THE CONSERVATION SUBDIVISION DESIGN PROJECT: BOOKLET FOR DEVELOPING A LOCAL BYLAW

Including:

- **Discussion of elements to include & consider when drafting a local bylaw**
- **Bylaw Review: summary and analysis of selected Massachusetts bylaws**
- **Model Open Space Residential Development/Conservation Subdivision Design Bylaw, with annotations (Legal assistance in developing this bylaw provided by Mark Bobrowski, Esq.)**

By the Metropolitan Area Planning Council
David C. Soule, *Executive Director*

Funded by the Executive Office of Environmental Affairs
July 2000
Written and Conducted by:
Evan G. Belansky, *Regional Planner*
Stacey L. Justus, *Environmental Planner*

CREDITS AND ACKNOWLEDGEMENTS

This publication was prepared by the staff of the Metropolitan Area Planning Council (MAPC). MAPC is the officially designated regional planning agency for 101 cities and towns in the Boston metropolitan area. The Council offers technical assistance to its member communities in the areas of land use, environmental quality, housing, energy, transportation, and economic development.

This publication is one component of a larger project, the Conservation Subdivision Design Project, funded in full by the Planning For Growth Program of the Executive Office of Environmental Affairs.

Credits

Project Manager & Principal Author:	Stacey Justus
Co-author:	Evan Belansky
Graphics:	Mara Callahan
Technical Review:	Martin Pillsbury
	Mark Racicot
Legal assistance & writing for the Model Bylaw:	Mark Bobrowski, Esq. (subcontracted by MAPC)

MAPC 1999-2000 Officers

Richard C. Walker, III, President
Mayor William J. Mauro, Vice President
Mary Ellen Lavenberg, Treasurer
Donald A. Walsh, Secretary
David C. Soule, Executive Director

Special Thanks

To the *Green Neighborhoods Alliance* members for their support of MAPCs' project, for their review and input into several drafts of the Model Bylaw, and for their commitment to moving this project toward implementation and action in the North Shore region of Massachusetts.

The *Green Neighborhoods Alliance* is a group of advocates representing diverse land-use interests. Members include: Camelot Realty Trust, Inc.; City of Gloucester Community Development Department; Home Builders Association of Massachusetts; Hunneman & Co. Real Estate: Team Cape Ann; Ipswich Open Space Committee; Massachusetts Audubon Society: North Shore Advocacy Office; Massachusetts Bays Program; Massachusetts Coastal Zone Management; Massachusetts Executive Office of Environmental Affairs; Merrimack Valley Planning Commission; Metropolitan Area Planning Council; North East Builders Association; Spearfields, Ltd., and; Symes Associates, Inc.

Many thanks to several environmental and land use practitioners and experts with whom MAPC staff discussed "conservation development" principles and practices, who reviewed these materials, and/or who provided insights as well as critiques. Thanks are extended to Randall Arendt, Lynn Bilman-Golemme, Harry Dodson, Peter Flinker, Steven Johnson, Donald Schmidt, Terry Szold, Ralph Wilmer, and Charlie Wyman.

THE CONSERVATION SUBDIVISION DESIGN PROJECT: GUIDE TO DEVELOPING A LOCAL BYLAW

Table of Contents

CHAPTER 1
THE CONSERVATION SUBDIVISION DESIGN PROJECT

Though there have been volumes of text written about "cluster" subdivisions and slightly more than half of the 351 communities in Massachusetts have some type of cluster provision in their zoning bylaws (some dating back as far as thirty years), this method of development has been largely underutilized and, in the recent past, has come to evoke a negative reaction from many residents of the Commonwealth.

"The term *subdivision* is so ensconced in our language we rarely stop to think how appropriate it is: subdivision emphasizes the fragmentation of land, rather than the creation of a proper neighborhood of homes and relationships. What people yearn for these days is not another wave of 'real estate developments,' but rather the chance to live in a real human settlement with a sense of place and a sense of belonging" (Arendt, *Rural by Design*, p.59). The continued subdivision of land affects how the built environment is defined and perceived. Historically, conventional approaches to subdivision development have ultimately produced nothing more than house lots and streets. This process has evolved into creating a seamless blanket of "wall to wall subdivisions" with no open space. After several decades of this pattern of development, communities have begun to experience the ecological and economic consequences of what has become known as suburban sprawl (Arendt, *Rural by Design*, p. 280- 282).

Many of the issue associated with the ill effects of sprawl have in recent years been in the national spotlight. Ironically, visionary conservationists and planners had foresight and drafted the first "cluster" zoning provisions nearly 30 years ago. However, although these provisions promoted improved residentially designed development, rarely were they realized, and communities typically received conventional "cookie-cutter" layouts.

I. Project Purpose

Funded by the Executive Office of Environmental Affairs, the Metropolitan Area Planning Council (MAPC) undertook this project in order to promote and enable the use of Conservation Subdivision Design (or CSD), arguably the best reform made to traditional cluster-type zoning to date. This project is intended to elevate the use of this alternative land development technique to one that is commonly accepted and utilized, by serving as an educational tool particularly for Town Planners, Planning Boards and developers.

There are three main components of this project.

A. Planning commentary/discussion of conservation development bylaw elements and a cluster-type bylaw review from selected Massachusetts' communities. These tools are intended to explore several choices a community must make when constructing (or amended) a cluster-type zoning bylaw. A review of selected Massachusetts' cluster-type bylaws helps to highlight alternatives and elements possible in such a bylaw. Lessons learned from the

sample bylaw review are reflected within the planning commentary/discussion. The complete summary of the reviews are attached as Appendix A.

Readers should note that several different references are used for bylaws that, in principle, are striving to accomplish similar open space preservation goals. Some names include Cluster Development, Open Space and Landscape Preservation, Conservation Development, Conservation Subdivision Design, or any combination of these and similar terms. This report will refer to these interchangeable titles as CSD or cluster-type bylaws.

Communities wishing to create a CSD bylaw, or to improve upon an existing one, should use this booklet of planning commentary/discussion as a guide to explore the possibilities for a regulation designed to address resource preservation and development simultaneously. This bylaw review was conducted by MAPC in order to lead MAPC and its consultants toward the creation of the Model CSD Zoning Bylaw.

B. Model Bylaw. This model bylaw was written to encourage a creative partnership between builders and local officials and to utilize the four-step design process articulated by Randall Arendt in his book, Conservation Design for Subdivisions. Suggested titles are either Open Space Neighborhood Development, which is reflective of the basic principles that the *Green Neighborhoods Alliance* promotes, or Conservation Subdivision Design.

MAPC hired a team of consults comprised of Dodson Associates, Landscape Architecture and Planning, Randall Arendt, MRTPI, and Mark Bobrowski, Esq., to assist with this project and specifically to present the CSD technique at two local implementation clinics and in a collaborative process to draft the model bylaw. Mark Bobrowski was instrumental in creating the bylaw and provided several drafts with extensive legal commentary to MAPC. Significant debate and discussion between MAPC and the *Green Neighborhoods Alliance* led to the final model bylaw (Attached hereto as Appendix B).

C. Casebook of Examples. MAPC presents four examples of CSD-type developments in Massachusetts. This casebook is intended to present local officials, land developers, landowners, potential homebuyers, and others with positive examples of subdivisions and the benefits gained when land is developed under a well designed cluster-type bylaw. Each example presents photographs, available site plans, tables of statistics (including the density/yield), an explanation of the real and perceived obstacles posed by the special permit requirement, and a discussion of the process that the Planning Board and developer went through. This component is not incorporated into this report, but was produced as a stand-alone document and is available from MAPC.

In addition to these three components, MAPC conducted public sessions (spring and summer, 2000) that discussed the benefits of CSD and explained how diverse communities can apply the model bylaw and subdivision regulations. Important tips for the public process that communities might follow as they begin to mobilize support for adopting local bylaws and regulations were discussed as well. These tips should be considered as citizens or community leaders begin the process of crafting (or amending) a bylaw and heading to Town Meeting or City Council.

II. Reasons for Under-Utilization of Cluster Bylaws

Since the original "cluster" bylaws of the 1970's, many communities have been disappointed by the lack of use. Over the last 30 years some communities have attempted to increase the usability and attractiveness while many others have shelved them. Most of these attempts have been substantive changes to zoning and subdivision regulations resulting in minimal improvement to overall acceptance. Ironically, the most significant change has been in the actual name. "Cluster" zoning is now referred to as Conservation Subdivision Design, Open Space Conservation, Landscape Preservation, Conservation Development and Flexible Development. Regardless of the name, this method of development still remains largely underutilized in Massachusetts.

Cluster bylaws are often loaded with requirements that are vague, excessive, or even counterproductive. Where the approval process is dependent upon a "special permit" process arbitrary and discretionary decision-making is frequently the rule (Arendt, *Rural by Design*, p.233). For example, many bylaws include language such as "harmony with the existing and probable future uses of the area and with the character of the surrounding area" as approval criteria. This enables the Permit Granting Authority to be influenced, and ultimately reject proposals, by popular sentiment expressed by abutters rather than by the degree to which the proposed development satisfies the provisions in the bylaw. Excessive requirements often come in the form of required public water and sewer connections where none may actually be necessary, minimum parcel size, or maximum number of house lots. Furthermore, many well intended provisions such as requiring a perimeter buffer strip, establishing deep yard setbacks or requiring that every lot abut the open space are actually counterproductive and self-defeating because they stultify the design process.

Other reasons for under-utilization of cluster bylaws include:

- A traditionally antagonistic relationship between local officials, developers, abutters and conservation groups;
- A lack of awareness of successful local conservation subdivision developments that can, by example, dispel the myth that no market exists for homes in clustered developments; and,
- Local prejudice against zoning for smaller lots.

The Special Permit

Municipalities have processes in place that are typically in favor of conventional development (they are "by-right") and against creative open space alternatives (they are by special permit only). The discretionary power that is inherent in a special permit is often a deterrent to developers; they often do not know and/or do not trust the local boards who hold the power to grant or deny the permit. Therefore, many developers simply choose to go down the road previously traveled – conventional development. "[P]erhaps the most critical element [necessary to advance CSD] involves reducing the uncertainty associated with the plan approval process itself" (Arendt, *Rural By Design*, p. 232).

There are options that would allow for "procedural parity," in other words, would level the playing field, between conventional and cluster development even if the special permit

requirement is never removed. For example, by bringing non-cluster development controls up to the same demanding standards applied to clusters communities can achieve that parity.

If cluster development is allowed by special permit only, in order to promote the use of CSD-type bylaws the process needs to be one that developers feel comfortable with, fully understand, and are therefore willing to use. This involves not only well constructed regulations that reduce uncertainty but also the education of Permit Granting Authorities, planning staff, land developers, land owners, and citizens (often acting as obstructive abutters).

During the course of this project, the Massachusetts State Legislature did enable Cluster Development "by-right." Section 9 of Chapter 40A of the General Laws was amended by Chapter 148 of the of the Acts of 2000 (an Act promoting the use of cluster developments and the preservation of open space) to insert the following language:

> Notwithstanding any provision of this section to the contrary, zoning ordinances or by-laws may provide that cluster developments shall be permitted upon review and approval by a planning board pursuant to the applicable provisions of sections 81K to 81GG, inclusive, of chapter 41 and in accordance with its rules and regulations governing subdivision control.

Municipalities are still able to retain the special permit requirement if they so choose. MAPC identified several communities that are successfully protecting their resources while enabling cluster-type development under a special permit requirement; it is unlikely that these communities would elect to change to a "by-right" process where they would lose discretion. Now that municipalities can and ultimately may adopt cluster by-right they will be faced with a serious challenge – how prescriptive to make their bylaw in order to make up for a loss of discretion in the process.

CHAPTER 2
CONSERVATION SUBDIVISION DESIGN

I. What is Conservation Subdivision Design?

The term "Conservation Subdivision Design" (CSD), as coined by Randall Arendt, describes a relatively new concept of cluster-type development that enables land to be developed while simultaneously preserving community character, reducing environmental impacts, protecting the rights of property owners, and enabling a developer to benefit from a high-quality project. CSD accomplishes these goals through a creative design process that identifies primary and secondary conservation areas. Wetlands, floodplains, and steep slopes, in addition to a large portion of the flat, dry, and otherwise buildable land are set aside within those conservation areas from clearing, grading, and construction. Instead, lot sizes are reduced and the allowed development is arranged to "fit" onto the unconstrained land.

CSD is one of the most cost-effective tools for the preservation of open space. Every community likely has areas that should be preserved outright through one of many available methods. But in every community there are other areas that have been slated for development. The CSD technique provides for partial open space preservation and resource protection at no cost to the municipality while allowing development to occur.

II. What Conservation Subdivision Design is not

Conservation Subdivision Design, while it is many things, is not an antidote to sprawl (commonly defined as low density, land consumptive, leap-frog development). CSD is one of the many tools that a community can add to its toolbox of land use techniques to assist in addressing some of the issues related to sprawl. However, it is important for communities to note that cluster sprawl, or "green sprawl," can be a by-product of unchecked, unplanned conservation development.

CSD can certainly create parcels on which there is denser development, however it may not address the land consumptive patterns of development associated with sprawl, nor will it necessarily mean that homeowners of a conservation development will reduce their vehicle miles traveled (a problematic sprawl by-product). What conservation development will do is to provide better protection of natural and cultural resources on a single parcel of land that has been slated for development. It will not make the determination as to whether that parcel should be (or needs to be) developed at all. Cluster/open space design is not the panacea, rather it is one tool in the box that should be used and promoted in an effort to curb urban/suburban sprawl.

Beyond CSD, there is a need in most communities for tools that will ensure that certain land will not be developed at all. There are many valuable resource areas and parcels that should be left *completely* free of development. Additionally, there may be areas that do not have infrastructure in place to support development and where it would make sense not to extend them. One

regulatory tool available for the total protection of resource areas is the Transfer of Development Rights (TDR). While this tool is beyond the scope of this project it does deserve mention here, as TDR is actually a logical extension of Conservation Subdivision Design. Like CSD, TDR is an innovative zoning technique that can effectively address the preservation versus development conflict facing most municipalities. TDR considers the non-economic value of resources and converts those resources into something of value on the marketplace by permitting the sale of associated development rights. The development right is physically transferred or relocated from one parcel of land, which is in need of protection, to another parcel, which is better suited to accommodate that development.

III. Conservation Subdivision Design versus Cluster Development

CSD differs from traditional "clustering" in three important ways. First, it sets much higher standards for the quantity, quality and configuration of the resulting open space and developable area. Second, communities can exercise greater influence on the design of new conservation subdivisions and benefit from much more than just dense pockets of housing. Rather than leaving the outcome purely to chance, this flexible design approach can be strongly encouraged or even required, particularly where a community has an Open Space Plan or Master Plan. Thirdly, the protected land is also configured so that it will, wherever practicable, contribute to creating an interconnected network of open space throughout the community, linking resource areas in adjoining subdivisions and/or providing buffers between new development and pre-existing parklands or forest (Arendt, *Growing Greener*, p.148).

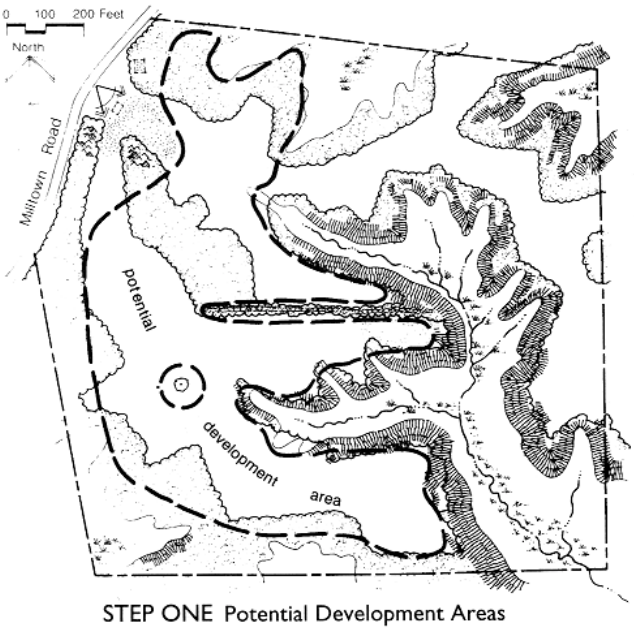
IV. Four-Step Process to Creating a Conservation Subdivision Design Development

Perhaps the greatest strength of Conservation Subdivision Design as put forth by Randall Arendt is the process undertaken to determine the fate of land subject to development. The process intends for land conservation to become the central organizing principle around which house lots and streets are sensitively designed. The design process identifies historical, cultural and natural resources, potential open space corridors, views, etc. that should not be lost to development. The development process excludes these areas from development and builds what can be accommodated on the rest of the parcel. The process consists of four steps: 1) Identifying Conservation Areas; 2) Locating House Sites; 3) Aligning Streets and Trails; and, 4) Drawing in the Lot Lines (See Arendt, *Conservation Design for Subdivisions* and *Growing Greener*).

A. Step One: Identifying Conservation Areas

The first step, which involves the identification of preservation land, is divided into two parts: Primary Conservation Areas limited to regulatory jurisdiction such as wetlands and floodplains; and Secondary Conservation Areas including those unprotected elements of the natural landscape such as steep slopes, mature woodlands, prime farmland, meadows, wildlife habitats and cultural features such as historic and archeological sites and scenic views. The act of "green-lining" conservation areas also defines "Potential Development Areas," which occupy the balance of the site. This completes the first step of the process and virtually ensures that the

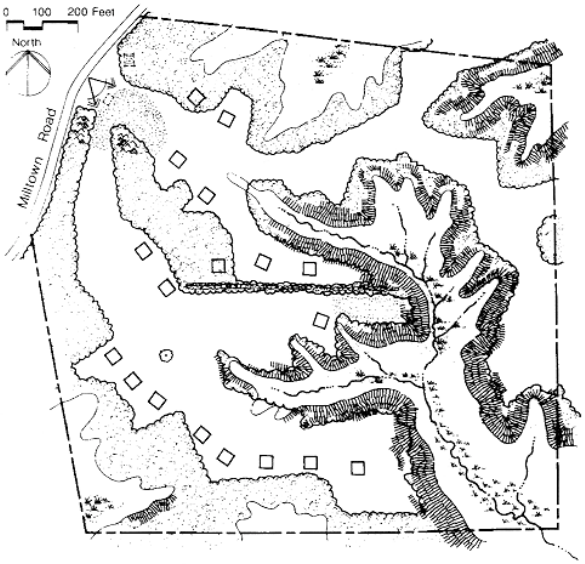
site's fundamental integrity will be protected, regardless of the actual configuration of house lots and streets.



STEP ONE Potential Development Areas

B. Step Two: Locating House Sites

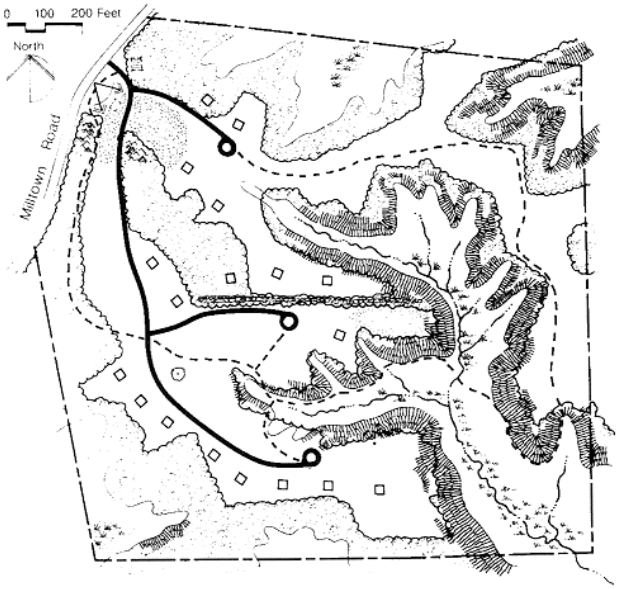
The second step involves locating the approximate sites of individual houses within the Potential Development Area in a way that maximizes the number of homes enjoying direct views of the conservation areas.



STEP TWO Locating House Sites

C. Step Three: Aligning the Streets and Trails

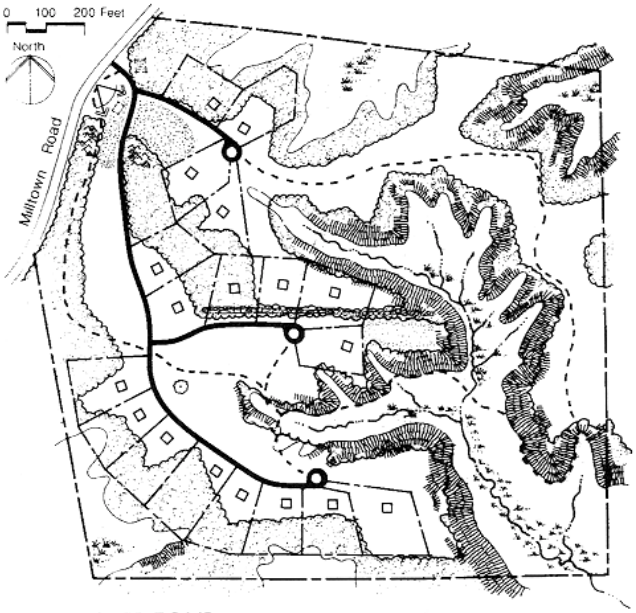
The third step consists of tracing a logical alignment for local streets to access the houselots. This essentially involves "connecting the dots." Informal footpaths should be layed out to connect various parts of the neighborhood, making it possible for residents to access and enjoy the open space and any existing off-site trail systems or sidewalks.



STEP THREE Aligning Streets and Trails

D. Step Four: Drawing in the Lot Lines

The final step is simply a matter of drawing in the lot lines, perhaps the least important element in the design process.



STEP FOUR Drawing in the Lot Lines

V. Benefits of Conservation Subdivision Design

The benefits of conservation development, and specifically of the CSD technique, are many. Most of the benefits are a result of the significant preservation of open space that is inherent in the use of this development technique. This report does not go beyond a cursory mention of these benefits. (See Arendt, *Growing Greener* and Graduate School of Design Harvard University, *Mass Bay Commons*).

A. Environmental and Ecological Benefits

In addition to preventing development within areas that would ordinarily be cleared, graded, and covered with homes, lawns and driveways in conventional development, there are many other environmental and ecological benefits, including wildlife management and habitat preservation, water quality protection, greater aquifer recharge, and environmentally sensitive sewage treatment and disposal.

Natural areas preserved in conservation subdivisions provide important habitat for wildlife to dwell and travel through. The greenways that are a hallmark of the design process, provide cover and naturally sheltered corridors for various species. Conservation subdivisions provide larger areas of natural vegetation that act as buffers to help filter stormwater flowing into wetlands and waterbodies, trapping pollutants and excessive nutrients contained in stormwater runoff. Buffers also offer important infiltration and "recharge" benefits because they help maintain adequate flows of filtered water to underground aquifers. Reduced impervious surfaces found in CSD-type development significantly reduce the size and number of stormwater detention basins needed on the site. This lowers infrastructure costs and frees land for other uses.

Conservation subdivisions also offer greater opportunities to implement environmentally sensitive sewage treatment and disposal systems known as "alternative systems." Because of reduced lot sizes, individual septic systems may no longer fit on each lot – alternatives must be found. It is possible to use shared septic systems and/or common leach field, and to locate that leach field outside of lot lines. Alternative systems are a well documented technology that is superior to conventional mechanical systems in many ways because they produce only very small amounts of sludge-by-products and they help to replenish local aquifers.

B. Social, Cultural and Recreational Benefits

Conservation subdivisions can create pedestrian friendly neighborhoods where residents are provided with "inviting places to walk" and "interesting destinations" to meet one another. Placing homes closer to the streetscape by reducing front-yard setback requirements reduces isolation and better connects each home with the neighborhood. Common open space provides space for community activities, such as picnics and block parties. Recreationally, conservation developments can create a community-wide system of greenways and trails and often create active recreation areas such as soccer and baseball fields. Additionally, open space preservation can be targeted so that it protects areas of natural and cultural heritage.

