U.S. Bureau of Census, population grew in metropolitan areas by about 7.5

¹⁴⁵ See Ga Comp. R. & Regs. 391-3-6-.13(11).

¹⁴⁶ See Ga Comp. R. & Regs. 290-5-26-.01 *et seq.*

¹⁴⁷ See Ga Comp. R. & Regs. 290-5-26-.03.

¹⁴⁸ Metro. N. Ga. Water Planning Dist., *Septic Systems and Decentralized Systems*, Long-term Wastewater Management Plan, p. 9-1 (Sept. 2003).

¹⁴⁹ *Id.*

¹⁵⁰ See Ga Comp. R. & Regs. 290-5-26-.01.

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million from 1970 to 1987.¹⁵¹ This type of sprawl causes inefficient consumption of land given the usual subdivision model of development. This subdivision model causes “splitting wide open spaces into fragments that are useless for agriculture, wildlife habitat, or other rural open space purposes.”¹⁵² An alternative to the standard subdivision model is cluster zoning. Cluster zoning offers numerous advantages over conventional subdivision zoning. In *Orinda Homeowners Committee v. Board of Supervisors*,¹⁵³ the Court defined cluster zoning as:

... a device for grouping dwellings to increase dwelling densities on some portions of the development area in order to have other portions free of buildings ... the plan is to devise a better use of undeveloped property than that which results from proceeding on a lot-to-lot basis. Control of density in the area to be developed is an essential part of the plan. The reservation of green, or at least open, spaces in a manner differing from the conventional front or back yard is another ingredient.

To implement the cluster model approach, careful planning and ordinance drafting is essential.¹⁵⁴ From a planning perspective, the municipality, county, or state must consider various factors before deciding on cluster zoning in a particular area.¹⁵⁵ One of these factors includes considering onsite wastewater treatment options if public sewer is not available.

¹⁵¹ U.S. Bureau of Census, Current Population Reports, Series P-25, No. 1039, Patterns of Metropolitan Area and County Population Growth: 1980 to 1987, U.S. Government Printing Office, Washington, DC, 1989.

¹⁵² Gary Pivo, Robert Small, & Charles R. Wolfe, Rural Cluster Zoning: Survey and Guidelines, Land Use Law (September 1990).

¹⁵³ 90 Cal.Rptr. 88, 90 (Cal. App. 1970).

¹⁵⁴ Gary Pivo, Robert Small, & Charles R. Wolfe, Rural Cluster Zoning: Survey and Guidelines, Land Use Law (September 1990).

¹⁵⁵ *See id.*

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Depending on the characteristics of the land, the feasibility of an onsite treatment system may vary. Installing one of these systems is not only expensive for the development but must also meet stringent federal and state environment standards.¹⁵⁶

Further, the decision to zone a particular area to require clustered development “must be based on sound legal and planning principles.”¹⁵⁷ Assessing the “community’s overall goals and objectives for open space preservation and provision of housing types so that these goals can be included in planning documents the precede the cluster ordinance” is vital.¹⁵⁸ Advance planning is essential in insuring the ordinance’s validity if the decision to cluster is later attacked in a legal proceeding.¹⁵⁹

In planning for a cluster program, the drafters must “consider any statutory language regarding cluster ordinances from the enabling authority at the state level.”¹⁶⁰ For example, New York’s enabling law allows local authorities to require cluster development in certain situations.¹⁶¹ Courts have validated cluster ordinances even if the state enabling authority does not specifically authorize clustering.¹⁶² To ensure validity, a cluster ordinance should “restrict only the location of structures on a parcel and not severely impede the overall density of the development.”¹⁶³ Further the ordinance “must set out rules and standards that can be applied to

¹⁵⁶ *See id.*

¹⁵⁷ *See id.*

¹⁵⁸ *See id.*

¹⁵⁹ *See Nollan v. California Coastal Commission*, 483 U.S. 825 (1987) (requiring a showing of a “substantial relationship to a legitimate government interest.”)

¹⁶⁰ Gary Pivo, Robert Small, & Charles R. Wolfe, *Rural Cluster Zoning: Survey and Guidelines*, Land Use Law (September 1990).