C. Fiscal and Economic Benefits

Fiscally, sprawl development has been shown to result in increased public costs for the construction and maintenance of public infrastructure such as water and sewage facilities and providing services such as fire and police protection. Put simply, "it costs more to run school buses and emergency vehicles, to repair roads, and to collect garbage when homes are spread out over more miles of roads than when houses are located more closely together"(Arendt, *Rural By Design*, p. 282). CSD offers an opportunity to reduce infrastructure engineering and construction costs not only for the developer, but also to the public sectors' long term maintenance costs by enabling shorter street and utility systems. In practice, conservation development equals fiscally conscious development because open space protection helps reduce municipal expenditures.

Although unsupported by formal technical analysis, MAPC believes that advantages are also realized during the marketing and sales of homes in a conservation development. At this time developers can capitalize on open space amenities within the development. Additionally, homes in conservation subdivisions tend to appreciate faster than their counterparts in conventional developments. Homebuyers value the amenities of open space, such as attractive views and recreational opportunities. This is undoubtedly reflected in increased real property values and marketability for property located near open space.

CHAPTER 3
BASIC ELEMENTS OF A CONSERVATION DEVELOPMENT BYLAW

This chapter provides a comprehensive examination of the basic components/elements of a residential conservation development bylaw. It is based upon research, review of existing bylaws, and discussions with town planners, developers, and other planning professionals throughout the Commonwealth. This chapter is intended to present the issues central to each bylaw element as a "menu of choices" that a community should consider when creating or amending a cluster-type bylaw. How these components are addressed will affect the outcome of a development and even whether or not the bylaw will be utilized at all.

Municipalities should use this narrative in conjunction with the Model Bylaw, attached as Appendix B, to create a conservation development bylaw appropriate for their community. The model bylaw is the culmination of the research done to prepare this chapter and incorporates what we believe to be the best choices. It continues to present regulatory options in the form of annotated text and suggested language. When creating a local bylaw it would be beneficial to read this chapter first and then proceed to the model bylaw language itself. Hopefully, all issues will be clear and a municipality will have enough information so that it is able to select regulatory language that best suits its local political and environmental climate.

I. Purpose and Intent

Purposes are divided into primary and secondary. Primary purposes are those that are common to all bylaws. Secondary purposes are unique to a particular community.

A. Primary Purposes

- To allow for greater flexibility and creativity in the design of residential developments
- To encourage the permanent preservation of open space, natural resources including waterbodies and wetlands, and historical and archeological resources
- To encourage a less sprawling and more efficient form of development that consumes less open land and conforms to existing topography and natural features better than a conventional or grid subdivision
- To minimize the total amount of disturbance on the site
- To further the goals and policies of the comprehensive, master, or open space plan
- To facilitate the construction and maintenance of structures, streets, utilities, and public service in a more economical and efficient manner

B. Secondary Purposes

- To preserve and enhance the rural character
- To preserve and protect agriculturally significant land

- To protect the value of real property
- To provide for a diversified housing stock
- To provide affordable housing to persons of low and moderate income
- To protect community water supplies
- *Not* intended to make undevelopable land developable

II. Requirements for Eligibility

The following is a menu of choices that each community must consider when determining if a parcel will be eligible for development under the CSD/cluster-type bylaw:

A. Permit granting authority

Although the Zoning Act allows Planning Boards, Zoning Boards and/or Board of Selectmen to act as the Special Permit Granting Authority (SPGA), it is strongly recommended that special permits be reviewed and issued by the Planning Board. This is due to the interrelationship between the zoning approval and subdivision approval that must be granted.

B. Number of lots

Some bylaws specify that cluster can be used only if a specified minimum number of lots are being created. Many bylaws actually use a minimum lot number to *mandate* development under CSD by stating that if a subdivision will create a number of lots above a specified threshold (typically 5 lots or more), then the applicant must submit a development application under the CSD Bylaw.

C. Minimum parcel size

Some bylaws prescribe a minimum parcel size, typically written to be above ten acres. In communities where mostly large parcels are facing development pressure this may seem fairly innocuous. However, many landowners own smaller parcels that may include an important resource such as a small meadow, forest grove, stream corridor, or old stone wall. There is no reason to preclude these smaller parcels from benefits of good design and resource protection.

D. Zoning districts

Most bylaws allow CSD's within residential districts in which the conventional lot size is at least 20,000 sq. ft. In some communities it is only applicable in rural areas because it is visualized as a tool for conserving large areas of open space.

E. Contiguous/non-contiguous parcels and common/non-common ownership

All bylaws allow for the use of contiguous parcels held in common ownership. Some communities have decided to specifically define this to include parcels physically separated by a street. Applicability of cluster/CSD to *non-contiguous* parcels held in *common* ownership is

significantly underutilized considering that it does not require the adoption of additional administrative procedures. Although relatively unused at this time, non-contiguous parcels held in non-common ownership should be given serious consideration (See discussion of Transfer of Development Rights in Chapter 2, Section II.).

F. Land Division

All bylaws are applicable for use with subdivisions. Approval-not-required (ANR) lots, and other residential developments that are not subdivisions, such as back-lot development and common-driveway bylaws, can still be enabled to benefit from the conservation development principles.

G. Triggering a mandatory filing

Several communities have mandated the use of cluster by setting triggers. Such triggers can be linked to a specified number of lots being created, a certain size parcel, or a certain zoning district. Amherst may be the best known example. They have mandated the use of cluster development on all parcels located within the Watershed Protection, Aquifer Recharge Protection, and Farmland Preservation Districts. This is an effective technique that can be used to better protect significant, pre-identified, resource areas.

Mandatory cluster and the effect on the Permit Granting Authority's discretion
It has been expressed by some that any language that in effect makes the use of cluster mandatory (by district or by lot size triggers) will hinder the Planning Boards discretion and weaken their bargaining power that is intended to ensure the protection of community resources. Simply put, this argument stems from the fact that a developer can say, for example, "it is mandatory here so you, Planning Board, cannot deny me." However, there are several arguments in favor of mandating the use of cluster-type bylaw:

1. The Planning Board may not actually lose any discretion. It is true that the Board cannot deny the cluster development if it is the only development option, but they still can regulate it. A special permit does not have to be granted until the plan satisfies all bylaw requirements.
2. At the present time, few developers choose to build cluster developments unless they are mandatory.
3. The public benefits that can be achieved under cluster, and not conventional, will more than make up for any perceived or actual loss in the Town's bargaining power.

III. Procedural Elements

This section presents the various plan submittals and approval processes typically utilized by cluster bylaws. Procedural elements such as the approval process and submittal requirements play a critical role in determining the ultimate fate of a bylaw's usability.

The procedural elements that govern the development process can make or break a cluster-type bylaw. A complicated or lengthy process can be the "kiss of death" for this alternative development technique. Particularly fatal for cluster-type bylaws are processes that prolong the

length of the review period by subjecting the proposal to additional scrutiny, requiring unnecessary and costly supporting documents or plans, and that establish a process involving greater uncertainty with respect to the outcome of an application. Additionally, "whether [conservation developments] are permitted by-right, or whether they are allowed only [by Special Permit], makes a tremendous difference in how often developers are likely to make use of this option" (Arendt, *Growing Greener*, p.13).

A. Submittal Requirements

When reviewing and approving a parcel under a cluster-type bylaw there are general maps and plans that would help both the municipality and the developer understand what is going to be built on the parcel. More importantly, with preservation of community resources as a goal, it is important that a bylaw require the submittal of plans that will help to identify areas that should be preserved. The following is a list of plans that are either common submittal requirements within existing cluster-type bylaws or would become necessary submittal requirements under a bylaw that utilizes the four-step CSD design process.

The options for submittal requirements will have a direct impact on the approval process. Therefore, when reviewing the various submittal requirements, particular attention should be given to the amount of detail provided by each. When revising an existing bylaw or drafting a new one, a community needs to consider the level of detail that will provide enough comfort for the community and SPGA.

1. Possible Plans

a. Site Context Map

This map illustrates the parcel in connection to its surrounding neighborhood. Based upon existing data sources and field inspections, it should show various kinds of major natural resource areas or features that cross parcel lines or are located on adjoining lands. This map enables the SPGA to understand the site in relation to what is occurring on adjacent properties. This is important "when linear elements such as stream valleys, ridgelines, wildlife migration routes, historic roads…or utility easements are involved. Blocks of active farmland…and woodland…are also important to discern at the neighborhood level to help guide decisions regarding the most appropriate areas to conserve on the proposed development site" (Arendt, *Growing Greener*, p.54).

b. Existing Conditions/Site Analysis Map

"This map is perhaps the single most important document in the subdivision design process because it provides the information base on which every major design decision turns" (Arendt, *Growing Greener*, p.54). The purpose of this map is to familiarize officials with existing conditions on the property. Based upon existing data sources and field inspections, this base map locates and describes noteworthy resources that should be protected. These resources include many otherwise "unbuildable" areas such as wetlands, floodplains and steep slopes, but may also include mature un-degraded woodlands, hedgerows, farmland, unique or special wildlife habitats, historic or cultural features (such as old structures or stone walls), unusual geologic formations, and scenic views onto and off of the property. By overlaying this plan onto a

development plan the parties involved can clearly see where conservation priorities and desired development overlap/conflict.

c. Conservation Subdivision Plan (Sketch and/or Preliminary)

Sketch Plans are more than a back-of-the-napkin drawing, but not a full-blown preliminary subdivision plan. Instead, they are intended to demonstrate how the parcel would likely be developed under a cluster-type bylaw. In other words, a Conservation Sketch Plan is typically a simple and inexpensive drawing that illustrates the approximate layout of house sites, house lots, and streets in relation to the conservation area.

These plans can cost little to prepare as long as they do not involve engineering and official site surveys. Instead a bylaw can require that Conservation Sketch Plans are prepared using pre-existing documents, such as the Existing Conditions/Site Analysis Map discussed above, USGS topographical maps, FEMA floodplain maps, tax assessors maps, any wetland maps or orthophotographs, and NRSC soil maps. In situations where a pre-application meeting (which could be strongly recommended as part of the development process) is held prior to the creation of this plan, then comments received from local officials during the pre-application meeting should be incorporated into the Sketch Plan.

Because the Sketch Plan is a result of the four-step approach to designing conservation subdivisions, plans are created as part of that process. The Planning Board may wish, as some point, to see these plans to ensure that the Developer has in fact, gone through this four-step process. (See Chapter 2, Section IV, above for details of these steps).

Alternatively, a Conservation Subdivision *Preliminary* Plan can be required. This is engineering intensive as it is based upon the requirements of the preliminary subdivision plan as specified in a Town's Subdivision Rules and Regulations. It is essentially the same as a typical conventional subdivision preliminary plan in that it shows, in a fair amount of detail, how a parcel can be developed according to Subdivision Rules and Regulations. However, it typically requires site-specific information for soil types, slopes and wetlands rather than utilizing existing sources of information.

d. Conventional Subdivision Plan (Sketch and/or Preliminary)

Even if it is known up front that a parcel is going to be developed as a clustered design, there are often requirements for the developer to prepare a conventional subdivision plan. There are two main reasons why this is a typical requirement:

- First, a conventional subdivision plan may be required in order to determine yield. Cluster-type bylaws are typically written to depend on the yield allowed in a conventional development as the base maximum yield allowed within the alternative development. If a cluster-type bylaw uses a formula instead to determine parcel yield, then the creation of conventional plan for this purpose is not necessary.
- Second, the conventional plan becomes a tool for comparison.

The submittal requirements for a Conventional Subdivision Plan within a cluster-type design process should carefully match the use of that Plan. For example, a Conventional Subdivision Plan that will only be used as a tool for comparison (perhaps to show abutters what could be built

there as-of-right) may not necessarily need to be drafted with the official wetland delineation or soil percolation testing of the entire parcel of land. Because it is critical to construct a cluster-type bylaw that does not create disincentives for a developer by requiring unnecessary and costly plans, a City or Town must carefully determine at what stage in the development and design process they actually need to ask an applicant to officially delineate wetlands, percolation test all unsewered parcels, and conduct an official site survey.

(1) Conventional Subdivision Sketch Plan or Yield Plan

"[A]pplicants submit a lightly engineered sketch showing the maximum number of lots they could reasonably expect to achieve through a conventional layout, given the presence of fundamental building constraints such as wetland, floodplains, and steep slopes" (Arendt, *Growing Greener*, p.65). A *sketch* plan would not require expensive engineering, although if it will be used to determine yield there may be additional requirements, such as an official wetland delineation.

(2) Conventional Subdivision Preliminary Plan

This plan is essentially the same as the conventional subdivision sketch plan in that it shows how a parcel can likely be developed as a conventional development, however its preparation is guided by the local Subdivision Rules and Regulations and requires more detailed (and often more expensive), site-specific information.

e. Definitive Subdivision Plan

This would be the projects' final submittal. It contains the final, detailed engineering drawings of the agreed upon subdivision design. So as not to create a disincentive for developers under a cluster-type bylaw, by the time a Definitive Subdivision Plan is submitted all basic points of negotiation should be resolved.

2. Dual-plan Submittal Requirement

Many existing cluster-type bylaws require the submittal of a Conservation Subdivision Plan **and** a Conventional Subdivision Plan. There are advantages and disadvantages to requiring dual-plan submittal.

It is important to note the difference between a submittal requirement calling for a *sketch* plan versus a *preliminary* plan. There is a different level of detail required, one that is less stringent for a *sketch* plan. Communities that may want to require a dual-submittal with the only intent being to determine allowed lot-yield under conventional development, should consider requiring only a sketch plan:

<u>Advantages</u>

- Dual plans serve as a visual comparison that may be used to educate local boards, the general public, abutters, and the developer of potential benefits.
- The number of lots that can be built under a conventional plan will be determined and can then be used as the base number of lots allowed under any development technique. Some communities want to ensure that alternative techniques are not allowing undevelopable land to be developed. The conventional plan can demonstrate to number of possible developable lots under conventional regulations.

- The conventional yield plan will be useful baseline.

Disadvantages
- Developers think it is too costly and may therefore choose not to use the cluster-type bylaw at all.
- It is seen as unfair to ask developers to expend time and money for two plans, one of which will not be built.
- It may not be a good strategy for a town to require the preparation of a plan whose use they intend to discourage. It is reasonable to doubt the logic behind requiring a plan for something that you don't want.

B. Approval Process

This section presents the two options available for an approval process, either approval by special permit or approval by-right. When creating a CSD bylaw or amending an existing cluster-type bylaw, it is recommended that a pre-application meeting be included regardless of the approval process utilized.

In an effort to maximize the potential of cluster-type bylaws, communities are encouraged to create a process that links them to any exiting open space, housing, master, comprehensive, or water resource management plans. These plans are intended to guide municipal strategy for managing growth and provide an opportunity to coordinate the benefits of CSD. Additionally, requiring developers to adhere to local plans provides notice to landowners and potential developers that the community values these pre-existing tools and intends to implement them. Specifically, an existing plan can guide development toward the most appropriate location and leave desirable resource areas as the undeveloped land. For example, if a developer knows up front of a wildlife corridor that is a town priority for protection, they can incorporate this into their proposal. This would also help to foster good relations between the local officials and the developer from the start and possibly save time and money for each in the long run.

1. Pre-application review

A pre-application review meeting is strongly encouraged. The primary purpose of this meeting is to introduce the potential applicant to the standards and procedures of the bylaw and initiate dialogue up front. Participants at this meeting should include the developer, consultants, members of the Planning Board, Conservation Commission, Board of Health, and staff from the Planning Department. A bylaw that encourages conservation and one that incorporates the four-step design process will need to encourage dialogue between the parties and foster a working relationship. This meeting would be more valuable if the developer came prepared with a site context map and existing condition/site analysis map.

Although it is technically possible to require attendance at a pre-application meeting, this is typically not done because there is no comparable requirement under the conventional zoning processes. However, some communities have provided incentives (such as on-the-spot density bonuses) to increase participation. Another incentive that communities may want to consider is to provide for a streamlined permitting process by reducing the 65 day time period to hold a public hearing for a special permit or reducing the 90 day time period to issue a decision.

2. Approval Process by Special Permit

When reviewing the special permit process, particular attention should be given to the timing of when a permit is issued, referred to as "procedural pacing." There are two timing options for holding the required public hearing to grant the special permits and the subdivision approval.

First, many communities grant the special permit and then officially close the public hearing. At this point, the applicant would proceed with Subdivision Approval. This often results in the need for the SPGA to reopen the hearing due to "substantial variations" arising between the plan approved under zoning and the plan approved under subdivision. Reopening is necessary to review and approve major modifications, such as changes in the number of lots, or the layout of lots, roadways, or open space.

Second, bylaws can be designed to allow for the coordination of the required public hearings for permitting under zoning and subdivision. This allows both hearings to be open and the permits issued simultaneously, thus eliminating the need for additional hearings due to "substantial variations."

In past years, some communities have revamped and updated their bylaws in an attempt to increase usability and to decrease costly submission involving a high degree of uncertainty. These updates have typically included procedural pacing option two, allowing for and encouraging the special permit and subdivision hearing to be held simultaneously. Bylaws have also started to reduce submittal requirements to only a conventional subdivision sketch plan and a conservation subdivision sketch plan. A few bylaws have reduced them further to require a conservation subdivision sketch plan and a formula to determine the yield.

There are significant advantages and disadvantages that should be understood when considering an approval process by special permit:

<u>Advantages</u>

- Retains discretion in the process allowing the Planning Board to utilize flexible requirements (not prescriptive) with which they can negotiate for a creative development addressing the unique values and opportunities of each site.
- Provides a negotiation tool for both the Town and developer. The Planning Board has the discretion to waive various requirements and the developer can request waivers that will enable them to meet more of their own needs. Because the Planning Board hopes to encourage alternative designs they would likely try to accommodate the developers needs.
- It is a check-and-balance that protects all interests.
- A process can be constructed whereby the permit decision can be made early in the timeline of development approval. Therefore, much of the uncertainty feared by developers is easily removed.

<u>Disadvantages</u>

- Developers fear discretionary nature of the permit. Many developers have had unpleasant experiences and believe that the decisions are arbitrary. This can occur if a Board is not supportive of the bylaw in general and/or does not understand the need to work with the

developer in order to achieve the best development scenario – one that benefits the community and allows the developer to turn a profit.

- Requiring the special Permit does not put cluster-type development on a level playing field with conventional subdivisions. "Procedural parity" is necessary if cluster-type bylaws are to be used.
- The developer regards it as time consuming, costly, and uncertain – the three most unfavorable factors of a land development project. (Significant costs accrue to a developer carrying undeveloped land.)
- Developers fear potential persuasion by the general public. The Public Hearing requirement and discretionary nature of the permit can open them up to many demands, often unrelated to the review requirements of the bylaw.
- When a process decides on the special permit early on, there is an increased chance of "substantial variations" between the Special Permit and Definitive Subdivision Approval.

This project explores an alternative option. It is an innovative process establishing a new standard in which the procedural timing is altered by granting or denying the special permit early in the process prior to Definitive Subdivision Approval, thereby removing much of the uncertainty feared by developers. The process is as follows:

A Conventional Subdivision Yield Plan is submitted to determine yield and a Conservation Subdivision Sketch Plan is submitted indicating the approximate locations of lots and streets. These two plans comprise the Concept Plan upon which the Planning Board either approves or denies the special permit. The special permit would be granted with a series of attached conditions, including the specific indication of the maximum potential number of lots/units/bedrooms, approval from the Conservation Commission, Board of Health, Definitive Subdivision Approval and compliance with the rest of the CSD bylaw. Once the Special Permit is granted, the applicant proceeds with subdivision approval.

The keys to this innovative process are the following:

- Official soil percolation tests and wetlands delineation are not necessarily required during the special permit process. Rather, the permit indicates a maximum potential number of lots/units/ bedrooms, which the developer must then substantiate by these tests during Definitive Subdivision Approval.
- Essentially, all dimensional requirements such as lot size, frontage, and open space would be dealt with under the special permit process, but would be prescriptive in nature.
- All design decisions are reviewed and approved during the special permit process except for the final engineering details, which are reviewed and approved under Definitive Subdivision Approval.
- Due to case law, this alternative option of granting the special permit, closing the hearing and conditioning the permit is only available when the Planning Board is the SPGA.
- This process may often result in the need for the Planning Board to reopen the special permit hearing due to "substantial variations" between the Concept Plan approved under zoning and the Definitive Subdivision Plan approved under Subdivision.

3. Approval Process By-Right

To date, there are very few bylaws on the books that allow open space development by-right. This option would allow the application to proceed subject to site plan review not a special permit. Essentially, this would mean that the provisions are prescriptive, rather than discretionary. Bylaw language would specify minimums for lot size, frontage and other dimensional requirements. The submittal requirements would include a dual submission of a preliminary CSD plan and a conventional preliminary plan.

Based upon traditional land use development regulatory techniques such as site plan review, it is difficult to design a by-right bylaw that enables the flexible and creative design process. If municipalities choose to adopt a cluster-type bylaw by-right they will be faced with a serious challenge – how prescriptive to make their bylaw in order to make up for a loss of discretion in the process (See Section V.B).

There are significant advantages and disadvantages to understand when considering a by-right approval process:

Advantages

- Eliminates the need for a special permit process.
- Eliminates the developers' fear of discretion and negotiation in the process.
- Eliminates the need to consider waivers.

Disadvantages

- Assumes a one-size-fits all approach.
- Bylaws may be overly prescriptive.
- Eliminates the discretion of the Planning Board.

IV. Yield/ Density of the Parcel

This section presents the three measurements and two methods used to determine the yield or density of a parcel. For the purposes of this report, yield and density are assumed to be the same and are therefore used interchangeably.

A. Measuring Yield by Lots, Units, or Bedrooms

One key factor when determining the yield of a parcel is whether or not the parcel is sewered or unsewered. Within sewered and unsewered, non Zone II**,** areas, yield determination would be based on the number of single-family house lots, while units would be the basis of measurement for two- and multi-family housing types.

Within unsewered areas located in a designated Zone II Wellhead Protection Areas, yield must be determined using number of bedrooms as the measurement. The number of bedrooms plays a key factor due to the implications of providing for on-site wastewater systems. In order to calculate the appropriate size of an on-site wastewater system, the Massachusetts Department of Environmental Protection uses the baseline wastewater generation to be 110 gallons per day

(gpd) per bedroom. Industry standards also assume that the average single family house contains four bedrooms, resulting in wastewater generation of 440 gpd per single family house.

Historically, the distinction between sewered and unsewered parcels has not been an issue because most cluster-type bylaws were prohibited within unsewered areas. Furthermore, most bylaws have also restricted uses to only single family housing types. Therefore, there was no need to determine yield based upon units or bedrooms.

In the few existing bylaws reviewed to date that allow clustering within unsewered areas there is no direct mention of the number of bedrooms to be permitted because this determination is referred to the Board of Health, the local board responsible for administering Title 5 requirements. Furthermore, even fewer bylaws permit the construction of community septic or wastewater systems. Therefore, Planning Boards have typically only been concerned with the ability to accommodate individual, on-site septic systems for each single-family house on a potential lot.

B. Methods Used for Determining the Basic Maximum Number

"It is important to continually stress the purpose of conservation development as "chiefly a technique to rearrange the pattern and distribution of the roads and structures on the site." There needs to be a clear understanding that the determination of yield in an open space development is "not a devious tool to increase the overall number of houses being built on a parcel by including wetlands and other unbuildable areas as part of the acreage upon which density is calculated….Calculating the [yield] in open space developments must be done in a way that is fair to all parties. Whether or not density bonuses are also offered…there must be a clear and equitable method for determining the number of dwellings that will be permitted on individual properties" (Arendt, *Rural By Design*, p. 234).

There are generally two ways that the yield in an open space development is determined: first, a formula or equation; second, based on a yield allowed under conventional zoning. Some bylaws reviewed require the yield to be calculated using both methods in order to provide a comparison, then leaving the final determination to the discretion of the Planning Board. This method, however, is often seen as arbitrary and uncertain by developers. Additionally, if each method is fairly and accurately regulated in the bylaw, submittal of both methods would be redundant.

1. Formula

The basic principal of the formula method is to subtract environmentally constrained land and land that will be consumed by infrastructure requirements from the total parcel area. This would result in the potentially buildable land area. To calculate the yield, the potentially buildable area is divided by the square footage lot requirement of the underlying zoning district. This process would essentially eliminate the need for the filing of a conventional subdivision plan (either preliminary or sketch) that would illustrate the conventional yield of the parcel.

A typical formula reads as follows:

Step one:
(Total area of land subject to the application) – (Area of wetlands, riverfront area, and waterbodies) = Applicable Land Area

Step two:
((Applicable Land Area) x (.90)) divided by the Minimum Lot Area = Total Number of Lots

This formula is designed to subtract a percentage of the existing wetlands and the area that will be used for roads and other infrastructure. This results in the applicable land area, which is then divided by the specified minimum lot size for a conventional subdivision. In the example above, 100% of the existing wetlands, riverfront areas, and waterbodies would be subtracted. The .90 multiplier is used to deduct area occupied by roadway and other infrastructure. Another example of a formula follows:

$$\text{Total Number of Lots} = \frac{\text{Total Acreage - .5 X Wetland Areas - .1 X Total Acreage}}{\text{Lot Size}}$$

This above formula requires 50% of the existing wetland areas to be subtracted, and 10% of the total acreage to be subtracted because it will likely be occupied by roadways.

Determining the appropriate percentage of wetlands and other environmentally constrained land to subtract from the gross acreage is tricky business, the goal is neither to end up with significantly more lots (to anger citizens that are against increasing density) or significantly fewer lots (to remove the incentive for a developer) (See Arendt, *Rural By Design*, p.235).

Many planners feel that formulas are often too simplistic and do not account for the uniqueness of each parcel. A formula indicates a one-size-fits-all approach and is not necessarily the most appropriate way to evaluate the carrying capacity of land.

2. Conventional Subdivision Yield

This method is based upon the number of units that would reasonably be permitted upon the parcel under a conventional subdivision plan in full compliance with all zoning, subdivision regulations, health regulations, wetlands regulations, and any other applicable laws and regulations of the municipality or State. This determines the parcels as-of-right yield, or essentially its "neutral" density, and is the baseline for the comparison of a conventional subdivision to a conservation development plan (See Arendt, *Growing Greener*, p.35).

The conventional yield plan (sketch or preliminary) results in the number of lots/units/bedrooms that would be permitted in the conventional development. This number then becomes the maximum number that will be permitted within an open space development, subject to any allowable density bonuses (See Section VIII. Incentives).

Conventional subdivision yield can be determined from either a "yield plan" or a full-blown preliminary conventional plan submittal. It is up to a community to determine which plan and level of detail necessary (See discussion above in Section III.A.).

V. Dimensional Requirements

This section discusses reasons for reducing lot sizes, presents two regulatory methods that achieve this and identifies other dimensional requirements of significance.

A. Reasons for Reducing Lot Sizes

"When [conventional] minimum lot sizes are used to govern development density, there is no possibility for conserving undivided open space because all land must be allocated either to house lots or to streets. For example, two-acre lots in a two-acre district are totally land-consumptive… [instead land-conserving designs should] require one-acre lots in a two-acre district" (Arendt, *Growing Greener*, p.10). "Conservation subdivisions become possible only by reducing the overall density or by reducing lot sizes. In other words, by building fewer homes, or by building the same number of homes on a smaller portion of the site" (Arendt, *Growing Greener*, p.43). **For purposes of this report, it is assumed that bylaws do not require reduced density and therefore bylaws must allow for reduced lot sizes**.

When establishing dimensional requirements for a CSD or cluster-type bylaw a community needs to consider the following:

- Use caution not to create a bylaw that adopts excessive or unreasonable dimensional requirements, or one that stifles the creative design process. It is critical to remember that the "key concepts to emphasize when regulating open space development are flexibility and performance" (Arendt, *Rural By Design*, p.233).
- Allow for flexibility of lot sizes in order to provide reasonable opportunity to accommodate the lot/unit/bedroom yield and achieve considerable open space preservation.
- Allow for flexibility of lot sizes to accommodate a mix of uses such as two-family, multi-family, or a mix of housing types depending upon what a bylaw allowed for in its Applicability section.

Lot sizes on unsewered parcels

One of the most frequently perceived obstacles to CSD in areas without public sewer involves the disposal of wastewater. Typically, the minimum lot size has been 1.5 to 2 acres for the purpose of ensuring that each lot has sufficient suitable land for both a drinking water supply well and a septic system. While consideration must be given to lot sizes within unsewered areas, communities should not jump to the conclusion that development on unsewered parcels cannot be clustered. Even if lots are reduced by fifty percent, the result may still be a lot large enough to accommodate an individual septic system. Alternatively, leaching fields can be sited within the designated open space, outside of lot-lines. Additionally, alternative and innovative wastewater systems can be used.

Larger lots provide absolutely no guarantee that the suitable percolation soil will be included within each lot. In fact, large lots frequently result in the creation of lots that contain only marginal soils (Arendt, Rural by Design, p.46). "Unless soils are uniformly poor across the entire parcel…the variations in soil conditions that typically occur within a parcel offer an opportunity for clustering to produce better systems than would be possible following a conventional approach with standardized lot sizes in a checkerboard layout…. Reducing lot size can sometimes help subdivision designers locate all homes on the better [percolation] soils contained within a development site" (Arendt, *Rural by Design*, pp.209-210).

B. Two Regulatory Methods for Reducing Lot Size

There are generally two regulatory methods used for reducing lot sizes. The first method specifies reduced minimum lot sizes and is referred to as "prescriptive." An example of prescriptive language would read as follows, "lot size can be reduced up to fifty-percent, but to a minimum of 10,000 square feet, from what is required in conventional subdivision." Essentially minimum lot size is based upon the amount of open space a community chooses to require within each development.

In an effort to assist communities in this determination, the following sliding scale displays the interrelationship between required open space, reduced minimum lot size under CSD, and conventional lot area. Minimum lot area under CSD was calculated by subtracting a total of 40%, 60%, or 80% from the conventional minimum lot area. The total percent subtracted is based upon the required open space plus an additional 10% for roads.

% Open Space	CSD minimum lot area with 10% road reduction*	Conventional Minimum Lot Area
At least 30%	60,000 sq. ft.	100,000 sq. ft.
At least 30%	48,000 sq. ft.	80,000 sq. ft.
At least 30%	36,000 sq. ft.	60,000 sq. ft.
At least 30%	24,000 sq. ft.	40,000 sq. ft.
At least 30%	12,000 sq. ft.	20,000 sq. ft.
At least 30%	6,000 sq. ft.	10,000 sq. ft.
At least 50%	40,000 sq. ft.	100,000 sq. ft.
At least 50%	32,000 sq. ft.	80,000 sq. ft.
At least 50%	24,000 sq. ft.	60,000 sq. ft.
At least 50%	16,000 sq. ft.	40,000 sq. ft.
At least 50%	8,000 sq. ft.	20,000 sq. ft.
At least 50%	4,000 sq. ft.	10,000 sq. ft.
At least 70%	20,000 sq. ft.	100,000 sq. ft.
At least 70%	16,000 sq. ft.	80,000 sq. ft.
At least 70%	12,000 sq. ft.	60,000 sq. ft.
At least 70%	8,000 sq. ft.	40,000 sq. ft.
At least 70%	4,000 sq. ft.	20,000 sq. ft.
At least 70%	2,000 sq. ft.	10,000 sq. ft.

**It should be noted that minimum lot areas under 10,000 sq. ft. may be applied to two-family and multi-family units as minimum square footage per unit rather than minimum lot size.*

The relationship of the sliding scale is simple: the less land consumed within lot lines, the more land that can be added to the open space parcel(s). Such lot reductions enable creative design, but there is no guarantee that this reduction will be enough to accommodate the "neutral density" and also provide the desired amount of open space. Coming up with numbers that would work on all parcels, while not impossible, is difficult. Therefore, when specifying minimum numbers the bylaw should allow the Planning Board to grant waivers when necessary to achieve a better design (See Section VIII.B Site Specific Design Standards).

The second method encourages the reduction of dimensional requirements not by specifying minimum lot sizes, but by encouraging the modification of lot sizes through "flexible" dimensional requirements. This flexibility is based upon implications related to Title V and the marketplace. Flexible language could read, for example,

> The Planning Board may grant a reduction of all intensity regulations of the underlying zoning regulations for all portions of an open space development if the Board finds that the reduction will result in better design, improved protection of natural and scenic resources, and will otherwise comply with these regulations.

It is common to find this flexible statement qualified with a table of minimum requirements that may set limits on maximum and minimum lot size, minimum frontage, minimum front, side- and rear-yard setbacks. Again, even with this more flexible language, when limiting dimensional standards, a community must determine if they want their bylaw to enable waivers.

Choosing a Flexible or Prescriptive Method

In situations where the Planning Board has discretion and the ability to waive selected provisions, problems often result particularly in towns lacking well-informed Planning Board members and staff. The decision to craft either a prescriptive or a flexible bylaw should be based in part upon the following:

1) Whether or not there is well-informed planning staff that can work closely with the developer throughout the process to continually work and incorporate the goals of the Town into the design;

2) The degree of sophistication of the Planning Board. The Planning Board, in the absence of planning staff, needs to understand the CSD principles and fully support them, must know how to bargain with developers, and must have a good grasp of what should and could be waived in order to guide the developer to a better subdivision while meeting the goals of the community; and,

3) Understanding that the down-side of a prescriptive regulation is that it will usurp one of the best features of the CSD idea – that each parcel is unique and should be looked at on a case-by-case basis to ensure the best development design for that particular parcel.

C. Reducing Other Dimensional Requirements

In addition to reducing lot sizes, the following dimensional requirements should also be considered in order to provide increased design flexibility:

- *Frontage*: typically reduced to a minimum of 50 feet

- *Yard setbacks*: typically reduced by 50%

- *Minimum width at building line*: flexibility here can enable flexibility in lot shapes

- *Maximum impervious surface per lot*: It is necessary to enable an increase in impervious surface per lot in proportion to a reduction in lot size. For example, many developers will elect conservation development only if they can build large square-footage homes on small lots. Limits on impervious surface per lot may preclude them from doing this, in which case they may lose their incentive and revert to a conventional subdivision filing.

- *Lot shape*: To provide maximum design flexibility, and therefore keep the developer from abandoning the CSD process, communities should give serious consideration to "flag" or "pork chop" shaped lots. If allowed, certain safeguards should be included in the bylaw to prevent abuses ("such as "rat-tail" subdivisions where numerous lots have long, snake-like appendages connecting the lots to a distant public road…") (Arendt, *Rural by Design*, p.210).

VI. Open Space and Wetland Issues

There are four main questions regarding the open space requirement that need to be answered by each bylaw or regulation:
1) How much open space should there be?
2) Which land should remain as undeveloped open space?
3) What should the allowable uses of the open space be?
4) Who or what will own and manage the open space?

A. Quantity of open space

Typically, bylaws specify a required percent of the total parcel size that must be preserved as open space. This percentage falls within a range of 10%-70%. An entry level of 10% is normally intended to attract as many users as possible. The higher percentages are intended to ensure that the project yields appropriate open space benefits according to a Town's goals. Adoption of CSD design principles generally assumes a minimum of 50% open space. In addition, many bylaws include a provision that requires all reductions in dimensional requirements to be incorporated into the open space.

It is extremely critical for any bylaw to clearly indicate that the required percent of open space is a *minimum*. This enables a voluntary increase and has important implications as it relates to the quality of the open space (see below for further discussion).

Additionally, a bylaw should be constructed to ensure that all land worthy of preservation is protected, rather than setting an arbitrary percentage that may not reflect the needs of individual parcels. The trick when setting a percentage is to ensure that the maximum amount of all valuable land (land containing pre-identified primary and secondary resources) will be preserved.

B. Quality of open space

Historically, communities have not been satisfied with the quality of open space that has resulted from cluster subdivisions. It was too often the unbuildable or "junk" land such as wetlands and steep slopes. In order to prevent this, current bylaws typically include fairly detailed provisions relating to the quality of the open space. Important considerations when addressing quality are as follows:

1. Uplands / Wetlands

Most bylaws specify a percentage (typically 50%) of the open space that must be upland. Other bylaws regulate the percent of wetlands that may be included within the open space. Specifying a percentage typically does this or stating that, there can be no more wetlands in the open space than there exists as a percentage of the entire parcel.

There are different schools of thought as to whether wetlands should be located within the preserved open space:

- Wetlands deserve the highest level of protection possible – in other words, within the protected open space. If wetlands are left within the boundaries of a private house lot, they are subject to neglect or misuse (intentional or not) by a homeowner.
- The open space requirement should be satisfied by land that is developable, therefore "saving" land that could have been lost to development. If wetlands can count toward the open space, then a bylaw may indeed be making undevelopable land developable.

One compromise may be to allow wetlands within the open space but to allow only a certain percentage to count toward the open space requirement. This way, wetlands receive the protection they deserve and potentially developable land is preserved.

2. Usability

In communities where the need for recreational facilities has been identified, usability has been incorporated as a provision to regulate the quality of open space by specifying that a minimum percentage must be "usable." Usable open space is intended to be land that is appropriate for passive and/or active recreation and is usually defined as upland areas without excessive slopes or wetlands that could preclude the intended purpose. Usability plays an important role in regulating the quality of open space because even though a bylaw may regulate the minimum percentage of uplands and/or wetlands it does not guarantee that any of the open space will be void of excessive slopes.

3. Shape

The shape of the open space has also played an important role in determining the usability of the open space. Very often, the open space set aside was the "fingers" of land between houses. To

avoid this, communities have chosen to regulate the shape of open space, and typically require that open space be contiguous. "Contiguous" is usually defined as both large and connected. "Connected" is then further defined as physically touching or not. For example, land is still connected even if it is separated by a road or accessory amenity. Bylaws may also specify a minimum width for which thin strips or narrow areas will qualify as open space.

4. Impervious Surface

Bylaws typically regulate the maximum percentage of the open space that may be covered by pavement or accessory structures such as access driveways, parking areas, and accessory amenities (including pools, tennis and basketball courts and small associated structures). Maximum percentages typically range from 5% - 20%.

5. Disturbed Area

Consideration should be given to regulating the maximum percentage of open space that may be "disturbed" rather than just impervious. Disturbed would be defined as all impervious surfaces *in addition* to areas that are altered from its natural state, such as areas that have been cleared of vegetation or were graded. It is important to include recreational uses such as soccer and baseball fields in the category of "disturbed land," as these are certainly not a natural state.

6. Unproductive Provisions

Many communities fall into the trap of including open space design guidelines or provisions that may be neither valuable nor necessary to the goals of their bylaw. One trap to avoid is an unnecessary requirement for a perimeter buffer strip used to screen the development (something not required of conventional subdivisions). Very often these provisions were written into bylaws for "political" reasons in order to appease neighbors who thought that the open space/cluster subdivision would decrease their property values. However, a well-designed open space subdivision will, by definition, be consistent with community character and will preserve the natural features of the landscape, therefore making a perimeter buffer strip unnecessary if its sole purpose is for screening (not to be confused with a resource buffer strip that may serve a valuable conservation purpose). Additionally, because a buffer strip is usually included in the open space set-aside requirement less open space area would be included in a useful, contiguous parcel.

Another trap to avoid is requiring all lots to front on the open space. The goal may be noble, but realistically, simply ensuring all residents "reasonable access" to the open space parcel is sufficient. Good design should determine not only how the open space is configured but also where the house lots will then "fit" into the landscape. It is likely that all houses will not "fit" next to the open space.

C. Uses of open space

Use of the open space should be determined by the priorities of the bylaw as well as the resource constraints of individual parcels. The design guidelines that dictate the quality and location of the open space should also lead to a compatible use and the choice to allow either passive or active recreation. For example, if open space land contains sensitive wildlife habitat it is not suitable for

the placement of a baseball field and should be allowed to remain undisturbed. Perhaps "no use" is the best use.

The placement of utilities within the open space is a question of allowed use. For example, will a community allow stormwater management structures (retention and detention ponds) and septic system leach fields within the open space? Consider unsewered parcels that have 15,000 square foot lots and must provide for both on-site drinking water and wastewater disposal. If shared septic systems are encouraged and common leaching fields are allowed to lie within the open space, such an arrangement may make conservation development possible.

D. Ownership and management of open space

Massachusetts General Law Chapter 40A, Section 9 specifies three options for ownership of the open space within a cluster subdivision:

- **Homeowners Association**. A corporation or trust to be owned by the owners of lots within the development. Ownership passes with the conveyances of the lots.

  Several problems were noted with this mechanism. First, there is considerable cost to the developer for attorney fees necessary to create the Association's legal documents. Second, developers have expressed discontent with Association's because during a phased construction project there is some threshold, while several lots remain undeveloped, at which the Association will start to take control. Naturally, this is control that a developer may not want to give up. Third, what is in the best interest of the land and its resources may not be the main concern of the homeowners. It is necessary to determine if this is the best long-term option for preservation and maintenance of the open space parcel.

- **Private Land Trust**. Ownership can be deeded to a nonprofit corporation, the principal purpose of which is the conservation of open space.

- **Local Conservation Commission**. The developer can deed ownership to the City or Town, which may accept it for park or open space uses. A savvy developer will consider the tax benefits of this option.

Regardless of the ownership entity, provisions should be made for the long-term protection of the open space. Ensuring that the land is protected in perpetuity can best by done by a Conservation Restriction. Additionally, an operation and maintenance plan should be adopted for any open space parcel.

VII. Design Guidelines

The section presents generic and site specific design elements that communities should discuss and consider. Design guidelines are intended to establish the physical sense of a development. Elements of the physical environment include buildings, structures, landscaping, buffer strips, roads, and paths (Arendt, *Rural by Design*, p. 407).

A. Generic Design Standards

1. The landscape shall be preserved in it natural state, insofar as practicable, by minimizing tree and soil removal. Any grade changes shall be in keeping with the general appearance of the neighboring developed areas. The orientation of individual building sites shall be such as to maintain maximum natural topography and cover. Topography, tree cover, and natural drainage ways shall be treated as fixed determinants of road and lot configuration rather than as malleable elements that can be changed to follow a preferred development scheme.

2. Proposed development shall be related harmoniously to the terrain and the use, scale, and architecture of existing buildings in the vicinity that have functional or visual relationship to the proposed buildings. Proposed buildings shall be related to their surroundings.

3. Streets shall be designed and located in such a manner as to maintain and preserve natural topography, significant landmarks, and trees; to minimize cut and fill; and to preserve and enhance views and vistas on or off the subject parcel.

4. All open space (landscaped and usable) shall be designed to add to the visual amenities of the area by maximizing its visibility for persons passing the site or overlooking it from nearby properties.

5. The removal or disruption of historic, traditional or significant uses, structures, or architectural elements shall be minimized insofar as practicable, whether these exist on the site or on adjacent properties.

B. Site Specific Design Standards

1. Housing Types.
   a. Mixed: bylaws that allow for mixed housing types consideration should be given to allocating maximum percentages of each type. For example, specify a maximum of 34% single-family, 33% two-family, and 33% multi-family.
   b. Single family: provide specific guidelines regarding what percent of single family units may be attached versus detached.
   c. Two- and multi-family: provide guidelines regarding the size, scale, massing and maximum number of units within each structure. In addition, the bylaw should specify a maximum number of parking spaces per unit (typically two per unit).

2. Common/Shared Driveways. Consideration should be given for the incorporation of allowing common/shared driveways. The bylaw should specify a maximum number of units that may be served by such driveway.

3. Buffers. Instead of mandating a 50-100 foot perimeter buffer, communities should consider specifying that a 25-50 foot visual buffer consisting of natural and landscaped material be located between existing dwellings and the CSD. Consideration should be given to wetlands and surface waters, specifying that a 100-foot natural buffer be provided.

4. Setbacks from Adjacent Structures. Consideration may be given to require that new structures be located at least 50-75 feet from structures located on adjacent properties.

5. Screening and Landscaping. Specify that large parking areas are screened and request and accompanying landscape plan. Communities need to define "large" as they see fit. In addition, the bylaw should require that all structural stormwater facilities be accompanied by a landscape plan.

6. On-Site Pedestrian and Bicycle Circulation. Walkways and bicycle paths should be provided to link residences with parking lots, recreation facilities (including parkland and open space), and adjacent land uses. The bylaw should refer to the Subdivision Regulations for specific design/engineering standards.

VIII. Incentives

This section presents optional incentives available for consideration by a community. Incentives are generally viewed as a way to promote the attractiveness and usability of a bylaw.

A. Density Bonuses

A density bonus simply means an increase in the number of lots/units/bedrooms beyond the yield/density permitted in the underlying zoning district. Density bonuses can be granted for any number of reasons. Because developers often seek density bonuses, a Planning Board can use a density bonus to achieve community goals such as affordable housing or the further creation of open space. Additionally, density bonuses are often given to developments that comply with specific design guidelines or that base yield/density on the impact of development.

It is important to note that a density bonus, whether intentional or not, may be given if yield/density is based upon a formula that does not specify a reduction in wetlands equal to that required under conventional zoning.

By providing a density bonus, communities can address the argument that conservation subdivision is not as economically competitive as conventional subdivision. The number of houses that a conventional subdivision developer can build dictates the price of land acquisition. If you assume that house lots in conservation subdivisions are smaller and therefore command a lower market price (which is not something we believe to be true), developers will need to build more houses in order to absorb the land cost. If the bylaw requires neutral density, it is obvious that developers will choose to build a conventional subdivision.

Although they may seem to clearly have their place in the open space subdivision process, the use of density bonuses is controversial. Arendt clearly states three reasons why this is (Arendt, *Rural by Design*, p.229):

- There is popular resistance to "giving" developers any extra units at all.
- If incentives become too large it becomes difficult to preserve much buildable land as open space.

- Unless the financial incentive is substantial most developers will not be willing the change from their conventional and familiar "cookie-cutter" approach.

B. Waivers

Waivers are essentially modifications to specific requirements within the bylaw. Waivers play an important part of the approval process by providing additional flexibility needed to achieve the best possible design. Waivers are typically applicable to dimensional requirements such as lot areas, frontage, and yard setbacks in addition to open space requirements such as quantity and quality. In addition, some bylaws allow for waivers in exchange for increases in the amount of open space.

When considering the inclusion of waivers, two options are available. First, the bylaw would contain a separate section dedicated to waivers, essentially stating that all requirements may be waived in order to achieve the purposes of the bylaw and to enable a better design. Second, the bylaw would indicate specific provisions that may be waived.

It should be noted that traditionally bylaws contain additional language regarding modifications to subdivision standards such as roadway widths, curbing, cul-de-sac and drainage. However, if Subdivision Rules and Regulations are written specifically for CSD developments, than waivers become unnecessary because the Regulations themselves will already provide for the necessary reductions in the standards. In other words, communities should adopt a new section in their Subdivision Rules and Regulations that will be applicable to development under the CSD/open space bylaw.

C. Simplify and Expedite the Special Permit Process

Without restating this entire report, it is necessary to confirm again that nothing can be a better incentive than a procedural process that is fair and unambiguous. Communities must not keep setting moving targets for developers to meet as they move through the process. Because they are building the type of subdivision that is favored by a community, and are furthering the goals set by the town, the atmosphere should be one of cooperation.

D. Raise the Standards for Conventional Subdivision Development

By increasing the requirements and standards for conventional subdivision development, communities can level the playing field between the two techniques. If the development standards for a conventional subdivision are not that easy to meet, then the standards for CSD will not seem so stringent. Stricter standards for conventional development will become an incentive to build under the cluster-type bylaw.

The Town of Hopkinton utilizes this incentive. Dead-end streets are only allowed within Open Space and Landscape Preservation Developments. In other words, by prohibiting this attractive building technique within conventional developments, they have made CSD more attractive to developers. Westborough utilizes this principle effectively by requiring *all* subdivisions that will

create more than six house lots to file an Open Space Community concept plan – they have clearly leveled the playing field.

E. Rate of Development Bylaw

Communities that have a Rate of Development Bylaw should consider linking it with a cluster or CSD bylaw to create a tremendous incentive. Typically, a development schedule of a Phased Growth/Rate of Development Bylaw can be altered in the developers' favor if they incorporate into their subdivision various principles and practices that promote community goals. Basically, if the development will have a positive effect on the community, such as creating open space links or providing affordable housing, the community should be willing to increase the percent of dwelling units for which building permits may be authorized each year. The Town of Amherst utilizes this connection successfully. For further information on this incentive see the attached summary of the Amherst bylaw attached in Appendix A.

CHAPTER 4
SAMPLE BYLAW REVIEW

I. Methodology

Bylaws reviewed were selected in a fairly non-scientific way. MAPC planners engaged in discussions with various land use planners, activists, educators, and land developers in Massachusetts and ultimately identified several bylaws that were possible candidates for inclusion in this review. Bylaws were considered only if their purpose was similar to that of the CSD basic principle – land conservation and preservation of resources (environmental, cultural, and fiscal) while still accommodating the development potential of a parcel.