¹⁶¹ N.Y. Town. L., §281; N.Y. Vill. L., §7-738; N.Y. Gen. City Law, §37.

¹⁶² Gary Pivo, Robert Small, & Charles R. Wolfe, *Rural Cluster Zoning: Survey and Guidelines*, Land Use Law (September 1990).

¹⁶³ *Id.*

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proposed developments.”¹⁶⁴ An article discussing cluster zoning and ordinance drafting suggests

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that a cluster ordinance “should contain, at minimum, provisions that set out:

1. Application procedures;
2. A statement of minimum parcel size, natural features, or other qualifying parcel characteristics necessary for allowing [or requiring] the use of the cluster approach;
3. A method or calculation for determining the allowable number of dwellings (overall density);
4. Infrastructure requirements for roads and provision of water, sewer, and other utilities;
5. Permitted types of dwellings and design standards, if any;
6. Criteria for establishing dimensions of lots, setbacks, and road frontages; and
7. Perhaps most importantly, specific criteria addressing the location, amount, and use of open space on the parcel, as well as permitted methods for open space ownership and maintenance.¹⁶⁵

In addition, the article recommends provisions that “address specific requirements for affordable units, and/or allowance of a density bonus to developers of cluster projects.”¹⁶⁶ A valid and successful ordinance that achieves the goals of a given community must be drafted very carefully to not only withstand legal attack, but also give guidance and encourage cluster developments.¹⁶⁷

¹⁶⁴

Id.

¹⁶⁵

Id.

¹⁶⁶

Id.

¹⁶⁷

See Model Residential Cluster Development Ordinance, Elements of a Cluster Ordinance, Appendix B.

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E. Elements of a Cluster Ordinance

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After a community decides to implement cluster zoning and identifies areas to be zoned as such, the drafter of the cluster ordinance must take extra care in drafting a good cluster ordinance. Fortunately, there are many resources that assist local authorities in drafting ordinances. One common approach is to look at other communities that implemented similar program. Typically, other jurisdictions' ordinances can be found on Municode.com, a service which compiles ordinances for local governments. Further, there are model ordinances and other guidebooks that offer standard language. When drafting a cluster ordinance the following sections should be included.¹⁶⁸

1. Section 1.0 – Purpose

The purpose section should outline the reasons the cluster ordinance is adopted. This section should also incorporate the goals of the community. For example, a cluster ordinance in Rochester-Olmstead County, Minnesota states the purpose of the ordinance is “to allow single-family dwellings to be clustered together in areas of non-prime agricultural farmland in a manner that prime agricultural farmland, woodland, and unique natural amenities would be preserved.”

2. Section 2.0 – Qualifying Conditions

The qualifying conditions section should outline the areas which permit or require cluster development as well as minimum tract size required. Further, this section may require the developer to insure or explain the plan for water supply as well as wastewater treatment options. Local authorities should include any other requirements which are consistent with the comprehensive plan and goals of the zoning decision.

3. Section 3.0 – Permitted Uses

¹⁶⁸

Id.

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The permitted uses section should outline the type of dwelling units allowed. These types may include single-family detached, mix of single and multiple-family dwellings, and residential with limited commercial in a village setting. Depending on the type, the ordinance should specify design and density requirements. For example, if implementing a conservation design option, the ordinance may require 60 percent of the tract reserved for open space.

4. Section 4.0 – Open Space and Density/Dwelling Unit

Calculation

The open space and density/dwelling unit calculation should outline calculation methods to meet the open space and density requirements of the statute. These calculations should account for presence of natural constraints, easements, rights-of-way, and existing streets or utility easements. These formulas help the developer in planning a cluster development and allow the community to achieve the goals outlined in the purpose provision of the cluster ordinance.

5. Section 5.0 – Dimensional Standards (Minimum Lot and
Yard Areas)

The dimensional standards should outline the size requirements of lots within the cluster development. This includes lot size and setback measurements. Another approach is specifying distances between units. This provision will also assist in planning for a well constructed clustered development which meets the goals of the ordinance and allows for aesthetically pleasing neighborhoods.