This review is intended to determine alternative methods that various communities use to address the critical bylaw elements/components of a cluster-type bylaw (refer to the planning commentary of the previous section). Simply reviewing the bylaw is not sufficient to understand how it actually works in a community; therefore discussion was held with the City/Town Planner or the Planning Board to gather further insight.

The summary results of each review are presented below. Appendix A includes the complete bylaw review with a chart summarizing a bylaw's components followed by commentary (when necessary). This review is intended to highlight certain element(s) of each community that were considered unique, provide a lesson-learned, or point out alternative ways to approach certain elements.

II. Summary of Bylaws Selected for Review

This section provides an overview of the unique features for each of the twelve (12) bylaws reviewed for this project:

A. Town of Acton, Zoning Bylaw, Section 9, Planned Conservation Residential Community (PCRC)

This bylaw does not refer to any minimum lot areas or dimensional requirements. In addition, it calculates yield/density based upon the maximum the number of units per square feet of area of the parcel including open space. The bylaw refers to extensive Special Permit Rules and Regulations specifically intended for PCRC.

B. Town of Amesbury, Zoning Bylaw, Section D, Cluster Residential Special Permit

Applicants are strongly encouraged to attend a pre-application conference and determination of project density at which they will submit a Sketch Plan to the Planning Board prior to formal application for a Special Permit. The Sketch Plan includes a Yield Plan (indicating believed number of buildable residential lots if site were developed as a conventional subdivision) and a Cluster Plan (indicating the primary and secondary resource areas of the parcel). If an applicant does not attend a pre-application conference and determination of project density they must file a preliminary Conventional Subdivision Plan fully complying with the Rules and Regulation governing the Subdivision of Land.

While the four-step design process of Randall Arendt is not specifically written into the bylaw, the design concepts and goals of the process are captured in the bylaw. Amesbury has included significant design standards that should lead to the protection of the most valuable land on a parcel.

Amesbury's bylaw very clearly stresses the quality of development and by doing so believes that the town is addressing a major concern of developers – that clustered subdivisions will not carry the same price tag as conventional development. Developers do need some way to make up profit lost from reduced lot sizes (assuming that the savings from reduced infrastructure requirements will not do this on its own). The density bonus can begin to address this problem. Cracknell stresses that by promoting good subdivision design and creating functional open space, lots will not lose value even if they are smaller. Instead, the price of a house can incorporate the increased value of the open space.

C. Town of Amherst, Zoning Bylaw, Section 4.3, Cluster Development

Amherst has made Cluster Development mandatory in three Resource Protection Districts, the Watershed Protection, Aquifer Recharge Protection, and Farmland Preservation Districts. This bylaw also encourages affordable housing and has been successful at increasing the use of the bylaw because of its connection with the communities Rate of Development bylaw. Amherst is known to be very successful at using its cluster bylaw to achieve intended goals of the community.

D. Town of Foxborough, Zoning Bylaw, Section 9.06, Open Space Residential Development (OSRD)

This bylaw incorporates a unique approval process. Prior to the special permit process, the Planning Boards holds a public hearing at which a preliminary conventional plan and a conceptual OSRD are reviewed and approved. In addition, within Primary Resource Areas and Zone III the bylaw determines maximum lot yield/density based upon total sewage flow. This bylaw also allows for waivers within the open space requirements.

E. Town of Grafton, Zoning Bylaw, Section 5.3, Major Residential Development

This bylaw requires the issuance of a special permit for a flexible development or a conventional development for the creation of a Major Residential Development. It refers to average lot areas and allows density bonuses based upon compliance with specific Design Guidelines.

F. Town of Groton, Zoning Bylaw, Section 2128-26, Open Space Residential Development

This bylaw is divided into flexible and cluster development. It allows for the creation of "incentive lots" which is a form of Transfer of Development Rights (TDR) to be used for mandatory affordable, or low to moderate, income housing.

G. Town of Hopkinton, Zoning Bylaw, Article 9, Open Space and Landscape Preservation Development (OSLPD)

Hopkinton has been incredibly successful at preserving open space through their OSLPD bylaw and have created significant open space corridors. As of May 13, 1999 twenty-one definitive OSLPD subdivision plans had been approved totaling approximately 1, 099 total parcel acres of which approximately 600 acres (or 54%) were open space.

The application process for an OSLPD is comprised of two steps. In the first, the applicant submits a concept plan describing the overall development. The Planning Board shall then grant or deny the special permit based upon this information. If the special permit is granted, tha applicant then submits a definitive plan. Hopkinton does not offer a density bonus as an incentive to use the OSLPD bylaw.

One key to the Hopkinton bylaw is the fact that the Special Permit is decided upon during Step One of the development process, the Concept Plan. It thereby removes a developer's uncertainty relating to the granting of a Special Permit before they have invested significantly in the development design.

H. Town of Lexington, Zoning Bylaw Section 9.5, Cluster Subdivision, Special Residential Development

Lexington thought long and hard about why its old (pre-1996) cluster provision was not being used. It concluded that there was no economic incentive for developers to use it and several economic and procedural disincentives. Lexington sought to level the economic playing field to provide an economically feasible alternative to standard, one house – one lot standard subdivision. The 1996 Annual Town Meeting approved the Planning Board's comprehensive revision of the cluster zoning provisions by a vote of 126-39.

The basic Lexington cluster scheme is a type of density bonus. A developer can build more dwelling units than in a standard subdivision if they are smaller and have fewer bedrooms and provided the development proposal doesn't exceed five impact factors (gross floor area, living area, site coverage, total number of occupants, and vehicular trip generation). The maximum development in a cluster is not based on density (dwelling units per acre) but on the five impact measures, equating to roughly twice the number of houses that could be built in a standard subdivision. The developer can choose along a range of more dwelling units if they are smaller and have fewer bedrooms or fewer dwelling units if they are larger and have more bedrooms.

The extreme flexibility offered by Lexington's cluster provisions is shocking to many developers who have had experience with cluster elsewhere. The Planning Board simply advises them to design the site with the best relationship between buildings and the land and other buildings. Then draw the lot lines in last.

I. Town of Lincoln, Zoning Bylaw, Section 8, Open Space Residential Development & Planned Community Development

This bylaw is intended to provide for a greater mixture of housing types at greater densities without a significant increase in population density. It requires Site plan Review by the Planning Board and a Special permit from the Zoning Board. The bylaw allows for a 100% increase in the number of units within the R-1 district. The bylaw includes a series of definitions regarding open space.

J. Town of Westborough, Zoning Bylaw, Section 4300, Open Space Communities (OSC)

In the Town of Westborough, a developer proposing the subdivision of land into a major residential development (that is, the potential creation of more than six residential house lots on a property or set of contiguous properties in common ownership) must prepare two sets of concept plans. One plan shall describe a conventional subdivision while the second shall describe an OSC. Through this zoning provision, Westborough has leveled the playing field between conventional and open space zoning by requiring *ALL* major residential developments to file an OSC plan.

The Planning Board has the power to render the decision as to which concept plan the developer will design and build. The Planning Board will grant a Special Permit triggering that subdivision design will proceed for an OSC if the Board determines that the OSC concept plan is more beneficial to the Town than the conventional plan. Determination is based on superiority of a plan to preserve open space for conservation, agricultural, or recreation, utilizing natural features of the land, and allowing more efficient provisions of public service. Since the adoption of the OSC bylaw approximately six OSC subdivisions and four conventional subdivisions have been approved.

K. Town of Westford, Zoning Bylaw, Section 173-25, Flexible Development

This bylaw incorporates the four-step CSD design process. It refers to flexible development and allows a 50% density bonus based on open space, housing restricted for 55+ and compliance with specified design guidelines.

L. Town of Westwood, Zoning Bylaw, Section 16C, Major Residential Development

This bylaw essentially mandates the filing of a dual submission consisting of a preferred development plan and a substantially different alternative plan for all developments that meet the definition of a major Residential Development. The Planning Board chooses the basic Development proposal. This bylaw does not specify a minimum percent of open space and allows for density bonuses.

LIST OF REFERENCES

Arendt, Randall. *Rural by Design*. Chicago: American Planning Association, 1994.

Arendt, Randall. *Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks.* Washington, D.C.: Island Press, 1996.

Arendt, Randall. *Growing Greener: Putting Conservation into Local Plans and Ordinances*. Washington, D.C.: Island Press, 1999.

Cracknell, Nicholas J. (Amesbury Town Planner) and Jay McPartland (Wojcicki McPartland Development). *Growth Management Tools and Techniques: Options for Preservation of Natural, Cultural and Historic Resources in Massachusetts Cities & Towns*. Discussion Paper. September 14, 1999.

Graduate School of Design, Harvard University. *Mass Bay Commons*. (In cooperation with the Metropolitan Area Planning Council). February 1998.

Lacy, Jeff. *An Examination of Market Appreciation for Cluster Housing with Permanently-Protected Open Space*. Center for Rural Massachusetts, University of Massachusetts, Amherst. August 1990.

Massachusetts Historical Commission. *Preservation through Bylaws and Ordinances: Tools and Techniques for Preservation Used by Communities in Massachusetts*. Prepared by Christopher Skelly, Director of Local Government Programs. December 17, 1998.

Natural Lands Trust, Inc. (with Randall Arendt). *Growing Greener: Putting Conservation into Local Codes*. November 1997.

APPENDIX A

BYLAW REVIEW: SUMMARY AND ANALYSIS OF SELECTED BYLAWS

Appendix A – Bylaw Review: Summary and Analysis of Selected Bylaws

ACTON	
Name (Section 9)	Planned Conservation Residential Community (PCRC)
Purpose and Intent (Section 9.1)	• Preservation of significant land and water resources and natural, historic or archeological resources • the maintenance of the Town's New England character as a suburban residential community, while encouraging a greater mixture of housing types and more energy efficient and cost effective residential development • the development of land in harmony with its natural features, the existing and probable future use of the adjacent land
Eligibility (Section 9.2)	The bylaw is applicable on all land and parcels previously incorporated into the PCRC zoning district as well as in the R-2, R-4, R-8/4, R-8, R-10/8 and R-10 districts.
Approval Process/Procedural Requirements (Section 9.4)	Bylaw requires a special permit from the Planning Board. Submission shall include a site plan showing the information required by the Rules and Regulations for PCRCs including existing and proposed conditions. If the PCRC requires approval under the Subdivision Control Law, the site plan shall comply with the requirements of the Definitive Subdivision Plan by the Acton Subdivision Rules and Regulations.
Dimensional Requirements (Section 9.6.2)	Minimum tract size shall be 8 acres. There are no minimum lot area, frontage, width or yard requirements. However, the Planning Board may impose appropriate conditions on the location of buildings and structures.
Lot Yield/ Density (Section 9.6.2.3.)	The maximum number of dwelling units per square feet of area of the tract including the common land: R-2 20,000 sq. ft. R-8 & R-10/8 80,000 sq. ft. R-4 & R-8/4 40,000 sq. ft. R-10 100,000 sq. ft.
Open Space Criteria, Ownership, and Maintenance (See Sections 9.6.3.1 to 9.6.3.3)	Minimum of 60% of the land shall be set aside as common land for the use of the residents and general public. The minimum required area of common land shall not contain a greater % of wetlands than the % of wetlands found in the overall tract of land. Common land shall be dedicated and uses for conservation, historic preservation, recreation and agriculture. Maximum of 5% of the common land may be impervious. Common land may be used for septic and leaching systems. Common land in excess of the minimum required and upland may be used for drainage structures. Shall be conveyed in whole or in part to the town, a non profit organization for conservation purposes or to a corporation or trust owned or to be owned by the owners of the units within the PCRC. Any land not conveyed to the town shall have a perpetual restriction prohibiting any development.
DensityBonuses	None allowed.
Design Guidelines (Sections 9.6.2.1, 9.6.2.5. 9.6.2.6, and 9.7)	Minimum of 2 parking spaces per unit including garages shall be provided. No more than 4 units in any building. Each unit shall have two separate exterior entrances at ground level. The peak rate of storm water runoff from the development shall not exceed the rate existing prior to the new construction based upon a 10 year design storm. Whether or not a subdivision, all streets both public and private, wastewater disposal and drainage facilities and utilities shall be designed and constructed in accordance with Subdivision Rules and Regulations however, the PB may grant exceptions. Land on opposite sides of a street may be permitted to qualify as a single lot. Common land shall be one or more large, contiguous and separate parcels.

ACTON	
Criteria for Granting the Special Permit (Section 9.5)	Planning Board shall consider the existing and probable future development of surrounding areas; the appropriateness of the proposed layout of streets, lots, and structures; the proposed layout and use of the common land in relation to the proposed units.
Bylaw vs. Regulations	The bylaw refers to Special Permit Rules and Regulations for Planned Conservation Residential Community.

Summary of Acton's Planned Conservation Residential Community (PCRC)

According to Donna Jacobs, Assistant Town Planner, the main purposes of the bylaw are environmental protection and character retention. The PCRC bylaw was adopted in the late 1980's as a result of the community not being satisfied with the quality of development from traditional subdivisions. Much of this dissatisfaction was an outcome with the Open Space Development bylaw, essentially an early version of a cluster bylaw, which was used by developers until 1995. The OSD bylaw was extremely rigid with its regulations. The PCRC was designed to be more flexible and as a result the majority of developers now uses it.

Jacobs stated that a preliminary scoping session with the Planning Department and a member of the Planning Board is encouraged and typically shortens the permit process to 3-5 months. "Clarity" in the process and expectations is key for success, and therefore a 26 page detailed set of Rules and Regulations and specialized applications were developed specifically for PCRC submittals. A Development Impact Report is required to assist the Town in its evaluation of the proposed development in the context of existing conditions and planning efforts by the Town. Jacobs stated that the DIR was designed to assess broad scale issues much like a MEPA review does.

Jacobs described the Acton Planning Board as "technically savvy" and cited that the Board reviews proposals within the context of the master Plan and Open Space and recreation Plan. As a result, for the demand of additional recreational areas, the Board has required as a condition of approval that the common land be available for the use of the general public. In addition, existing trails are preserved or bike paths constructed so as to create a connected system between adjacent properties. Furthermore, the bylaw specifically states "the Planning Board shall consider the existing and probable future development of the surrounding area". This evaluation criteria has been used by the Board to require that all proposed cul-de-sacs must be designed and located for future "projection" to adjacent undeveloped land. Essentially, the Board approves "temporary turn arounds" with the understanding that the cul-de-sac will be connected to an adjacent development sometime in the future to create a network of streets. Jacobs states that with these provisions the Planning Board believes that the PCRC bylaw "creates neighborhoods."

The bylaw was adopted to discourage garden style apartments, but promote town houses. This was accomplished by including the statement, "each unit shall have two separate exterior entrances at ground level." Waivers from subdivision regulations are not needed because the Subdivision Regulations have been revised to reflect the desired design standards.

AMESBURY	
Name (Article D, Zoning Bylaw)	Cluster Residential Special Permit (CRSP)
Purpose and Intent (Section 1)	• promote the more efficient use of land in harmony with it natural features • preservation of valuable open space; maintenance of the Town's traditional character and land use pattern in which small villages contrast with open land • protect water bodies and supplies, wetlands, flood plains, agricultural or forestry lands, wildlife, and other natural, cultural or historic resources • minimize total disturbance on the site and preserve open space areas for active and passive recreational use, including the provision of neighborhood parks and trails • permit greater flexibility and more attractive, efficient, economical design of residential subdivisions • facilitate economical and efficient provision of utilities • guide development consistent with the Town's Master Plan • meet housing needs and promote diverse and energy efficient housing at a variety of costs
Eligibility (See Sections 2,4, and 5)	CRSP can be used in Residence 20, Residence 40, Residence 80, and Light Industrial districts (Section 2). Its use is mandatory in the Rural Cluster District. The applicant must have a tract in single or consolidated ownership that is at least ten acres (Section 4). Allowed uses are: one-family detached dwellings; residential structures with up to four dwelling units utilizing common wall construction; church or other religious purposes; agriculture on parcels greater than five acre; public parks; conservation areas and preserved open space; and, membership clubs for the exclusive use of the residents of the development (Section 5.).
Approval Process/Procedural Requirements (See Section 3 and 7)	**<u>Pre-application conference and determination of project density</u>** Applicants are **encouraged** to submit preliminary plans and materials to the Planning Board prior to formal application for a Special Permit. • Applicant may submit a Sketch Plan to assist in determination of permitted maximum number of dwelling units. Sketch Plan will include: 1. Yield Plan – indicating believed number of buildable residential lots if site were developed as a conventional subdivision 2. Cluster Plan – indicating the primary and secondary resource areas (defined in the bylaw) • Planning Board has until its next scheduled meeting (or 35 days) to make a determination as to the number of conventional lots that can be achieved on the proposed site. • No preparation of a Conventional Subdivision Plan required **<u>No pre-application conference and determination of project density:</u>** Applicant **MUST** file a preliminary Conventional Subdivision Plan fully complying with the Rules and Regulation governing the Subdivision of Land. **<u>All applicants MUST file a Cluster Subdivision Plan including:</u>** • **Cluster Residential Plan** must be filed and include 21 listed items, such as: 1. site plan prepared by a professional engineer, registered architect or landscape architect 2. location of existing primary and secondary resources 3. percent of building lot coverage 4. may be required to show measures proposed to prevent pollution of surface or ground water, soil erosion, increased runoff, and flooding • **Site analysis** showing primary and secondary resources • Filing of requested supplemental materials pertaining to ownership & maintenance of open space • **Review of other Boards**: Board of Health, Conservation Commission, Town Engineer, Community Development Office and Fire Department shall be sent a copy of the Cluster

AMESBURY	
	Subdivision Plan and have 35 days to review and comment to the Planning Board (Section 3.f.). **<u>CRSP generally</u>** The Planning Board may require a performance bond from the developer to ensure the proper installation of all improvements including streets, drainage, water systems, sewerage, utilities, grading.
Dimensional Requirements	**Clustering Single Family Detached House Lots** 1. Minimum lot size: in zoning districts R-80, R-40, R-20, and IL is 10,000 square feet. 2. Lot frontage: not less than 100 feet 3. Lot shape: size and shape in harmony with the natural features of the site. 4. Building site: clearly designated and situated as to provide open space for each dwelling unit 5. Yard requirement: minimum of 25 feet for front and rear yards/ 15 feet for side yards 6. At least 50% of the cluster lot shall be open space 7. **Waivers** - to protect or enhance the primary and secondary resources the Planning Board may waive: • lot frontage to 80 feet • front setback to 15 feet **Clustering Attached Structures** 1. 50 feet minimum between structures 2. 50 feet minimum width of open land between any building cluster and adjacent property not part of the cluster 3. 1,000 sq. ft. minimum of open space for each dwelling unit for the exclusive use of the unit occupants
Lot Yield/ Density (See Section 3)	**Applicants that have a pre-application conference and determination of project density:** permitted maximum density allowed as-of-right under CRSP shall be the number of conventional lots, as determined by the Planning Board, times 120%. **Applicants that do not have a pre-application conference and determination of permitted density:** permitted density shall be determined by the Planning Board after it has reviewed the materials submitted in accordance with a Cluster Subdivision Plan.
Open Space Criteria, Ownership, and Maintenance (See Sections 6 and 9)	**Required amount** • At least 50% of a clustered single family project shall be open space. • A minimum of 1,000 square feet per dwelling unit in an attached structure cluster shall be open space. • In the Rural Cluster District, the required common open space shall equal 70% of the tract. • In no instance shall the area of the common open space be less than the square footage of the areas by which the lots are reduced below the minimum lot area required for conventional development. **Wetland inclusion** No more than 50% of the common open space shall be situated within the Wetlands and Floodplain Protection District or contain other wetland resources. **Ownership of common open space** • Land that will be principally used by the residents of the cluster should be conveyed to a homeowners association. Natural resource land such as wetlands not suitable for any public use or land suitable for extensive public recreational use should be conveyed to that Town or to a trust. • If the open space is required for an overriding public need, such as school siting, that determination must be made at the time the special permit is issued.

AMESBURY	
	Management of the common open space Documents must be recorded with the Registry of Deeds, includes provisions for management, maintenance, operation, improvement and repair of the common open space and facilities thereon.
Density Bonuses (See Section 3.a.)	For applicants that have a pre-application conference and determination of project density, permitted maximum density allowed as-of-right under CRSP shall be the number of conventional lots, as determined by the Planning Board, times 120%.
Design guidelines (See Section 8)	**1. Open space** • shall be planned as large contiguous areas with long thin strips or narrow areas (less than 100 feet) occurring only when necessary for access, as vegetated buffers along wetlands or the site perimeter, or as connection between open space areas • shall be arranged to protect or enhance the primary and secondary resources • shall be provided with adequate access, by a strip of land at least 20 feet wide, suitable for a footpath, from one or more streets in the development **2. Wetlands and water resources** Where the proposed development abuts or includes a body of water or a wetland, these areas and the buffer to such areas shall be incorporated into the open space. Where appropriate, reasonable access shall be provided to shorelines. **3. House lots** Good design should influence the number of house lots that will abut the open space and should ensure that all lots have reasonable physical and visual access to the open space. These things should not occur at the expense of vulnerable resources. 4. Development along existing scenic roads and creation of new driveway openings on existing regional roadways shall be minimized. 5. Developments abutting land held for conservation purposes shall be configured to minimize adverse impacts to that land and to provide trail connections where appropriate.
Criteria for Granting Special Permit (Section 3.g.)	The Planning Board shall make the following determinations: • the plan is superior to a conventional one in preserving open space for conservation or recreation, and in utilizing the natural features of the land • building sites have been identified and are not located closer than 100 feet to wetlands and waterbodies • lots and streets have been located to avoid or minimize adverse impacts on open space areas and to provide views of and access to the open space for the lots • more efficient provisions of streets, utilities, and other public services • not have detrimental effects on the abutting neighborhoods • consideration has been given to recommendations of the Amesbury Master Plan
Miscellaneous Incentives	The bylaw is written to incite applicants to choose to seek a pre-application conference and determination of project density. Incentives given to applicants who are a density bonus of 20% and an exemption from filing a preliminary conventional subdivision plan. Disincentives are included in the bylaw as well for those who don't go this route; the density allowed is determined by the Planning Board after it has reviewed their submitted materials.

Summary of Amesbury's Cluster Residential Special Permit (CRSP)

Keys to successful cluster
Amesbury Town Planner, Nicholas Cracknell, believes that the keys to cluster development are a clear ordinance and sufficient support within the community to promote it and enable it to be flexible enough so that it can work. There is a line to draw as to how detailed a bylaw should be. There is no way to program protection for every resource needing it. Discretion is needed but in combination with technical assistance.

Process to determine lot yield/density
Cracknell suggests that a model cluster bylaw not have a formula to determine allowable lots or yield. A formula indicates a one-size-fits-all approach and is not an appropriate way to evaluate the carrying capacity of land. The Amesbury bylaw encourages developers to submit a Sketch Plan including both a Yield and Cluster Plan. The Yield Plan will indicate the number of residential lots believed to be buildable if the site were developed as a conventional subdivision. The cluster plan will identify and indicate the primary and secondary resources. By looking at these two plans together, seeing how potential lots and resources overlap, the Planning Board determines where lots could actually "fit" on the land. This process stresses the quality of the land, and not the quantity of lots. Using these tools at a pre-application meeting the Planner and a developer would be able to come to consensus on the number of lots that should be allowed.

Amesbury's process specifically does not require a dual-plan submittal. The Board believe it is not necessary to have a developer spend money preparing a conventional plan that they hope will never be used. It makes more sense to put effort and resources into productive outcomes. Instead, the bylaw asks for the submission of plans that can lead the developer and Board to a resource-based cluster plan.

Density bonus
Because the main goal in Amesbury is to stress quality of development and not number of lots built, they can easily offer a density bonus. The bylaw grants a *20% as-of-right density bonus* to applicants entering the pre-application process. This bonus is expected to help level the playing field between cluster and conventional subdivision. Because the focus is on quality, density can be added or subtracted as long as lots are located where they do not impact identified resources. In other words, why not offer greater density on parcels where the natural resources will not be negatively impacted but limit permitted lots on parcels where the land can not support them? According to Cracknell, the "stick" in this bylaw is that a developer must expend more time and creativity while the "carrot" is a 20% density bonus.

Value of the open space
By stressing quality of development, Amesbury believes that it is addressing a major concern of developers – that clustered subdivisions will not carry the same price tag as conventional development. Developers do need some way to make up profit lost from reduced lot sizes (assuming that the savings from reduced infrastructure requirements will not do this on its own). The density bonus can begin to address this problem. Cracknell stresses that by promoting good subdivision design and creating functional open space, lots will not lose value even if they are smaller. Instead, the price of a house can incorporate the increased value of the open space.

Waivers
Under the CRSP, the Planning Board may only waive dimensional requirements for minimum yard size and lot frontage in order to protect or enhance the primary or secondary resources. Otherwise, the Board can only grant waivers from Subdivision Regulations. Cracknell believes that giving the Planning Board power to waive most of the requirements can cause problems, particularly in towns lacking well-informed board members. It is possible that they will not make good decisions and choose to either waive or not waive requirements that could result in better design and resource protection. Trade-off issues around waivers must be dealt with town-by-town, and each must ask themselves – how much discretion do we give to our Planning Board versus what should we clearly prescribe in the bylaw?

AMHERST	
Name (Section 4.3)	Cluster Development, Town of Amherst Zoning Bylaw
Purpose and Intent	Cluster, an alternative pattern of development, is intended to result in the following benefits: • economical and efficient street, utility, and public facility installation, construction, and maintenance • efficient allocation, distribution and maintenance of common open space • land use harmonious with the natural features • compatibility with the character of the surrounding residential areas • efficient use of land to increase the options for affordable housing • housing development which allows for integration of a variety of housing types within one project • protection of natural resources, including but not limited to aquifers, wetlands, and farmland
Eligibility (See Sections 3.24, 3.25, and 3.28).	The total area of land included within the development must be five acres or more. Cluster development is mandatory in three resource protection districts, the Watershed Protection (WP), Aquifer Recharge Protection (ARP), and Farmland Preservation (FP) Districts.
Approval Process/ Procedural Requirements (See Sections 3.258, Board Rules & Regulations 3 A.)	Applicant must refer to the following: Planning Board Rules and Regulations, Zoning Section 10.3 Special Permits, the Design Standards and Required Improvements in the Rules and Regulations Governing the Subdivision of Land and the Street and Site Work Construction Standards of Amherst. The Planning Board serves as the Special Permit Granting Authority. Cluster developments in the ARP district require preparation of a site plan showing, among other things, drainage recharge features and erosion and sedimentation control measures. **Planning Board Rules & Regulations** Special Permits for cluster subdivision may be filed at the same time as the Definitive Subdivision Plan. The Planning Board may require additional information such as building footprints, driveway layouts, open space design, draft homeowner's covenants and plans for recreational facilities. All applications for cluster subdivision: • must include a sketch plan for the parcel showing a standard subdivision that could realistically be approved by the Board (This is typically waived, see discussion in commentary below); • must submit Homeowners/Condominium Association Documents to the Board for review and approval prior to the release of lots for building; and, • must recognize the intent of the Planning Board that the 120% maximum density bonus for inclusion of affordable units be given only to applications including both low and moderate income affordable units. **Flood-Prone Conservancy District** An applicant must file an additional set of plans that will be given to the Conservation Commission. The Commission has 35 days in which they can investigate the proposed development and report its recommendation to the Planning Board.
Dimensional Requirements	**Lot area** • Table 3, Dimensional Regulations, specifies basic minimum versus cluster minimum lot sizes in five districts. The Residential – low density district, for example, mandates 80,000 sq. ft. lots in basic or 25,000 sq. ft. lots in cluster (see Article 6). • Amherst ensures that lot sizes will be reduced in cluster by requiring a minimum of 50% of all lots to be reduced at least 25% from the minimum lot size required in the underlying zoning district (Section 4.322).

AMHERST	
	• If within the FP District **maximum** lot area is 20,000 sq. ft for cluster, or 30,000 sq. ft. for flag lots. Maximum size is used here to ensure particularly small lots and larger tracts of preserved farmland. • In the ARP District maximum lot coverage is regulated at 15%; maximum building coverage at 10%. In this district it is more important to regulate for ground cover than for lot size. **Front yard setbacks** Reduced within cluster subdivisions in order to encourage houses to be built closer to the street (to create more pedestrian oriented neighborhoods in the "neo-traditional" manor): • 25 – 40 feet in conventional developments reduced to 10-20 feet in cluster developments (with higher density zones such as village center residence allowing less setback, and lower density zones allowing greater setbacks) **Frontage** Table 3, Dimensional Regulations, specifies reduced cluster lot frontages versus basic minimum frontage in conventional Residential districts: • Low Density: 100' versus 200' • Outlying Residence: 100' versus 150' • Neighborhood Residence: 80' versus 120' • Village Center Residence: 60'versus 120' • General Residence: 50' versus 100' Reduced requirements may by modified even further at the Planning Boards discretion, but frontage may not be reduced further for more than 50% of the lots (Section 4.3232).
Lot Yield/ Density	The maximum density of a cluster subdivision (except an affordable cluster) is to be calculated by the following formula: density = $\frac{\text{(parcel area) minus (10\% of the parcel area)}}{\text{(minimum lot area for the district in which the parcel is located)}}$ It is a clearly stated intention that a cluster subdivision not result in more lots than would be allowed in a conventional subdivision (Section 4.3231). This number is determined from a Sketch Plan, showing a standard subdivision that could realistically be approved (Planning Board Rules & Regulations, Section 3E.). There are provisions elsewhere in the Zoning Bylaw that give the Planning Board discretion to grant additional density (Section 4.33 for affordable housing) or reduce density (Section 4.384 for protection of environmentally sensitive areas). The **Farmland Preservation District** is subject to a different density calculation (Section 4.327). This formula factors out unbuildable land area, defined as combined acreage of all wetlands, land in the Flood Prone Conservancy district and 100-year floodplain area. Three steps determine the maximum number of building lots allowed in a Cluster Development: 1. Determine Net Parcel Area by subtracting 50% of the area of all Unbuildable Land Area from the total parcel acreage. 2. Subtract 10% of the resulting Net Parcel Area for road allowance 3. Divide the remaining 90% of the Net Parcel Area by the Basic Minimum Lot Area for the underlying zoning district.
Open Space Criteria, Ownership, and Management (See Sections 4.34, 4.35, and 4.382)	The area of Common Land required is determined by a linear ratio: every square foot of reduction in lot size becomes a square foot of common land. Of that, at least 2000 sq. ft. per dwelling unit must be usable open space for active and passive recreation. The usable land can not include parking, roadway or sidewalk area, land within the Farmland Preservation District or wetlands. Wetland can be included in the common land, but it can not factor into the required "useable" amount.

AMHERST	
	For cluster within the Farmland Preservation District there are Development Standards including, locating lots and infrastructure on the soils least suitable for farming, and maintaining views of open agricultural lands from nearby public ways. Common Land Design Requirements – majority must be contiguous, large blocks; as accessible as possible to most residents; physical and visual access from the dwelling units maximized; preserve the original landform and existing vegetation. Connections to existing and proposed trails are encouraged, though not formalized in the bylaw language. **Ownership options for the Common Land** 1. be conveyed to the Town and be accepted by it for park or open space use 2. be conveyed to a non-profit organization, whose primary purpose if open space conservation 3. be conveyed to a corporation or trust owned or to be owned by the lot owners 4. be conveyed to a private, non-profit or public entity for the purposes of farming, with a Town enforceable restriction that such land shall either be actively farmed or kept in an open and natural state for future farming uses **Farmland Preservation District** All common land that is not used to satisfy the requirement of "useable" open space must become permanently preserved farmland and either be actively farmed or kept in an open or natural state for future farming uses. Additionally, all Unbuildable Land Area (which includes wetlands) shall be protected by a permanent agricultural preservation restriction recorded on the deed. Title may remain with the original farmland owner or be conveyed to the Town, a homeowners association, or a non-profit farmland trust or similar conservation organization whose principal purpose includes the preservation of farmland.
Density Bonuses (See Section 4.3231, 4.330, 4.38, 4.384)	The maximum density, except for an affordable cluster, shall not exceed the allowed density for a standard subdivision in any zoning district. It is the intended that a cluster subdivision not result in more lots than would be approved for a standard subdivision under a Definitive Subdivision Plan. A density bonus (of up to 120% of the maximum number of units otherwise allowed) is given only if a minimum of 10% of the total units are designated as affordable. The "Board may reduce the number of lots otherwise allowed for the protection of aquifers, wetlands, or other environmentally sensitive areas."
Design Guidelines (See Section 4.38)	General design requirements are specified for vehicular and pedestrian circulation, screening and buffers, common land, utilities and services, protection of environmentally sensitive areas, and building sitings.
Applicable Requirements Regulated outside of Zoning	Planning Board Rules & Regulations specify further information that must be supplied with a Cluster application. See Approval Process/ Procedural Requirements section above for list of three.
Miscellaneous Incentives	**Connection between Cluster and Phased Growth Bylaw** The Development Schedule is affected by the incorporation of various principals and practices that can be part of a Cluster development. Points can be given and modified by the Planning Board if the Cluster incorporates affordable housing, provision of useable open space, protection and retention of farmland, and aquifer protection. Similarly, points are deducted for development of farmland or within the Aquifer Recharge Protection Overlay District. Simply having a Cluster development will add points to your total. There are discretionary points that can be granted or deducted by the Planning Board based on various site design principals, amelioration of development impacts, and infrastructure improvements.

Summary of Amherst' Cluster Development Bylaw

Process
Development under the Cluster Bylaw begins by drafting and filing a preliminary Cluster Plan. At this early stage the Developer is encouraged to meet with the Town planning staff and/or Planning Board to enter a give-and-take discussion about the proposed plan. It is helpful for the cluster process if the Town and Developer can come to understand each other's needs and wants, thereby paving the way to a working relationship down the road. During this preliminary process the planning staff will often give the Developer a list of elements/requirements that they will likely waive if the Developer carries through with the Cluster Plan. According to the Town Planner, Bob Mitchell, much of Amherst' success comes from the hand-holding done by the planning staff and the commitment of the Planning Board to the cluster bylaw.

Based on feed back from the Planning Board and staff on the preliminary Cluster Plan, the developer will prepare and file both a Definitive Cluster Plan as well as an application for special permit (these can be filed simultaneously). If they are filed simultaneously, the Town will hold one public hearing for both the Definitive Plan and the Special Permit, thereby saving the developer time and money and speeding up the permitting process.

Although the Planning Board Rules & Regulations require a Sketch Plan showing a standard subdivision that could realistically be approved on the parcel this is typically waived by the Planning Board. Such a submittal is unnecessary.

Connection between Cluster and Rate of Growth Bylaws
Section 14.0 of the bylaw, Phased Growth, is intended to encourage certain types and patterns of growth and to "ensure that growth occurs in an orderly and planned manner that allows the Town to develop and maintain high quality municipal services for an expanding residential population while allowing a reasonable amount of additional residential growth." It is important to note that in times of a declining or suffering real estate market any exemption from the development schedule may not manifest itself as an incentive to build according to certain principles. If Developers are unable to sell houses, having the ability to build more of them at any one time is not necessarily a sought after ticket. Typically, for a developer wishing to build residential dwelling units in Amherst, gaining points by building a cluster subdivision can be an effective way to go.

The Development Schedule of the Phased Growth Bylaw is affected by the incorporation of various principals and practices that can be part of a Cluster development. A complete discussion of the Phased Growth bylaw is beyond the scope of this report. Generally, it is important to note that the Development Schedule operates on a point system whereby the total points affect the percent of dwelling units in the development for which building permits may be authorized each year. Points can be given and modified by the Planning Board if a cluster subdivision incorporates affordable housing, provision of useable open space, protection and retention of farmland, and aquifer protection. Similarly, points are deducted for development of farmland or within the Aquifer Recharge Protection Overlay District. Simply having a cluster development will add points to your total. There are discretionary points that can be granted or deducted by the Planning Board based on various site design principals, amelioration of development impacts, and infrastructure improvements.

Open Space
Although stated purposes of the bylaw include "protection of natural resources, including but not limited to aquifers, wetlands and farmland," and "land use harmonious with the natural features" (Section 4.31), there are only a few general environmental standards specified for the resulting undeveloped land area. The bylaw itself does not specify good design principles and provides no guidance on which land should remain undeveloped (except for within farmland preservation areas and brief Common Land Design Standards in Section 4.38). The bylaw, as written, seems concerned more with the provision of "useable" open space than with the preservation of the most unique or valuable natural features/resources of the land. Nor is there clear guidance provided to developers to ensure that scrub-land is not what becomes the open space. Recognizing this shortfall, the Town will be developing (currently planned for Fall 2000) a design standards workbook for cluster and residential development, which will include open space quality and design standards.

Amherst, however, is very successful at using its cluster bylaw to achieve intended goals of the community. Therefore, Amherst lends support to claims that bylaw language itself is not the most critical factor for success. Success results from the culture and the ability of the town, it's Special Permit Granting Authority, the Planning Board, and planning staff to strongly support the bylaw and cooperatively work with developers throughout the process.

The connection of the Cluster bylaw to the Phased Growth bylaw is such that the later provides some limited guidance for a developer and encourages adherence to several good open space subdivision design principles. Points affecting the rate of development schedule can either be earned or lost for a site design that among other things, protects the most valuable soils for farmland, provides open space and parkland, limits development in the Aquifer Recharge Protection District, and protects natural features and the character of the neighborhood.

Through the Special Permit process the Planning Board pushes for open space connections to the existing extensive trail system. This is the culture of Amherst, and the fact that it is not regulated does not often preclude the Board from ensuring such connections. Bob Mitchell advises that this may not be practicable in other towns and they may want to formalize such a process.

When asked about the management of the resultant open space in a cluster subdivision Mitchell expressed that it is the use of that land that is of a greater concern to the Amherst than who manages it. However, to his knowledge, a main consideration for developers if forming a Homeowners Association is that at some threshold the Association will start to take control while undeveloped lots still remain. Naturally, the developer does not want the Association to have any say in the development of those remaining lots. Additionally, there is a considerable added cost for attorney fees necessary to create the Association's legal documents.

Wetlands

Around the time that this report was being written Amherst was receiving development applications for parcels with considerable amounts of marginal land, or land with many environmental constraints. According to Mitchell, several problems result from this; too much wetland ends up within the common open space and/or too much ends up within the lot lines. There are several ways the bylaw language could affect the placement of wetlands:

- By increasing the 2000 sq. ft. requirement for useable open space, developments would have to provide more useable open space that cannot contain wetlands (Section 4.344).
- To reduce the amount of wetland being placed with the lot-lines, the town changed the definition of "Lot, buildable" to specify that a buildable lot must have either 90% of its total lot area or 20,000 sq. ft. as contiguous upland acreage.

Discretionary Powers of the Planning Board

Waivers from Subdivision Regulations are typically granted to the Developer of a cluster. For example, as incentive for the Developer the Planning Board often waives street widths (cluster roads constructed are typically only 22 feet), required sidewalks on both sides of any street, and street light requirements.

It has been expressed by some that making the use of cluster mandatory hinders the Planning Boards discretion and weakens the bargaining power that can serve to ensure the protection of community resources. Simply put, the argument stems from the fact that a developer can say "it is mandatory here so you, Town, cannot deny us." Mitchell thinks that this is certainly a double-edged, or even triple-edged sword. First, in his experience his Planning Board has not lost any discretionary bargaining power where cluster is mandatory. Secondly, he believes that few people will chose to build clusters unless it is mandatory. Thirdly, he believes that if any bargaining power were lost, it certainly would be made up for in benefits to the community by the fact that cluster, and not conventional, developments will be built.

Mitchell recognizes that it is the culture of Amherst and most of its Developers to protect the resources of the community, respect the rural character, and to work with the Board to create an efficient cluster development. In fact, Amherst has been lucky. For other communities Mitchell suggests that in order not to lose bargaining power under a mandatory cluster, a town must decide what outcome it strives for and then create a detailed regulation

programming that outcome. Amherst' bylaw has very little detail as to the ultimate design of a cluster and the open space. If an uncooperative developer were to arrive there is potential for the Town to end up with unfavorable cluster development. The down side is that a detailed bylaw will usurp one of the best features of the cluster idea – that each parcel is unique and should be looked at on a case-by-case basis to ensure the best development for that particular parcel. Mitchell suggests that the level of prescriptive detail be based upon the: 1) culture of the town; 2) whether or not there is a planning staff; and 3) degree of sophistication of the Planning Board. In other words, does the Planning Board and staff understand the cluster principles and how to bargain, what should be waived, all the ins and outs, well enough to guide the developer to a better subdivision while meeting the goals of the community.

Changes made to the bylaw over time

Originally the Special Permit Granting Authority (SPGA) was the Zoning Board of Appeals while the Planning Board (as always) handled the Subdivision approval. This arrangement did not work and, in fact, was a large **disincentive** for developers to use the Cluster bylaw. Requiring approval from two different local boards meant that developers had to get the same plans approved twice and they often received conflicting messages from the boards. In order to make the process reasonable, and to remove the disincentive, the Amherst Planning Board now acts as the SPGA.

Additionally, the definition of a buildable lot has been changed to reduce the amount of wetland that was being placed within lot-lines.

FOXBOROUGH	
Name (Section 9.06)	Open Space Residential Development (OSRD)
Purpose and Intent (Section 9.06 A)	• To permit maximum flexibility and creativity for the design of single family developments which will be superior to conventional plans. • Promote the harmonious use of the lands' natural resources, features and topography • discourage sprawling development, minimize environmental disruption and provide a shorter network of street and utilities • encourage the preservation of open space by permanently preserving open and wooded areas within the development
Approval Process/Procedural Requirements (Section 9.06 C & D)	Bylaw requires a special permit from the Planning Board. A pre-application review and public hearing is required and intended to allow the Town the opportunity to discuss the proposal with the applicant prior to the special permit process. A preliminary conventional plan and conceptual OSRD plan prepared by a professional architect, engineer or landscape architect shall be submitted. Percolation and depth-to-groundwater tests shall accompany this plan for lots not served by Town sewerage. If the conventional plan and conceptual OSRD plans are approved, a combined special permit and Definitive Subdivision Approval hearing will occur.
Dimensional Requirements (Sections 9.06 B.4, and B.5)	Conventional Lot Size – 40,000 sq.ft. per lot OSRD Lot Size – 20,000 sq. ft. per lot Conventional Frontage – 200 feet OSRD Frontage – 50 feet Parcel must be a minimum of 7.5 acres. Within the primary resource area the minimum lot size is 30,000sq. ft. of upland area and 20,000sq. ft. within Zone III.
Lot Yield/ Density (Sections 9.06 B. 3, B. 4 & B.5)	The number of building lots may not exceed the number of building lots as permitted under existing zoning and conventional subdivision regulations. This number shall be based upon the conventional plan. Within the Primary Resource Area and Zone III the maximum number of lots allowed shall be determined by compiling the total sewage flow allowed for the total upland area within each of the lots as approved in the conventional plan.
Open Space Criteria, Management, and Maintenance (Sections 9.06 G, and H)	Minimum of 45% of the parcel shall be dedicated open space. At least 70% shall consist of uplands. The open space shall not include paved parking lots, roads or buildings. Open space may be used for drainage systems and or structures. Individual septic systems may also be placed within the open space. The PB may reduce the % open space to 35% based upon unique circumstances. A minimum width of 25 ft. of dedicated open space shall be located between abutting properties and the OSRD. Dedicated open space shall be either conveyed to the town, a non-profit organization for conservation purposes or to a corporation or trust owned or to be owned by the owners of the lots. Where not conveyed to the town, a restriction shall be recorded providing that the open space be left in a natural state in perpetuity. Dedicated open space may be used for recreational uses such as golf courses, riding trails, athletic fields or gardens.
Density Bonuses	None allowed.
Design Guidelines (Section 9.06 E.4)	A 50 ft. visual buffer consisting of natural and landscaped material, shall be located between existing dwellings and the OSRD; in addition to the required 25 ft of dedicated open space. Swimming pools may not be located within 30 ft of a property line of an existing dwelling abutting the OSRD.

FOXBOROUGH	
Criteria for Granting the Special Permit	Finding that the proposed plan is in harmony with the intent and requirement of the bylaw and will not be a detrimental impact on the neighborhood or abutting properties.

Summary of Foxborough's Open Space Residential Development (OSRD) Bylaw

Tim Higgins, Planning Director, stated that the OSRD bylaw was adopted in 1989. Prior to this, two efforts failed to adopt a cluster bylaw at Town meeting. Since its adoption, the bylaw has had some minor revisions. Higgins emphasized that a key to success is not to hesitate in "tweaking" the bylaw as the community evolves in order to be "reasonable in response to reality". For example, the minimum tract size was reduced from 10 acres to 7.5 and that the Planning Board may reduce the % of open space from 45% down to 35% based upon unique circumstances have been recently added. Higgins stated that both of these revisions reflect the changes from a rural to suburban community in that the many of the remaining undeveloped parcels are under 10 acres and would not have been able to use the OSRD bylaw and many of those same parcels have significant environmental limitations such as ledge. Higgins stated that the overall key to the bylaws success was the Planning Board's willingness to "work with the development community to respond to their needs and concerns".

The primary purpose of the bylaw is to discourage sprawl, minimize environmental disruption, encourage preservation of open space and reduce long term municipal maintenance expenses. Since 1989, approximately 100 acres of land have been deeded to the Conservation Commission as open space. The bylaw is geared to be user friendly and no more costly than conventional subdivision. Higgins states that the preliminary subdivision submittal requirement benefits the applicant because a 3 out of 5 vote is adequate rather than the necessary 4 out of 5 votes for a special permit. Due to "equal density" and no provisions for density bonuses, Higgins states that the bylaw must perform a balancing act to entice usage.

Approximately 45-50% of subdivisions are approved under the OSRD bylaw. Developers are enticed to use the bylaw due to the potential savings in infrastructure costs such as roads, which Higgins estimates are as much as 50% lower. In addition, Higgins states that bylaws must reduce lot size and frontage in order to build in flexibility and reasonable meet the intended purposes.

Regarding open space, the primary method of ownership has been deeding the land to the Town. Higgins stated that although there has been significant open space preserved, there has not been a coordinated effort to create a network of open spaces through the OSRD process. Additionally, Higgins states that caution should be used when requiring a dedicated strip of the open space around the perimeter of the parcel, because this works against the overall cluster concept by essentially eliminating a large portion of the parcel, particularly within smaller tracts.