6. Section 6.0 – Open Space and Design Standards

The open space and design standards should list “permitted uses within the open space and guidelines for how the open space should be configured.” This would also include prohibited

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uses. For example, the ordinance may call for a playground or walking trail. Well designed clustered developments should retain the existing character of the area.

7. Section 7.0 – Open Space Ownership

The open space ownership addresses an important issue of who owns the open space in the clustered development. Options include the following: “fee simple dedication to the municipality or a private conservation organization, dedication of an easement to the municipality or a private conservation organization, or ownership by a homeowner’s association. This provision may discuss owner obligations such as maintenance or other management or accountability issues.

8. Section 8.0 – Open Space Maintenance Standards

The open space maintenance standards should outline management and maintenance protocol. This provision may require the owner of the open space to submit plans for wastewater disposal, water supply, landscaping, or other management and maintenance issues related to the open space in the clustered development. Further, the provision may discuss financing of these tasks and even provide for certain penalties if the open space is not maintained according to the standards. These types of provisions should be specific enough to give guidance, yet broad enough to allow for the feasible development of clustered subdivisions.

9. Section 9.0 – Onsite (Decentralized) Wastewater Treatment

Options

Depending on the development and the area, an onsite wastewater treatment may be the only feasible option if a public sewer is not available. This provision should require the developer to submit a proposed plan for wastewater treatment. The provision may specify or recommend approved systems or companies that construct onsite wastewater treatment centers.

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Further, the developer should be given guidance as to how to proceed with permitting as well as reminding the developer of their duty to comply with the state's strict guidelines for approval, installation, and maintenance of such systems.¹⁶⁹

F. Conclusion

Given the rapid rate of urban sprawl, many planners think septic systems are the greatest impediment to good development patterns in Georgia. Due to limited availability of sewer in the rural areas, development typically takes the form of the common subdivision which includes large lots with single-family housing on each lot and an individual septic system. These developments consume large tracts of land to accommodate a limited number of families. By implementing the cluster model of development, communities can make a more efficient use of this limited resource while preserving the beauty and integrity of the area.

Fortunately, clustered developments are not a new phenomenon. This form of land development has been used for many years.¹⁷⁰ In fact, “the development of Radburn, New Jersey, in 1928 represented the first formal introduction of the cluster development concept.”¹⁷¹ “In Radburn, single-family homes and garden apartments are sited in ‘superblocks’ of 35 to 50 acres. The superblocks have no through traffic and are interspersed with parks and related green spaces on which the residences face.”¹⁷² Clustered development definitely offers numerous advantages from financial benefits such as cost savings as well as social benefits such as increased sense of community.

¹⁶⁹

Id.

¹⁷⁰

See 4.7 Model Residential Cluster Development Ordinance,
<http://www.planning.org/smartgrowthcodes/pdf/section47.pdf>.

¹⁷¹

Id.

¹⁷²

Id.

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Whereas implementation of these developments may have been more difficult in the past due to limited availability of sewer, modern onsite wastewater treatment systems allow for these developments to flourish around the country. In fact, more and more communities are turning to the clustered model to preserve their communities.¹⁷³ Given the numerous reasons for implementing this model, mandating clustered development in certain areas should be justified and thus withstand legal attack. The lack of public sewer is no longer an impediment to clustered development.

The EPA, in a September 1999 report on Class V underground injection wells, predicted the usage of LCSSs is expected to increase as the population increases. The report stated that “construction and use of LCSSs will continue in areas where geological conditions are favorable and sewerage is not readily available and economically feasible.” Further, “the systems will continue to be constructed because using LCSSs is an accepted and economically attractive practice.”¹⁷⁴ Clustered development in areas with limited or no access to public sewer is a no-brainer given the benefits of the clustered model and the availability of technologically advanced onsite wastewater treatment options capable of accommodating these types of developments.

¹⁷³

Id.

¹⁷⁴

United States Environmental Protection Agency, EPA 816-R-99-014e, The Class V Underground Injection Control Study (1997).