GRAFTON	
Name (Section 5.3)	Major Residential Development (MRD)
Purpose and Intent (Section 5.3.2)	• Greater flexibility and creativity • encourage more economical and efficient development • Permanent preservation of open space, agricultural, forestry and other natural resources • Maintain rural character • protect existing and potential municipal water supplies • Protect scenic views • minimize the disturbance of the parcel
Eligibility (Section 5.3.3)	In order to further the purpose, MRD shall only be allowed after issuance of a Flexible Development Special Permit (FDSP), or a special permit for MRD utilizing Conventional Development (CDSP). A Flexible Development shall mean a MRD in which the single family dwelling units are clustered together into one or more groups on the lot and the clusters are separated from each other and adjacent properties by permanently protected open space. A MRD is defined as the creation or use of more than 5 building lots by subdivision or otherwise. Application for Flexible Development is optional for a Minor Residential Development. Bylaw is applicable only within the R-20, R-40, agricultural and RMF residential districts.
Approval Process/Procedural Requirements (Section 5.3.4)	Bylaw requires a Special Permit by the Planning Board prior to the close of the public hearing, the PB shall recommend the preferred development plan and within seven days the applicant shall elect which plan to pursue. A pre-application meeting is encouraged with the planning Board prior to filing application. All plans shall be prepared by an "interdisciplinary team" consisting of a registered land surveyor, engineer, and landscape. A conventional development plan conforming to the requirements of a preliminary subdivision plan shall be submitted along with a flexible development plan. A comparison / analysis of the impacts examining which plan is the best development option shall also be submitted.
Dimensional Requirements (Section 5.3.6)	Average Lot Area is 10,000 sq. ft. in the R-20, 20,000 sq. ft. in the R-40 and 30,000 sq. ft. in the Agricultural District. Where public sewer and water are available the average lot area may reduced to 15,000 sq. ft. within the R-40 and 25,000 sq. ft. within the Agricultural District. Minimum lot area is 8,000 sq. ft. in the R-20, 12,500 sq. ft. in the R-40 and 20,000 sq. ft. in the Agriculture. The minimum required frontage is 80 feet.
Lot Yield/ Density (Section 5.3.5.1)	Units allowed shall equal the number of units which could be reasonable be expected under a Conventional Development Plan in full conformance within the Zoning and Subdivision Regulations, health codes, wetlands bylaws, and other applicable requirements.
Open Space Criteria, Ownership, and Management (Sections 5.3.7, 5.3.11, and 5.3.12)	Within the R-20 and R-40, a minimum of 40% of the total land area shall be dedicated as Common land. 50% common land is required within the Agricultural District. Up to 50% of the required common land may be wetlands or areas used for stormwater management facilities. The 50 ft setback between dwellings and farmland may be used as Common land. Common land shall be restricted for conservation, historic preservation, recreation, agriculture or forestry. A maximum of 5% of the common land may contain accessory pavement and structures. The land shall be reasonably contiguous and shall be connected with adjacent common land or other permanently protected open space. Drainage structures may be located within the common land if the PB finds uses are consistent with bylaw. Ownership may be conveyed to the town, non-profit corporation or trust to be owned jointly or in common by the owners or retained by the owner or other entity for the use or lease provided the owner conveys the development rights in a conservation

GRAFTON	
	restriction prohibiting future development.
Density Bonuses (Section 5.3.5.2)	Density bonus based upon compliance with the Design Guidelines specified in section 5.3.13. A 15% bonus is allowed if the development complies with at least 6 of the guidelines, 20% if it complies with at least 9 and 25% if it complies with all the design guidelines.
Design Guidelines (Section 5.3.13)	All dwellings shall be setback at least 50 ft. from adjacent parcels and adjacent or on site farmland. Layout of lots shall preserve and maintain existing fields, pastures, other land in agricultural use and natural buffers between adjacent residential and agricultural uses. Maintain or create a 100' natural buffer adjacent to surface waters and wetlands; retain scenic views, particularly along public roads and special places as designated in the open Space and Recreational Plan. A 100' "no build buffer" is recommended to screen homes from the street. Provisions for affordable housing including at least 10% of the total number of units.
Criteria for Granting Special Permit (Section 5.3.8)	In addition to general SP criteria the proposal is in harmony with the existing and probable future uses of the area and with the character of the surrounding area and neighborhood, more beneficial to the Town than conventional development and will be connected to public sewer except when the Board of Health determines that the development can be adequately served by on site sewage disposal systems.
Bylaw vs. Regulations	The Flexible Development provision is not supplemented by separate regulations.

Summary of Grafton's Major Residential Development Bylaw

According to Megan DiPrete, Town Planner, the individual purposes of the bylaw are of equal importance. The MRD was adopted in 1991 and since then has undergone several minor revisions for clarification purposes. No major or significant changes have been made to the bylaw. DiPrete stated that the intent of requiring a special permit for MRD was to promote "coordinated development and avoid cookie-cutter type developments". It is expected that the revision will result in an overall improvement of the site design, particularly to minimize the total amount of site disturbance. Generally speaking, the length of the special permit and subdivision process is dependent upon the quality of the submittal. DiPrete estimates a range of 1 year and longer based upon consecutive processes.

Over the last 4-5 years, 6 conventional and 4 flexible developments have been approved. DiPrete pointed out that the Planning Board is not predisposed to either option, but evaluates each plan based upon the bylaws purpose and the potential impacts. It was emphasized that the Planning Board does not dictate which option to be used, but forwards a non-binding recommendation to the applicant.

Regarding common land, DiPrete stated that the Planning Board refers to the Open Space and recreation Plan when determining connections with adjacent open space. Conveyance of the common land to the Town is the preferred option for the applicant, however this has increasingly become an issue of further analysis and debate centered around the expenses associated with maintenance. DiPrete stated that fewer than expected applicants have chosen to pursue density bonuses by complying with a series of prescribed design guidelines.

Overall, DiPrete stated that the bylaw is very comprehensive and detailed resulting in clear expectations and establishing a level playing field. In addition, DiPrete explains that the significant amount of detail may result in a slightly more difficult bylaw to administer, but the Town has historically been detailed orientated within it's bylaws.

GROTON	
Name (Section 218-26)	Open Space Residential Development (OSRD)
Purpose and Intent (Section 218 –26 A)	• to encourage the preservation of open land for its scenic beauty and to enhance agricultural, open space, forestry and recreational use • to protect the natural environment • to protect the value of real property • to promote more sensitive sitting of buildings and better overall site planning • to preserve the traditional new England landscape • facilitate more economical and efficient layout of public services and roads • promote the development of affordable to low and moderate housing
Eligibility (Section 218-26 B)	Any creation of lots, whether a subdivision or not, from a parcel or contiguous parcels held in common ownership in existence as of October 15, 1990 may use OSRD. No parcel created after October 15, 1990 shall be eligible for OSRD unless the PB determines the development meets the purpose and intent of the bylaw.
Approval Process/Procedural Requirements (Section 218-26 E)	Bylaw requires that a preliminary subdivision plan and design concept plan be submitted. In addition any proposed deed restrictions or transfers of land related to the open space, an environmental analysis including percolation tests (unless served by sewer), wetlands and a report prepared by a professional hydro-geologist indicating the impact of any wastewater disposal systems on any existing or proposed public wells within 2000 ft. or any private wells within 800 ft.
Dimensional Requirements (Section 218-26 F 1 & 2)	Lot Size Lot Frontage Conventional – 80,000 sq. ft. *OSRD Flexible Development – 40,000 sq. ft. 100 feet OSRD Cluster Development – 30,000 sq. ft. for 1st unit plus 15,000 sq. ft. for each additional unit 100 feet *Lots must be shaped to contain a circle of 150 foot diameter within which there is 100% uplands.
Lot Yield/ Density (Section 218-26 C)	The basic number of units allowed on any parcel shall be equivalent to the number of lots into which the parcel could be divided under normal regulations. This shall be based upon the preparation of a preliminary subdivision plan. Additional lots created as affordable and incentive shall not count toward the calculation of the basic number of units.
Open space Criteria, Ownership, and Management (Sections 218-26 F 1.c, 2.e, and D)	Flexible Development – minimum of 25% of a parcel exceeding 20 acres shall be preserved as open land. Cluster Development – All wetlands and a minimum of 35% of the total upland area shall be preserved as open land. Open land shall be conveyed to the Conservation Commission or subject to a permanent conservation restriction.
Density Bonuses	None provided.
Design Guidelines (Sections 218-26 F 1.f, F2. C. D.1.2.3.)	Flexible & Cluster Development – For every 10 lots 1 additional lot shall be made available for a minimum of 30 years via sale, lease or deed restrictions at terms affordable to low or moderate families as defined by EOCD. Such lot shall not count as an incentive lot. In lieu of providing affordable lots, a payment may be negotiated with the Housing Authority. A 50 ft. natural or landscaped buffer shall be located between any existing street and the OSRD. Within Flexible Development affordable housing lots may be used as duplex or triplex units Cluster Development – More than 1 unit maybe located on a lot. Access to all lots must be within the OSRD. A maximum of 10 dwelling units may be served by a shared driveway. No more than 4 units shall be contained in a single structure. No fewer than 50% of the total units shall be detached single family. Structures shall be setback 100 ft

GROTON	
	from an existing street and 75 ft. form abutting property lines. A 50 natural or landscaped buffer shall be located between an existing street and abutting property lines. Multi-family parking areas shall be screened from public ways.
Criteria for Granting the Special Permit (Section 218-26 H)	Finding that the open space residential development better promotes the objectives as set forth in the bylaw than under otherwise applicable rules.
Miscellaneous Incentives (Section 218-26 G)	Within Flexible Development the number of lots may be increased over the basic number of units up to a limit of 20% by utilization of incentive lots. By agreement of its owner, land may be used to establish incentive lots at a rate of 1 incentive lot per 80,000 sq. ft. whether or not contiguous with or in the same ownership as the development, provided the PB makes the following determinations: such land is deemed to be of special importance because of its visual prominence or potential vista blockage, ecological significance, farmland or recreational value, or important to the town's open space plan or future water supply; the credited land must be 100% uplands; area of proposed development does not include qualities as specified above or within a primary water Resource District and prior to issuance of a building permit , the incentive lots are placed into a permanent conservation restriction.

Summary of Groton's Open Space Residential Development (OSRD) Bylaw

According to Michelle Collette, Planning Board Administrator, main purpose of the OSRD bylaw is the preservation of open space. The bylaw has been successful for the following reasons: local developers and the Town's planning consultant were involved in the master Plan Process and therefore supported it, technical assistance, both in the form of Town staff and from a private consulting engineer and the evolution of the OSRD bylaw from an older Flexible Development bylaw.

During the period between 1980-1990, a Flexible Development bylaw was in place. This bylaw allowed for density bonuses, but prohibited multi-family units. Approximately 548 single family dwellings units were constructed under this bylaw. Due to increased growth pressures, in 1990 the Town adopted the Open Space Residential Development bylaw. The bylaw was a recommendation as a result of a Master Planning process.

Since 1990, 90% of all subdivision activity has been approved under the OSRD bylaw. This has resulted in the conservation of approximately 1,100 acres. Most of the developments have been under ten (10) lots and therefore developers have typically chosen the Flexible Development option. The new bylaw allows for multi-family units. But does not provide any density bonuses.

Recently, the Town has initiated a Master Plan Update in which a citizens group has expressed concerns regarding the quality of conservation land that is allowed to be preserved as open land under the flexible development option. The issue pertains to the fact that the bylaw does not specify the quality, that is the maximum amount that can be wetlands. Although in it's present form, the bylaw allows 100% of the required open land to be wetlands within the flexible development option, Collette stated that the final approved plan generally consists of 50% wetlands and 50% uplands.

The affordable housing provision contained in the Flexible Development option has also been a topic of discussion for the Planning Board. Most developers have chosen the option of a negotiated payment to the Housing Authority in lieu of constructing affordable units. Both the PB and Housing Authority have expressed interest in strengthening this provision.

HOPKINTON	
Name	Zoning Bylaw, Article 9, Open Space and Landscape Preservation Development (OSLPD)
Purpose and Intent (See Section I)	• intended as an alternative to conventional subdivision • to provide for the public interest by the preservation of open space and natural landscape features in perpetuity • to promote variety in single-family residential housing patterns • to encourage development designed to accommodate a site's physical characteristics such as: topography, vegetation, water bodies, wetlands, open spaces such as farmlands and meadows, major scenic views and wildlife habitats • to encourage the preservation of important site features • not intended to make undevelopable land developable • not to permit an increase in the number of building lots that would otherwise be possible on a conventional plan
Eligibility (See Sections II and III)	OSLPD is allowed within Residence B, Residence-Lake-Front and Agricultural A Zoning Districts. Can only be used on parcels containing ten acres or more.
Approval Process/Procedural Requirements (See Section VIII)	**Step one: OSLPD Concept Plan** • a description of the overall development plan • **Sketch Plan** – required filing to show development of the parcel as a conventional subdivision • Planning Board refers all Special Permit applications to the Board of Health, Conservation Commission, and other board or agency of their choice for review and comment. They then have 35 days to return comment to the Planning Board. • must be prepared by a registered Landscape Architect • show existing landscape features (including steep topography, wetlands and water resources, rock outcroppings, boulder fields, stone walls, cliffs, forest glades, drumlins, high points, hill tops and ridges) • show existing open areas (including farm fields, meadows, and major long views) A public hearing (the first of two) is then held for the Special Permit application. The Special Permit will either be granted or denied based on the information contained in the Concept Plan (see Criteria for granting the Special Permit section below). If the Special Permit is granted, the applicant then files a Definitive Plan. **Step two: Definitive Plan** • plan must be in accordance with the Hopkinton Subdivision Rules and Regulations • the applicant can request waivers from the Subdivision Rules and Regulations if such an action is in the public interest and is consistent with the intent and purposes of the OSLPD bylaw • a public hearing is held (the second) for the Definitive Plan • the overall concept shall only be reconsidered if there is a substantial variation (defined in the bylaw) between the concept and definitive plans Design review fees can be assessed for both the concept and definitive plan stages.
Dimensional Requirements (See Section V.3)	Dimensional requirements of the underlying zoning districts apply. However, the Planning Board may grant a reduction of all intensity regulations of the underlying zoning for all portions of an OSLPD if the Board finds that such reduction will: • result in better design • improve protection of natural and scenic resources • otherwise comply with the OSLPD regulations • comply with the table of minimum requirements

HOPKINTON	
	Minimum requirements A table is provided giving minimum dimensional requirements in the Residential-B and Agricultural and Residence-Lake-Front districts. For example, Residence-B in a conventional subdivision must have a maximum of 150 feet of frontage (Article 2), but under OSLPD it can be reduced to a minimum of 75 feet at the Planning Boards discretion.
Lot Yield/ Density (See Section V.2)	The total number of building lots on the tract shall be calculated by the below equations. However, the resulting number of lots shall be a guide and the total number of lots shall be determined by the Board using the equation and two other mechanisms as guidelines: a. conventional subdivision sketch plan submitted by the applicant b. information provided by the applicant indicating the development potential of the land, and c. the equation below *Residence-B and Residence-Lake-Front District*: Total number of lots = $\frac{\text{total acreage} - (.5 \times \text{wetlands}) - (.1 \times \text{total acreage})}{45{,}000}$ *Agricultural District:* Total number of lots = $\frac{\text{total acreage} - (.5 \times \text{wetlands}) - (.1 \times \text{total acreage})}{60{,}000}$
Open Space Criteria, Ownership, and Management (See Section VI and VII)	**Amount and Composition** • No less than fifty percent (50%) of the land area shall be devoted to common open space. Land for roads and parking cannot be included. Reduction to 30% is allowed if it is demonstrated that a 45,000 square foot minimum lot area is required due to soils and topography. • No more than 50% of the common open space shall contain wetlands. • There shall be a buffer at the perimeter of the site…sufficient to separate and/or screen the development from abutting properties…no less than one hundred feet in width…shall be considered common open space…the buffer may be reduced. **Ownership and Management** The open space must be conveyed to: 1. town and accepted for park or open space use 2. non-profit corporation whose principal purpose is the conservation of open space 3. corporation or trust owned by the lot owners within the development, ownership shall pass with the conveyance of the lot Land not conveyed to the town: 1. must be placed under a conservation restriction enforceable by the Town; 2. applicant shall include as part of the covenant, a provision that the common open space will be deeded as approved by the Planning Board; and, 3. applicant must include in their OSLPD application a program describing how the common open space will be maintained in perpetuity, including an agreement empowering the Town to perform maintenance (paid for by the lot owners) in the event of failure to comply with the program.
Density Bonuses	No density bonus is given in Hopkinton. The purpose statement of the Hopkinton bylaw clearly says, "[i]t is not the intent of this bylaw… to permit an increase in the number of building lots that would otherwise be possible on a conventional plan…"
Design Guidelines (See Section V and VI)	**Development Standards for the Concept Plan** Standards must be met prior to issuance of a Special Permit relating to traffic congestion, emergency vehicle access, and site design. Design standards include: • preserve and enhance the natural features of the property by adapting the location and placement of structures and ways to the existing topography in order to minimize the amount of soil removal, tree cutting and general land disturbance • identify and ensure preservation of significant and special natural features **Development Standards for the Definitive Plan**

HOPKINTON	
	• the nature of soils and subsoils – as suitable for the intended purposes, • stormwater runoff – shall not exceed peak runoff from the site prior to development • soil erosion and sedimentation control measures **Open Space Use and Design Standards** Standards and requirements for the land that is to remain undeveloped address: • maintenance and improvements to naturally-existing woods, fields, meadows, and wetlands • size and shape of common open space parcel • percentage of imperious surface allowed • allowed uses • location of retention/detention ponds and what can be waived • perimeter buffer – size, shape, composition, allowed no-cut easement, waivers allowed
Criteria for Granting Special Permit (Section VIII.1.A.)	In addition to restating that the OSLPD must meet all standards in the bylaw, the special permit can only be granted if the parcel could be developed as a conventional subdivision and if it provides for efficient use and delivery of municipal and other services and infrastructure. The later is not a stated purpose of the bylaw.
Miscellaneous Incentives (Section V.5. and V.6.)	Dead-end streets and common driveways are permitted in Hopkinton only if within an OSLPD.

Summary of Hopkinton's Open Space and Landscape Preservation Development (OSLPD) Bylaw

Keys to successful cluster
According to the Town Planner, Elaine Lazarus, one key to the Hopkinton bylaw is the fact that the Special Permit is decided upon during Step One of the development process, the Concept Plan. It thereby removes a developer's uncertainty relating to the granting of a Special Permit before they have invested significantly in the development design. Hopkinton believes that this helps to encourage developers to choose OSLPD.

Hopkinton Developer, Ron Roux of Hallmark Construction, Inc., also believes that the Special Permit is not an obstacle to developers because the Town grants or denies the permit based on the information in the Concept Plan. Because the Special Permit will be decided upon before the developer must invest great expense in engineering documents, the risk of expectation backed investments is removed. Additionally, Hopkinton has proven that they will work with the developer during this Concept Plan step.

Lazarus believes that having a Landscape Architect design the Concept Plan is crucial. Additionally, it would best serve the town if at least one member of the Town's design review board was a Landscape Architect.

Process to determine lot yield/density and a density bonus
Hopkinton does not offer a density bonus as an incentive to use the OSLPD bylaw. In fact, it is clearly "not the intent of the bylaw … to permit an increase in the number of building lots than would otherwise be possible on a conventional plan.…"

The use of the bylaw's equation as well as information indicating the development potential of the land (Sections V.2.b. and c.) typically resulted in more lots permitted than were allowed under conventional subdivision, in effect granting a density bonus. Hopkinton eventually amended their bylaw to require that a conventional plan be submitted. Under today's bylaw the Planning Board uses the formulas and the number of lots allowed in a conventional subdivision to guide their decision of the number of lots allowed in an OSLPD.

Roux commented that he finds it acceptable for the same number of lots to be permitted under the cluster as under a conventional plan. He believes that it is more important that Hopkinton keep the bylaw flexible enough so that developers do not end up with fewer lots under OSLPD, but neither is it necessary to offer added density to make OSLPD more attractive. The quality of the lots is what should drive the development.

According to the Hopkinton Planning Board Chair, Ron Clarke, it has not been necessary for the town to offer density bonuses. In fact, the main incentive that they do offer is the decrease in development costs due to reductions in infrastructure. Additionally, the town has been fortunate to have many local developers who care about the community and elect to develop under the OSLPD bylaw. However, in the 1990's the Town was sued numerous times by developers whose conventional subdivision plans were denied by the Planning Board. The town did not lose one suit, and it was clear that all conventional plans that were denied were done so because they did not comply with the rules. It is known that the Hopkinton Planning Board favors OSLPD and their favorable, cooperative attitude has become an incentive to developer's to choose it.

Open Space

Roux believes that wetlands are protected under Hopkinton's bylaw because 50% of the open space can contain wetlands. When he designs an OSLPD he aims to place the maximum allowed acreage of wetlands into the open space. It is his belief that they should be located in the portion of the parcel that will be granted the greatest level of protection, in other words, within the protected open space. Locating wetlands on private property places them at risk of filling and destruction, intentional or not, by a homeowner.

The required perimeter buffer, in effect, is likely a political move intended to decrease neighborhood resistance to clusters. According to Lazarus, residents are typically afraid that allowing smaller lots will decrease the required setbacks and siting a new house close to an existing one. Requiring a perimeter buffer strip may not be a bad policy however if its inclusion in a bylaw will appease abutters and therefore enable more cluster developments to be built. The tradeoff between some noncontiguous open space and the use of cluster at all will likely be worthwhile for the community.

Hopkinton allows the required buffer to be reduced in any case, or enlarged in a Business, Rural Business or Industrial zone. Additionally, Hopkinton may require no-cut easements, conservation restrictions, or something similar on private property where the buffer has been reduced.

Lazarus prefers the open space to be managed by a Land Trust. In her experience, a Homeowners Association is not receptive to allowing public access to what they perceive as their own property and the required insurance becomes a logistical problem for many Associations. Additionally, they are neither consistent nor diligent about maintaining the open space.

Public access to the open space is something not clearly mentioned in the bylaw. This is an issue of concern for Clarke who is of the opinion that the bylaw should clearly allow for public access to open space during daylight hours for passive recreation. He anticipates resistance to this idea from developers who would rather be able to market their OSLPD subdivisions as having the benefits of large tracts of open space as your private backyard. It is, however, the intent of the bylaw to "…provide for the public interest by the preservation of open space…."

The existing bylaw requires that the open space be conveyed before the first building permit can be issued (Section IX.). If the land is going to the Town, the timing for this process is usually an impediment to development – it can only be accepted by the town at Town Meeting, a date which likely will not coincide with the development schedule. Lazarus believes that this could become the subject of a future bylaw change.

Waivers as incentive for use

The Planning Board:

- Can reduce the 100 foot buffer requirement if it makes sense to do so. This enables more significant chunks of open space to be created without "wasting" the required open space set-aside acreage in narrow strips with no ecological value;
- May grant a reduction of all intensity regulations if the Planning Board finds that such reduction will result in better design, improved protection of natural and scenic resources, and will otherwise comply with these

regulations…." The open space bylaw does set minimum requirements that waivers cannot exceed. Because the Planning Board can grant these reductions to a developer they have meaningful bargaining power – the Planning Board can work with the Developer to accommodate any constraints of the parcel and by doing so ensure that cluster will remain the developers choice;

- Can waive lot frontage depth requirements.

Miscellaneous incentives

The dual-plan submittal of a conventional and OSLPD plan has become a tool that the Town uses to show local citizens how much worse a proposed development could be. In the experience of the Planning Board, seeing the conventional versus the open space plan quickly changes the minds of obstructive abutters (Section VIII.).

Dead-end streets and common driveways are permitted in Hopkinton only if within an OSLPD (Section V.5. and V.6.).

Changes made to the bylaw

One substantive change proposed for the Spring 2000 Town Meeting is to expand the applicability requirement for parcels containing ten acres or more to include parcels of five acres or more if located adjacent to permanent open space which will be expanded by the proposed plan. This change, if adopted will increase the opportunities for the use of OSLPD.

LEXINGTON	
Name (Zoning Bylaw, Section 9.5)	Cluster Subdivision, Special Residential Development
Purpose and Intent (Sections 9.5.2 and 9.5.3)	To allow flexibility in the standards and procedures for residential development with three or more dwelling units: • to promote development proposals based on an evaluation of the characteristics of individual sites that is difficult to achieve by applying pre-determined, largely geometric standards • promote the retention and enhancement of the outstanding natural features of open land and of existing man-made features • promote an improved design relationship between new buildings and common open space • permit approval of a development based on an evaluation of the projected impacts of the development rather than density To base the amount of development allowed on the projected impacts of the development on the adjacent neighborhood and municipal facilities and services.
Eligibility Requirements	• 50,000 sq. ft. in smaller lot area zoning district; 100,000 sq. ft. in larger lot area zoning district • Limited to three or more dwelling units
Approval Process/Procedural Requirements (See Development Regulations and Zoning Bylaw Sections 3.4, 9.5.6)	**Special Permit with Site Plan Review (SPS)** The Planning Board's (the Special Permit Granting Authority) Development Regulations recommend the following application process, specify the purpose and information required: a. Sketch Plan (recommended, not required) b. Preliminary Site Development Plan (recommended, not required) c. Definitive Site Development Plan (required) A Landscape Architect must prepare the Sketch Plan and Preliminary Site Development Plan, and coordinate the Definitive Site Development Plan. **Key Requirements:** • A **Site Analysis Map** evaluating physical characteristics of the site. • A **Locus Context Map** of all land within 500 feet of the site. • A **Landscape Plan** showing existing vegetation and all proposed changes and new planting. • **Special Conditions** as proposed by the developer dealing with special site development conditions, building design, occupancy and price limitations, historic preservation, grants of deeds or easements to the town, off-site mitigation **Effect of Impact Measures on Approved Development** (Section 9.5.4.4) • The calculation of occupancy and number of motor vehicle trips is only for the purposes of estimating impacts for approval of a development application. • The calculation of gross floor area, living area, and site coverage is the maximum for approved development. **Waivers** The Planning Board can grant a Special Permit that modifies practically all the standards that apply to a standard subdivision: • types of buildings – one-family attached, two family, townhouses and accessory apartments are permitted • dimensional controls, such as yard setbacks, frontage and area, percentage of site coverage, height • number of dwellings on a lot • minimum lot width • location of off-street parking spaces

LEXINGTON	
Dimensional Requirements See Section 9.2, Table 2	In the Residential One Family (RO, RS) and Residential Two Family (RT) Districts cluster subdivisions must: • Minimum Area of Tract to be Developed: RO – 100,000 sf; RS, RT – 50,000 sf • Minimum Frontage on an existing street: 100 feet • Maximum Impervious surface ratio: RO - .15; RS, RT - .20 • Minimum Common Open Space As a Percentage of Developable Site Area: 25% • Minimum Usable Open Space per dwelling unit: RO – 5,000 sf; RS, RT – 3,500 sf
Lot Yield/ Density See Sections 9.5.3.2, 9.5.3.3, 9.5.4.3 and 9.6	**Density Based on Projected Impacts** The maximum development is **not** based on density (dwelling units per acre) but on five impact measures: • gross floor area • living area • site coverage • total number of occupants • vehicular trip generation The maxima of the five impact measures are based on the impacts of standard subdivision of one-family detached dwellings that could be built on the site. The maximum development permitted may not exceed ANY of the total impacts. The developer can choose along a range of more dwelling units if they are smaller and have fewer bedrooms or fewer dwelling units if they are larger and have more bedrooms. There is no entitlement to maximum development. Rather the amount of development permitted will be based on the Planning Board's evaluation of the proposed development and the extent to which it complies with the criteria for common open space and other criteria for approval (see Criteria for Granting Special Permit below). **Calculation of Maximum Density** The maximum development permitted in a cluster is determined by a formula in the bylaw. The calculation first determines the maximum number of houses in a conventional subdivision and using values described in the Bylaw sets a maximum for each of the five impact measures listed above. The bylaw provides a worksheet for these calculations. **Developments with Significant Public Benefit (DSPB) [see section 9.6]** A DSPB is a bonus provision that allows up to a 25% increase above the maximum impact measures described above provided the Planning Board determines that there are "significant public benefits" (12 categories of eligible public benefits are described in the bylaw) to the adjacent neighborhood and the town generally.
Open Space Design, Ownership and Management See Sections 9.3.4, 9.3.5, and 9.5.7	**Common Open Space** (Section 9.3.4. and 9.5.7) A minimum of 25 percent of the dry land on the site is required for "common open space". Wetlands are excluded from the 25 percent calculation and from the land designated as common open space. In special circumstances the Planning Board may permit the amount of common open space to be not less than 10% of the dry land. The common open space may be deeded to the town or retained by an association of owners in the development. When not deeded to the town, an easement for open space purposes must be granted to the town. **Usable Open Space** (Section 9.3.5) There is a requirement for a minimum amount of "usable open space" for the

LEXINGTON	
	residents for recreational and leisure time use. The finished grade may not be more than 10% and must be covered with materials or turf for pedestrian or recreational use. The requirement in the: • RO district is 5,000 sf per dwelling unit • RS and RT districts is 3,500 sf per dwelling unit. Usable open space may be counted toward the common open space requirement provided it is not designated for the exclusive use of one dwelling unit.
Density Bonuses See Section 9.5.3.2	The basic Lexington cluster scheme is a type of density bonus. A developer can build more dwelling units than in a standard subdivision if they are smaller and have fewer bedrooms and provided the development proposal doesn't exceed the five impact factors described above. The maximum is roughly twice the number of houses that could be built in a standard subdivision In addition to the basic cluster scheme, "Developments with Significant Public Benefit (DSPB)" (see Section 9.6) are a quid pro quo bonus provision that allows up to a 25% increase above the maximum impact measures described (See Lot Yield/Density section above).
Design Guidelines See Section 9.5.5	A Site Plan must meet several Design Criteria pertaining to the following: • common open space protects the outstanding natural features of the site • buildings are sited and oriented well with respect to the open space and to other buildings • negative visual impacts of the development are screened from adjacent properties • access is provided to town systems such as open space, bike or foot paths • buildings with more than one dwelling unit have the exterior appearance of one family dwellings • there are common facilities such as recreation or parking and common provision of maintenance There are separate Design Guidelines issued by the Planning Board that address exterior materials and appearance that relates to the single family houses in the neighborhood.
Criteria for Approval of the Special Permit	The proposed development must meet all Design Standards specified in Section 9.5.5. Criteria for approval have greater reliance on qualitative standards and not on technical-dimensional standards.
Bylaw vs. Regulations	The Planning Board issues separate Design Guidelines and "Development Regulations" that include the Subdivision Regulations and all the procedural requirements for submitting an application for a SPS and a subdivision plan.
Miscellaneous Incentives	• The maximum development is based on a mathematical formula tied to lot area only. Development potential is not lost if the site has wetlands or steep slopes. An allowance for street right-of-way is **not** included in the mathematical formula. • A developer can estimate the maximum development potential in minutes. • A developer does not need to prepare a standard subdivision to "prove" how many lots could be created and establish a maximum number of dwellings. • A developer can mix and match types of buildings, sizes, number of bedrooms etc. in relation to his target market as long as he does not exceed the maximum allowed by the impact factors. • The Planning Board promises "fast track" processing and will put a proposed cluster subdivision to the top of its review list. • As described above the Development with Significant Public Benefit (DSPB) offers an increase in permitted development of up to 25% over a regular Cluster allowance.

Comments, Keys to Success
Lexington thought long and hard about why its existing cluster provisions were not being used. It concluded there was no economic incentive for developers to use it and several economic and procedural disincentives. Lexington sought to level the economic playing field to provide an economically feasible alternative to standard, one house – one lot standard subdivision.

Planning Director Robert Bowyer told MAPC there are two tests for use of a cluster provision:
1. Can you persuade (entice, cajole) developers to use it?
2. Can you get the neighbors of the site to accept it?

The Lexington Planning Board was successful in convincing its Town Meeting to revise the Zoning Bylaw for this new type of cluster because it promoted a variety of public objectives in addition to preserving open space:
1. The town needed a viable alternative to the huge single family houses being built in standard subdivisions. Many townspeople are turned off by "mansionization."
2. With a dramatic shift in town demographics, the town needed units for small households. It needed more choices for its large number of senior citizen and empty nester households who currently are practically forced to remain in single family houses if they want to remain in town.
3. Alternative housing types for senior citizens and empty nester households result in few school aged children and a positive revenue-to-cost ratio.
4. What the town was interested in was the **impacts** of dwelling units not their number (density). The Board developed extensive local data to show that alternative housing types were smaller, had fewer occupants, including school age children, and made fewer vehicular trips.
5. The design of alternative housing types could be compatible with single family neighborhoods. There were a few developments already in town, that required a rezoning to be built, that were understood and respected by residents. The special permit process would be easier for developers than waiting for a once a year opportunity at the annual town meeting.
6. The cluster special permit was presented as a viable choice for developers. Some developers will use it. Others will continue with standard subdivisions.
7. The geometric imperatives of a standard subdivision often clash with the natural characteristics of the land. Cluster gives much more design flexibility so that disturbance of the natural features of the site can be reduced.
8. There was not much vacant land remaining in town. Cluster would preserve some of the open space while standard subdivisions would use it up.

The 1996 Annual Town Meeting approved the Planning Board's comprehensive revision of the cluster zoning provisions by a vote of 126-39.

Many thought that Lexington was almost fully developed and therefore wondered why a cluster bylaw would be useful. In 1996, when the revision of cluster regulations was approved the Planning Board showed that there were about 222 acres of vacant land and about 1,407 acres of "under-developed" (developed to less than half of what is allowed by right) land remaining in town. Since the amendment passed in 1996 four of the five subdivisions proposed in Lexington are using the new Section 9.

Bowyer commented that, "we may not use the procedure that much because the town is a mature subdivision without much vacant land left. I wish we had this procedure 40 years ago. The town would look a lot different. But it is still worth having because the standard subdivision is such an inferior result." He noted that remaining sites are often marginal with difficult topography, wetlands, odd shapes and the like because the more easily developable sites have already been developed. More design flexibility is needed on marginal land.

Special Permit Process
Bowyer believes that as long as the Special Permit process is perceived by developers to be a problem it

acts as a disincentive. Based on experience in many towns, developers are fearful that they will face a lengthy process and numerous design changes without a guarantee of an approval. Planning Boards have to work hard to establish credibility and to back it up with promptly negotiated approvals if the procedure is to be used.

The Special Permit, however, is unavoidable because the permitting process sets the stage for the discretionary nature of the bylaw, enabling the Planning Board to waive various standards and work with the developer to get the "best" subdivision. Such discretionary give-and-take would not be possible if it weren't for the Special Permit process.

The extreme flexibility offered by Lexington's cluster provisions is shocking to many developers who have had experience with cluster elsewhere. The Planning Board advises them to design the site with the best relationship between buildings and the land and other buildings. Then draw the lot lines in last.

A Note of Caution from Lexington Town Planner, Bob Bowyer

The principle of the impact calculation formula is transferable for use outside of Lexington but the actual data is not. The numbers used in the formula for impacts were created from several Lexington-based sources of information (particularly housing and occupancy characteristics). Any community wishing to create a bylaw similar to Lexington's should certainly draw on the concept and structure but should develop locally-based impact calculations of their own.

Reflections, Insights

Bowyer commented on the varied reactions of the development community. Some, who are fairly sophisticated, saw the development potential immediately for market niches like the empty nester market. Some have developed their own spreadsheets and can analyze a site rapidly using the provisions in the bylaw. Others are watching to see how the Planning Board and the market respond. Another group will probably never use the cluster provision because it is complicated and they are so oriented to the traditional single family market.

The biggest surprise has been the resistance of single family neighborhoods. They don't want any development on sites near them and are fearful of something different from the usual single-family houses. Their initial response is to raise the stereotypes of "two family houses" and condos. Bowyer advises, and Lexington is now preparing, an educational program for neighborhoods where a cluster is proposed that will explain the characteristics of clusters and data on the type of housing units.

Bowyer, who has concluded that planners have been too defensive about cluster, states that "we have spent too much time forcing developers to prove that there are not more lots than in a standard subdivision. We put developers through numerous hoops so that they 'will not get away with something.' Instead we should aggressively promote cluster development as:

1. A desirable type of development, and
2. Achieving a variety of public objectives – in housing, site planning, cost-revenue, lower impacts – in addition to preserving open space.

For more information about Lexington's impact-incentive cluster regulations, see http://patriot.ci.lexington.ma.us/Planning. Follow the prompts to Subdivision-Applications/General explanations/Cluster Subdivision or Subdivision-Applications/Policies/Cluster Subdivision Zoning ByLaw/Section 9, Planned Residential Development. Please note that Lexington's Planning web site is currently being reconstructed. Check back periodically to obtain all the documents about impact-incentive cluster regulations and subdivision procedures. Ultimately, the site will include three general explanations of the regulation geared to three different audiences: 1) Developers; 2) Planners; and, 3) Neighbors.

LINCOLN	
Name (Section 8)	Open Space Residential Development (OSRD) & Planned Community Development (PCD)
Purpose and Intent (Sections 8.1 and 8.2)	OSRD is intended to provide an alternative pattern of land development, specifically to encourage the conservation of more open space than is normally the case while at the same time providing for a greater mixture of housing types at greater densities without a significant increase in population density. The PCD district is intended to either achieve the purposes of the OSRD or to permit the construction of a limited number of subsidized housing units for persons of low to moderate income while meeting specific design standards.
Eligibility (Section 8.1.2.)	OSRD is applicable within the R-3 district for single family dwellings and multi-family units by special permit. PCD is applicable within the R-4 district for single family dwellings and multi-family units by special permit.
Approval Process/Procedural Requirements (Section 8.4)	Bylaw requires site plan for purposes of review and approval of dimensional requirements by the Planning Board and a special permit by the Zoning Board to review the density, multi-family and open space. The special permit shall identify why proposed plan is in the public interest and also include an environmental impact statement as set forth in the Subdivision Rules and Regulations. Floor plans and building elevations shall also be submitted. Prior to the special permit hearing, the Planning Board, Board of Health, and Conservation Commission shall submit recommendations to the Zoning Board for consideration.
Dimensional Requirements (Section 8.3)	Standard Lot Size – 80,000 sq. ft. per lot OSRD / PCD Lot Size – 40,000 sq. ft. per lot The area of the parcel shall not be less than 25 acres.
Lot Yield/ Density (Section 8.3.b)	The number of dwelling units shall not exceed twice the number of lots upon which could be constructed in the total land area subject to the dimensional requirements of the R-1 district.
Open Space Criteria, Ownership, and Management (Sections 8.3.d and 8.3.n)	70% of the Qualifying Land Area and all land not usable for development shall be Open Land. Usable Land is defined as suitable for development under the applicable local and state regulations including the Wetlands Protection Act. Qualifying Land Area is defined as 85% of the Usable Land. Open Land shall be used for conservation, recreation, agriculture and forestry. Location and layout of open lands shall account for preserve and promote natural features of the landscape and existing and potential trails and open space links. Open Land shall be owned by the Town, the Lincoln land Conservation Trust or an association of the owners with provisions for limited easements for recreational use by residents of the Town.
Density Bonuses	None allowed.
Design Guidelines	No more than 20% of the dwelling units shall be detached single-family. Each unit shall have reasonable access to the open land, but does not need to directly front onto the Open Land.
Criteria for Granting the Special Permit (Sections 8.3.2.m and 8.3.2.q)	For R-3 projects, demonstration that the population density and traffic generated by the development will not be significantly greater than standard development. Specific plan of maintenance of all open land, waste disposal and drainage facilities and roadways
Bylaw vs. Regulations	Various Planning Board Rules and Regulations supplement the bylaw.

WESTBOROUGH	
Name (Zoning Section 4300)	Open Space Communities (OSCs)
Purpose and Intent	To provide for the public interest by the preservation of open space and natural landscape features in perpetuity, and ensure that residential development, to the maximum possible extent, respects the natural features of the land. To promote housing patterns that are designed to be sensitive to and accommodate a site's physical characteristics. Such features include wetlands and waterbodies, topography, vegetation, wildlife habitats, scenic views and vistas, the integrity of ancient ways, historic sites, and the remaining rural character of the community which is exemplified by its farmlands, open field and orchards.
Eligibility (Section 2150, and 4320)	• **Mandating use of the bylaw** Any applicant with a proposal for the subdivision of any land into a major residential development (a development with the potential to create more than six residential house lots on a property or set of contiguous properties in common ownership) must file an OSC concept plan. • Any parcels in the Residential Zone containing ten (10) or more acres shall be considered for OSC. • In major residential developments an OSC development is allowed only by Special Permit issued by the Planning Board. • In minor developments (parcels of at least five acres but less than ten acres in size), at the owners option, an application can be made for an OSC Special Permit in preference to filing a conventional development plan.
Approval Process/Procedural Requirements (Westborough Subdivision Rules & Regulations, Section III.B. and Zoning, Sections 2150 and 4360)	The Application Process is comprised of two steps (in Zoning): 1. Applicant submits **Concept Plans** for both an OSC and conventional design, as outlined in the Subdivision Rules and Regulations, which describes the overall development plan. At the first of two separate public hearings, the **Planning Board will review both concept plans and shall decide which plan the developer will build. If they are to build an OSC, the Board will grant a Special Permit.** If the Special Permit is granted the applicant continues with Step 2. 2. Applicant submits a **Preliminary Plan** based upon the concept plan (reviewed by the Planning Board) and then the applicant will submit a **Definitive Subdivision Plan** that incorporates comments made during the preliminary plan review. A public hearing will then be held, and the Definitive Plan will either be granted or denied. **Concept Plan** (in Subdivision) Dual-submittal of two concept plans is required: one conventional subdivision design and one OSC design. They are subject to the same procedures for submission, including: • Address the general features of the land, and give approximate configurations of the lots and roadways; • Show, among other things, existing landscape features and proposed drainage systems; • Administrative filing fee ($300.00 each plan, $75.00 per lot created); • All on-site wetland boundaries and wetland buffer zone limits shall be clearly identified on the plans. All Wetland flag locations shall be numbered and place upon all concept subdivision plans (official delineation required). **Procedures specific to the OSC Concept Plan:** • Shall be prepared by a registered Landscape Architect

WESTBOROUGH	
	• If the Planning Board determined that the development would be an OSC, the OSC Special Permit Concept Plan shall be reconsidered if there is a substantial variation between the Preliminary or Definitive Plan and the Concept Plan. Substantial variation is defined as an increase in the number of building lots, a decrease in the open space acreage, a change in the layout which causes dwellings units or road ways to be placed significantly closer to a dwelling unit within 500 ft. of the project, and/or a change in the general development pattern.
Dimensional Requirements (Section 4330)	Parcel shall be at least ten (10) acres and have a minimum of fifty (50) feet of frontage on an existing Town way. The **Planning Board may grant a reduction of all intensity regulations** of the underlying zoning for all portions of an OSD if the Board finds that the reductions will result in better design, improved protection of natural and scenic resources, and will otherwise comply with these regulations, provided that the reductions do not deviate from the following table of requirements: • Max lot size = 15,000 square feet • Min lot size = 8,000 square feet • Min frontage = 50 feet • Min lot width at building line = 80 feet • Min front yard setback = 30 feet (This minimum may be waived to achieve the purpose of this bylaw). • Min side yard = 15 feet • Min rear yard = 15 feet
Lot Yield/ Density (Zoning Section 4330)	Based on conventional yield – the total number of lots shall not exceed the number of lots which could reasonably be expected to be developed under a conventional plan in full conformance with zoning, subdivision regulations, and health codes. This number is determined from the conventional subdivision concept plan filed prior to the Special Permit decision and to the determination of type of development that will be allowed.
Open Space Criteria, Management and Ownership (Subdivision Rules and Regulations, Section IV, and Zoning Section 4350)	**Amount of open space** Land within an OSC that is not utilized for building lots, ways, common driveways, or parking shall be maintained as open space (maximum lot size is 15,000 square feet, See Zoning section 4330). There is no specific (either minimum or maximum) amount of open space required, and no mention of percent wetland, slopes, etc. that will or not be allowed to count to open space area. **Uses of the open space** The open space will be kept in its natural state, or may be regarded as conservation land, or with the approval of the Planning Board be used for woodland, agriculture, or recreation, including but not limited to, the cultivation and harvesting of crops, flowers, hay, fruit, or lumber, the planting of trees and shrubs, the moving of grass and the grazing of livestock and access to such resource lands for hiking and jogging trails, bike paths, and other recreation activities that are consistent with these preservation and conservation goals. **Ownership and Management** Common open space in a OSC shall be conveyed to: 1. an Open Space Land Trust, or any other nonprofit corporation, whose principle purpose is the conservation and preservation of open space; 2. A corporation, trust or association owned or to be owned by the lot owners in the development 3. the Town, and may by accepted by it for conservation and/or recreational use 4. owners of the lots within the open space community subject to a conservation restriction acceptable to the Planning Board.

WESTBOROUGH	
Density Bonuses	None
Design Guidelines (Subdivision Rules & Regulations, Section IV.C.)	Design standards are specifically given for open space, streets, compatibility with the site and the community, lot sizes, storm drainage systems, and sidewalks. **Open Space Design Standards** • Open space must kept in its natural state, regarded as conservation land, or used for woodland, agriculture, or recreation (specifics of what are allowed in each category are provided) • The Planning Board has great discretion over the creation of open space: the Board shall determine the utility and appropriateness of all open space areas; designation of a parcel of land as "open space" will only be permitted with Board approval; and, the Board shall make the final determination regarding open space parcels (location, size, shape, and allowed or appropriate uses). • Open space shall serve a purpose • Open space • Ten (10) standards for open space design and maintenance are listed, including: contiguous or connecting parcels whenever possible; creation of wildlife corridors, greenways, or park systems; lots should be grouped or clustered; a buffer of at least 100 feet adjacent to surface waters and wetlands; provision for public access; and, if open space is not conveyed to the Town, a restriction enforceable by the Town shall be recorded to ensure that such land be kept in an open or natural state and not be developed or improved. **Storm Drainage Systems Design Standards** • may be designed to encourage infiltration of run-off and ground water recharge
Criteria for Granting Special Permit	The Special Permit will be granted if, after reviewing both the conventional development and OSC concept plan, it is determined that the OSC development will better serve the purposes of the bylaw and the town.
Bylaw vs. Regulations	The Subdivision Rules and Regulations of Westborough have sections specific to OSCs, where the conventional subdivision is superseded by anything written specifically to address the design of an OSC. The Zoning bylaw does not address design standards.
Miscellaneous incentives of note within the bylaw	The main incentive of this bylaw is that OSC development results in less rigorous requirements for roadways and lot sizes which translate to less infrastructure. In other words, developers are required to do less construction but can still reap the same number of lots, they will therefore earn a higher profit.

Summary of Westborough's Open Space Community (OSC) Bylaw

The Concept Plan
While there is a dual-plan submittal for any major residential development, the dual-plan submittals must only be prepared as concept plans. Concept plans are required that are "intended to allow the applicant, the Board and other municipal agencies an opportunity to review the proposed development in general terms, before a preliminary and/or definitive plan is prepared" (Subdivision, Section III B.1.).

This means that the plans are only approximations, no engineering is required until the Definitive Plan stage. In other words, by the time a developer will have to sink large sums into engineering costs, they will know for sure that they will be building an open space subdivision.

No Density Bonus
The circumstances in Westborough are such that they do not need to offer a development bonus in order to entice developers to build in their community. For this reason, several years ago the bylaw was changed from a formula that determined yield to the submission of a plan showing conventional development. The formulas were often resulting in a density bonus. No density bonus is given today. Developers still choose to build in Westborough knowing that they may have to build an OSC – however the town finds that they can simply sell developers on their merits of their OSC bylaw based simply on the developers costs and profits.

Open Space Requirement
Westborough has been successful at using its cluster bylaw to set aside open space that then connects to additional conservation land. An Open Space Plan done in 1996 demonstrates which areas should be targeted for preservation and conservation. The Planning Board can refer developers and landowners to the Open Space Plan to inform them, prior to the filing of any development plan, of land in the Town that the community has determined should remain undeveloped. The Town's goals are clear.

Westborough chose not to formulate a standard equation for the open space requirement in an OSC. The Subdivision Rules and Regulations state no specific ratios of open space required, nor do they stipulate the contiguity of the open space parcels or refer to other topographical requirements that are often found in CSD-type bylaws. Instead, Westboroughs' regulations only make general references to topographical requirements, aiming more simply to make the project's areas of open space consistent with open space preservation and conservation goals.

The openness of the bylaw and the Subdivision Rules and Regulations language allows both the developer and Town some leeway in determining what conservation measures are most appropriate for each site. So, while Westborough may not make any minimum open space requirements, **Westborough's Planning Director, Jim Robbins, stated that most of the open space subdivisions that are developed include approximately 70% protected open space.** Land within an OSC that is not utilized for building lots, ways, common driveways, or parking shall be maintained as open space and since the maximum lot size is 15,000 square feet the resulting open space is usually around 70% of the total parcel.

While the zoning bylaw does not discuss the quality or quantity of the open space parcel, the Subdivision Regulations give a little bit of guidance. The Open Space Community Design Standards do specify that in "all subdivision, the Planning Board shall make the final determination regarding open space parcels. This shall include the location, size, shape and use of all proposed open space. If the land set aside for public use is excessively steep or wet, is not safely accessible, or is not dry for at least 9 months out of the year, the Board may consider this an inappropriate contribution of open space and may require additional land to satisfy this requirement" (Subdivision Rules and Regulations, Section IV.C.1.).

WESTFORD	
Name (Section 173-25)	Flexible Development
Purpose and Intent (Section 173-25 A)	• Encourage the preservation of open land for its scenic beauty and to enhance agricultural, open space, forestry, and recreational use • to promote the development of housing affordable to low, moderate, and median income families • to preserve historical and archeological resources • to protect the natural environment • to protect the value of real property • to promote more sensitive siting of buildings and better overall site planning • to perpetuate the traditional New England landscape • to facilitate the construction and maintenance of streets, utilities, and public services in a more economical and efficient manner • to offer an alternative to standard subdivision development • to promote the development of housing for persons over the age of 55
Eligibility (Section 173-25 C)	Bylaw may be used whether subdivision or not from any parcel or set of contiguous parcels held in common ownership and located entirely within the Town.
Approval Process/Procedural Requirements (Section 173-25 D)	Bylaw requires a special permit from the Planning Board. A development plan conforming to the preliminary subdivision plan requirements shall be submitted accompanied by wetland delineations and data on proposed wastewater disposal. The bylaw specifies that a design process be followed to determine the layout of proposed streets, lots and contiguous open space of the development plan (see below for more detail).
Dimensional Requirements (Section 173-25 F)	The bylaw encourages modification of lot size, shape, and other dimensional requirements provided that the lots having reduced area or frontage shall not have frontage on a street other than a street created by the Flexible Development. The Planning Board may waive this requirement where such proposed lot sizes are consistent with existing development patterns and at least 50% of the required side and rear yards as required shall be maintained.
Lot Yield/Density (Sections 173-25 G and E)	• The basic maximum number of units allowed shall not exceed the number of lots which could reasonably be expected to be developed upon the site under a conventional plan in full compliance with all local regulations. • The required Design Process includes 5 steps: 1. a site analysis of existing conditions to identify sensitive and noteworthy natural ,scenic and cultural resources 2. an evaluation of the site in its larger context by identifying physical (stream corridors, wetlands) and cultural (recreational opportunities) connections to adjacent land uses and activities 3. to identify the contiguous open space to be preserved within the site 4. to locate building sites, streets, parking areas, paths and other built features 5. to draw in the lot lines
Open Space Criteria, Ownership and Maintenance (Sections 173-25 M and N)	• Minimum of 10% of the parcel shall be contiguous open space. • Open space shall either be conveyed to the Town, the Conservation Commission or a corporation or trust owned jointly or in common by the owners of the lots, subject to a permanent Conservation Restriction. • The % of open space that is wetlands shall not exceed the % of the parcel that is wetlands, except where a greater % of wetlands promotes the purposes as set forth. In no case shall the % of open space that is wetlands exceed 50% of the parcel. • The open space shall remain free of buildings. Up to 20% of the open space may be paved or built upon for structures accessory to the dedicated uses of the open space.

WESTFORD	
	• Open space shall be used for conservation, historic preservation and education, recreation, agriculture and forestry.
Density Bonuses (Section 173-25 H)	Density bonus shall not exceed 50% of the Basic Maximum Number (BMN). All density bonus units shall be limited to not more than 2 bedrooms. Density bonuses may be awarded for the following: • each additional 10% of the site (in addition to the required 10%) a bonus of 5% of the BMN may be awarded provided that this bonus does not exceed 25% of the BMN • for every 2 units restricted to occupancy of 55 years or older, one unit may be added as a bonus, provided that this bonus does not exceed 10% of the BMN • a bonus of up to 15% of the BMN may be awarded when a development is in substantial conformance with specified design standards
Design Guidelines (Sections 173-25 I, J & K)	• A mandatory minimum of 15% of the total number of units shall be restricted for a period of not less than 15 years to individuals / families who meet or qualify as low, moderate or median income as defined by the bylaw. The affordable component shall be divided as follows: 5% for low income, 5% for moderate income and 5% for median income. • Multi-family structures shall not contain more than 5 units and shall be residential in character. • Roadways maybe designed to conform to Town subdivision standards or be adequate for the intended use as a private way. • A 100-foot natural buffer area shall be provided at the perimeter of the property where it abuts residentially zoned or occupied properties.

Summary of Westford's Flexible Development Bylaw

The Flexible Development bylaw was adopted by Town meeting in 1999. The Town also has an Open Space Residential Development bylaw on the books since 1991. According to Eric Ekman, Town Planner, the significant differences between the two bylaws are as follows: the flexible development bylaw is applicable to all parcels whether a subdivision or not and the OSRD bylaw is only applicable to parcels of more than 10 acres that are subdivisions; flexible development does not prescribe specific lot dimensional requirements, requires a design process that is natural resource based, requires a mandatory 15% minimum of affordable units and allows for density bonuses.

Ekman stated that the primary purpose of the Flexible Development bylaw was preservation of open space and creation of affordable units. Although relatively new, the bylaw has been well received and two projects have been approved consisting of a combined total of 6 affordable and age restricted units. Specifically, 5 units were age restricted of which two were affordable and the last unit was not age restricted but affordable. The modified lot sizes ranged from 15,000 sq. ft. –20,000 in one development and 30,000 sq. ft. in the other. The conventional lot size in 40,000 sq. ft.

Regarding the Design Process, Ekman states that it has been very effective in identifying the appropriate natural resources that should be protected and has been beneficial to both the Board and developer by focusing on the design of the development. Ekman believes that this design process results in a higher quality of open space. Ekman acknowledges that the minimum of 10% of the parcel that is required to be open space may in fact be lower than most bylaws, but points out that each of the flexible developments approved had approximately 30%-40% of the total area set aside as open space due to density bonus provisions.

The primary option of ownership of the open space has been a home owners association where the open space was placed under a conservation restriction. Interestingly, Ekman pointed out that in both flexible developments the developer wanted to deed the open space to the Conservation Commission, but the Commission determined that the parcels were too small in size. Ekman stated that the intention of allowing up to 20% of the open space to the covered by accessory impervious surfaces was due to the need for town wide recreational facilities.

The density bonus provisions of open space and age restriction have been used in both cases to increase the number of units. Ekman stated that developers have not chosen to comply with specified design standards in exchange for density bonuses.

The "affordable" provision has been identified as needed additional clarification. Specifically, how is "affordable" defined and how is the required 15 year restricted period implemented and managed? Ekman stated that during the first two applications, the Board referred to State guidelines to determine what was affordable. However, it was revealed that these guidelines were not appropriate for Westford. The Planning Board has decided that a customized formula is needed and has submitted a revision to Town meeting to increase the restricted period from 15 years to 30 years.

WESTWOOD	
Name (Section 16C)	Major Residential Development (MRD)
Purpose and Intent (Section 16C.a)	To allow greater flexibility and creativity in residential development and to assure a public voice and public authority in consideration of development in order to gain: • location of development on sites best suited for building with protection of land not suited for development • reflecting such considerations as permanent preservation of open space especially in large contiguous areas within the site linked to off-site protected areas protection of water bodies and wetlands • protection of community character • efficient patterns of construction and maintenance of public facilities and services • continuation of social and economic diversity • privacy for individual residential lots and avoidance of unnecessary development cost
Eligibility (Section 16C.b)	Mandatory for all MRD (defined below), in addition to any other developments of five acres or more whose owners choose to submit. A MRD is defined as one or more divisions of a parcel of land, or a set of contiguous parcels, which are in common ownership and will result in the creation of 4 or more lots (refer to specific definition for more details). MDR is also applicable to multiple owners and non-contiguous parcels.
Approval Process/Procedural Requirements (Section 16C.c)	Bylaw requires a special permit from the Planning Board. A pre-application review of preliminary materials is encouraged to promote better communication and avoid misunderstanding prior to formal application. The Basic Development Proposal (preferred alternative) and a substantially different Alternative Proposal shall be submitted and accompanied by a Design Concept Plan indicating existing site conditions and proposed lot lines, streets water systems, drainage, and open space. For MRDs consisting of 10 or more units additional detail and documentation is required.
Dimensional Requirements (Section 16C.d.3)	**Lot Area** Conventional – 12,000, 15,000, 20,000, 40,000, 80,000 (sq. ft.) MRD – equal to at least 5 times the habitable floor area of any dwelling excluding wetlands **Frontage** Conventional – 90, 100, 110, 125, 175 (ft) MRD – provide for adequate access to the building site All buildings shall be located within a designated building envelope, but are not subject to yard or setback requirements. The envelope shall not exceed 40% of lot area or 20,000 sq. ft., which ever is larger, and shall not include: 1. any land within required setback area within a perimeter boundary line 2. any wetland, floodplain or slope greater than 25% 3. any areas of critical environmental importance 4. areas that will damage areas of visual importance
Lot Yield/ Density (Section 16C d.1)	The basic maximum number of dwellings units allowed shall equal the maximum number of buildable lots that could reasonably be expected to be created through conventional development without any density bonuses or variances.
Open Space Criteria, Ownership, and	Open space shall be conveyed to the Town or its Conservation Commission and accepted for park or open space use, or shall be conveyed to a non-profit organization

WESTWOOD	
Maintenance (Section 16C e.2)	the principle purpose of which is the conservation of open space, or conveyed to a corporation or trust owned, or to be owned, by the owners of the lots. There is no minimum % of open space specified that must be protected.
Density Bonuses (Section 16C d.2)	Density bonuses of: • 0.5 times the % of all non-profit housing for the elderly (authorized under section 6b.15) • 1.5 times the % of all units reserved as affordable housing • 1.0 times the % of all units reserved as moderate income housing are allowed if in compliance with special permit conditions regarding permanence of affordability, resident selection, timing of affordable units, and location of affordable units within the development.
Design Guidelines	None specified.
Criteria for Granting the Special Permit (Section 16C g. 1)	The Planning Board shall approve the special permit for MRD for the Basic Development Proposal, provided that the Board determines that the alternative plan is in fact a feasible and responsive design effort.

APPENDIX B

MODEL OPEN SPACE RESIDENTIAL DEVELOPMENT/ CONSERVATION SUBDIVISION DESIGN BYLAW (WITH ANNOTATIONS) *(Drafted in part by Mark Bobrowski, Esq.)*

OPEN SPACE RESIDENTIAL DEVELOPMENT
OR CONSERVATION SUBDIVISION DESIGN (CSD)
MODEL BYLAW

Produced by the Metropolitan Area Planning Council
Boston, Massachusetts
August 2000

Funding for the development of this model bylaw was provided by the Planning for Growth Program of the Executive Office of Environmental Affairs (EOEA).

Legal assistance in the development and drafting of this bylaw was provided by Mark Bobrowski, Esq.

Technical review in the development of this model bylaw was provided by Donald Schmidt, Principal Land Use Planner, Department of Housing and Community Development.

Assistance in the development of this bylaw was provided by the *Green Neighborhoods Alliance*.

This Open Space Residential Development or Conservation Subdivision Design (CSD) Bylaw[1] *promotes an alternative to the conventional subdivision of land. CSD augments the choices available to the development community. CSD cannot be used to mandate the "clustering" of lots within a subdivision. In order to find a receptive audience with developers, CSD must be carefully tailored to fit the landscape, the town's regulatory capacities, and the requirements of the development community.*

This model tries to anticipate the many issues that face a community interested in adopting a CSD Bylaw. Where substantive requirements are set forth, they are intended only to provide an example. The numbers ultimately chosen for your CSD Bylaw should reflect careful planning beforehand. Where procedural choices are available, this model annotates the options to provide guidance in the drafting of

[1] *There are many names for conservation development techniques that each refers to an alternative to conventional subdivision of land, including cluster development, open space preservation, and landscape preservation. This model will primarily use Conservation Subdivision Design, or CSD, to represent these possible names. A community needs to select the term most meaningful to it.*

a local bylaw. ***All of the options and annotations are in italics and are meant for the users education only. They are not meant to be included as bylaw text.***

Before adopting and implementing a CSD bylaw, municipalities should have in place a mechanism to receive and disburse funds for the technical review of the project by a civil engineer, traffic engineer, wetlands scientist, attorney, and/or other experts. The complex nature of a CSD proposal necessitates some help from professionals. Typically, towns use the provisions of G.L. c. 44, s. 53G to require the applicant to provide such funds with the application for special permit or subdivision review. Among the many towns that have adopted technical review fees pursuant to G.L. c. 44, s. 53G are Groton, Chelmsford, Dighton, and Clinton.

I. PURPOSE AND INTENT

The model bylaw identifies those purposes that are common to all towns as primary purposes. Those purposes unique to a town are set forth as secondary purposes. Towns should incorporate, at a minimum, the primary purposes and select from appropriate secondary purposes in any proposed article for Town Meeting vote.

1. The Primary Purposes for CSD are the following:

   (a) To allow for greater flexibility and creativity in the design of residential developments;

   (b) To encourage the permanent preservation of [choose] open space, agricultural land, forestry land, wildlife habitat, other natural resources including aquifers, waterbodies and wetlands, and historical and archeological resources in a manner that is consistent with a municipality's comprehensive and open space plan, if any;

   (c) To encourage a less sprawling and more efficient form of development that consumes less open land and conforms to existing topography and natural features better than a conventional or grid subdivision;

   (d) To minimize the total amount of disturbance on the site;

   (e) To further the goals and policies of the [choose] comprehensive, master, and/or open space plans;

   (f) To facilitate the construction and maintenance of housing, streets, utilities, and public service in a more economical and efficient manner.

As stated above, these secondary purposes are intended as suggestions, from which communities should choose relevant items.

2. The Secondary Purposes for CSD are the following:

   (a) To preserve and enhance the community character;

(b) To preserve and protect agriculturally significant land;

(c) To protect the value of real property;

(d) To protect community water supplies;

(e) To provide for a diversified housing stock;

(f) To provide affordable housing to persons of low and moderate income.

II. ELIGIBILITY

The options available to towns in establishing eligibility criteria are quite extensive. Some towns limit CSD to the residentially zoned district with larger minimum lot sizes; others allow CSD town-wide. Some towns set a minimum tract size or minimum number of lots to qualify; others consider any tract eligible.

Obviously, towns would prefer to see CSD-style development proposals over conventional "cookie cutters." In most instances, such applications result from a combination of factors, some "carrots," some "sticks." Several towns make cluster mandatory within select districts. For example, Amherst requires developers to cluster in several resource protection districts. However, the legality of this mandatory approach has not been tested in the courts. The Subdivision Control Law, G.L. c. 41, ss. 81K-81GG, permits developers to subdivide as of right, as long as the project complies with local standards. Towns are therefore advised to proceed cautiously until the Courts balance these competing interests.

The following specific provisions attempt to set eligibility thresholds for CSD. Towns are encouraged to set these standards as low as possible in order to maximize the applicability of the CSD approach. In communities promoting a diversified housing stock consideration should be given to allow a mix of housing types. Furthermore, communities can specifically define contiguous to include parcels physically divided by a street. This would make a greater number of parcels eligible. Applicability of cluster/CSD to non-contiguous parcels held in common ownership is significantly underutilized considering that it does not require the adoption of additional administrative procedures. Although relatively unused at this time, enabling CSD to apply to non-contiguous parcels under non-common ownership should be given serious consideration.

1A. Minimum Size of Tract. To be eligible for consideration as a CSD, the tract shall contain a minimum of ____ acres. Where the tract is located in the [specify name of special district] the minimum tract area shall be ____ acres.

Alternatively, the threshold can be the number of lots to be created:

1B. Minimum Number of Lots. To be eligible for consideration as a CSD, the tract shall contain not less than ___ lots.

Or, if a mandatory approach to CSD is favored, this option would be appropriate:

1C. Any development that [will create more than ___ lots] *and/or* [is on a parcel of ____ acres or more] shall submit an application for CSD to the Planning Board.

2. Zoning Classification. Only those tracts located in the ___ Districts shall be eligible for consideration as a CSD.

3. Contiguous Parcels. To be eligible for consideration as a CSD, the tract shall consist of a parcel or set of contiguous parcels.

4. Land Division. To be eligible for consideration as a CSD, the tract may be a subdivision or a division of land pursuant to G.L. c. 41, s. 81P. *If condominium ownership is to be allowed (with a zero lot line approach), add the following:* provided, however, that CSD may also be permitted where intended as a condominium on land not so divided or subdivided.

III. SPECIAL PERMIT REQUIRED

The model makes it clear that a CSD requires the issuance of a special permit from the Planning Board. The Planning Board is the logical choice to serve as the Special Permit Granting Authority (SPGA) because it will invariably be involved in the subdivision of the tract. To force the developer into two forums (such as to the Planning Board for subdivision determinations, and to the Zoning Board of Appeals for zoning determinations) is a strong disincentive.

The Planning Board may authorize a CSD pursuant to the grant of a special permit. Such special permits shall be acted upon in accordance with the following provisions:

IV. PRE-APPLICATION

The developer should be encouraged, in the strongest possible terms, to work with the Planning Board before a formal application has been filed. Some towns go so far as to give a density bonus when a developer requests pre-application review of a CSD.

Pre-application negotiations allow the developer to get feedback from the Planning Board before extensive engineering work has been done. The primary purpose of this meeting is to introduce the potential applicant to the standards and procedures of the bylaw and initiate dialogue up front. The Planning Board can signal its concerns for resource areas, affordable housing, aesthetics, and other matters. In fact, it is probably advisable to have the Planning Board's technical experts involved at the pre-application stage to maximize communication between the parties.

If a town and developer, upon mutual agreement, choose to engage technical experts at the pre-application stage to help review these submittals, the developer should enter into a "Memorandum of Agreement" with the Planning Board to establish an escrow account to house the funds to pay the consultant(s).

1. Conference. The applicant is very strongly encouraged to request a pre-application review at a regular business meeting of the Planning Board. If one is requested, the Planning Board shall invite the Conservation Commission, Board of Health, and [list other appropriate committees/Boards]. The purpose of a pre-application review is to minimize the applicant's costs of engineering and other technical experts, and to commence negotiations with the Planning Board at the earliest possible stage in the development. At the pre-application review, the applicant may outline the proposed CSD, seek preliminary feedback from the Planning Board and/or its technical experts, and set a timetable for submittal of a formal application. At the request of the applicant, and at the expense of the applicant, the Planning Board may engage technical experts to review the informal plans of the applicant and to facilitate submittal of a formal application for a CSD special permit.

2. Submittals. In order to facilitate review of the CSD at the pre-application stage, applicants are strongly encouraged to submit the following information:

   A. Site Context Map. This map illustrates the parcel in connection to its surrounding neighborhood. Based upon existing data sources and field inspections, it should show various kinds of major natural resource areas or features that cross parcel lines or that are located on adjoining lands. This map enables the Planning Board to understand the site in relation to what is occurring on adjacent properties.

   B. Existing Conditions/Site Analysis Map. This map familiarizes officials with existing conditions on the property. Based upon existing data sources and field inspections, this base map locates and describes noteworthy resources that should be left protected through sensitive subdivision layouts. These resources include wetlands, riverfront areas, floodplains and steep slopes, but may also include mature un-degraded woodlands, hedgerows, farmland, unique or special wildlife habitats, historic or cultural features (such as old structures or stone walls), unusual geologic formations and scenic views into and out from the property. By overlaying this plan onto a development plan the parties involved can clearly see where conservation priorities and desired development overlap/conflict.

   C. Other Information. In addition, applicants are invited to submit the information set forth in Section VI.1 in a form acceptable to the Planning Board.

3. Site Visit. Applicants are encouraged to request a site visit by the Planning Board and/or its agents in order to facilitate pre-application review of the CSD. If one is requested, the Planning Board shall invite the Conservation Commission, Board of Health, and [list other appropriate committees/Boards].

4. Design Criteria. The design process and criteria set forth below in Section V should be discussed by the parties at the pre-application conference and site visit.

V. DESIGN PROCESS

The conservation of land is the focus of this CSD Model. The design process makes the placement of house lots and streets sensitive to this objective. The design process identifies historical, cultural and natural resources, potential open space corridors, views, etc. that should be preserved. This process excludes these areas from development and targets construction on the rest of the parcel.

The process consists of four steps: (1) Identifying Conservation Areas; (2) Locating House Sites; (3) Aligning Streets and Trails; and, (4) Drawing in the Lot Lines. This process may use pre-existing data sources, such as the Existing Conditions/Site Analysis Map discussed above, USGS topographical maps, FEMA floodplain maps, tax assessors maps, any wetland maps or orthophotographs, and NRSC soil maps.

At the time of the application for a special permit for CSD in conformance with Section VI.1, applicants are required to demonstrate to the Planning Board that the following Design Process was performed by a certified Landscape Architect and considered in determining the layout of proposed streets, house lots, and open space.

1. Step One: Identifying Conservation Areas. Identify preservation land by two steps. First, Primary Conservation Areas (such as wetlands, riverfront areas, and floodplains regulated by state or federal law) and Secondary Conservation Areas (including unprotected elements of the natural landscape such as steep slopes, mature woodlands, prime farmland, meadows, wildlife habitats and cultural features such as historic and archeological sites and scenic views) shall be identified and delineated. Second, the Potentially Developable Area will be identified and delineated. To the maximum extent feasible, the Potentially Developable Area shall consist of land outside identified Primary and Secondary Conservation Areas.

Because the design process intends to maximize the intrinsic value of a parcel of land, the house sites are located before the roads are laid out, ensuring that the former will dictate the later and not vice versa. Therefore emphasis is placed on principles of good landscape design and not solely engineering.

2. Step Two: Locating House Sites. Locate the approximate sites of individual houses within the Potentially Developable Area and include the delineation of private yards and shared amenities, so as to reflect an integrated community, with emphasis on consistency with the Town's historical development patterns. The number of homes enjoying the amenities of the development should be maximized.

3. Step Three: Aligning the Streets and Trails. Align streets in order to access the house lots. Additionally, new trails should be laid out to create internal and external connections to existing and/or potential future streets, sidewalks, and trails.

Lot lines may not be applicable in a CSD utilizing condominium ownership.

4. Step Four: Lot Lines. Draw in the lot lines.

VI. PROCEDURES

Approval of a CSD must proceed in accordance with the provisions of G.L. c. 40A, s. 9. Accordingly, the application for a CSD is subject to the standard procedures for issuance of a special permit: publication of notice, certified mail of notice to parties in interest, and a public hearing before the SPGA. If the Zoning Bylaw already contains these details, they should be incorporated by reference.

This model bylaw describes two procedural approaches to CSD special permits, both of which must acknowledge two legal constraints. First, when special permits are approved subject to a plan, the plan becomes a condition of the special permit. Any significant deviation from the plan requires a modification of the special permit. DiGiovanni v. Board of Appeals of Rockport, 19 Mass. App. Ct. 339, 346-47 (1985). Second, a Planning Board is without authority to issue a special permit where "a further determination of substance" must be made after the close of the public hearing. Weld v. Board of Appeals of Gloucester, 345 Mass. 376, 378 (1963).[2]

Option One: Concept Plan

In the first procedural model, the special permit is approved on the basis of a Concept Plan. A Concept Plan contains a Sketch Plan and a Yield Plan (see Section VII). The Sketch Plan is generally defined to require less information than a standard preliminary subdivision plan, but enough information to make the requisite findings set forth in Section XI, below. The Sketch Plan shows the dimensional features of the proposal - lot sizes, lot frontage, and open space - in general terms and not in exact detail. Similarly, the technical aspects of the proposal, including stormwater management appurtenances, building design, and wastewater disposal, are not engineered in the Sketch Plan, however they are discussed in narrative form. The final details are reviewed and approved by the Planning Board under Definitive Subdivision Approval.

Based upon the Concept Plan, the Planning Board establishes a Basic Maximum Number of lots/units (see section VII) and either approves or denies the special permit. The special permit, if granted, invariably has a series of attached conditions, including the maximum number of units/bedrooms, conformance with the requirements of the Conservation Commission and/or Board of Health, and compliance with the remaining standards of the CSD bylaw. Once the special permit is granted, the applicant proceeds with Definitive Subdivision Plan Approval.

The Concept Plan approach has many advantages. Developers receive an answer on the special permit application in a shorter period of time. They spend significantly less in engineering and legal costs before the vote. These are powerful incentives to choose the CSD option.

On the other hand, due to the innate characteristics of a Concept Plan, specifically the absence of construction specifications at the public hearing and review process, the decision might be challenged in court as being "arbitrary and capricious." Essentially the Planning Board is walking a "fine legal line."

However, this bylaw has been carefully crafted to address this potential issue by ensuring that all of the information typically reviewed for a Preliminary Plan is in fact "at the table" during the public hearings

---

[2] *For example, in Tebo v. Board of Appeals of Shrewsbury, 22 Mass. App. Ct. 618, 624 (1986), the issuance of a special permit for gravel removal was accompanied by this condition: "Before commencing any operation, a detailed plan of dust control must be submitted to the Board for approval." Abutters complained that this condition "postpones for future action a determination of substance, the fatal weakness of the special permit in Weld." Id. at 623-624. The court annulled the special permit and remanded the matter to the board.*

for review and consideration. The key to creating this alternative procedure while successfully walking that "fine legal line" was accomplished by changing both the format and level of detail of the information required for submittal (see Section VI Concept Plan). Specifically, this bylaw requires detailed narratives regarding the various elements for which construction specifications are not required (such as stormwater, water supply and wastewater systems), requires the submittal of a Site Context Map and Existing Conditions / Site Analysis Map, and requires copies of existing contour and soil maps. This information is necessary for the Planning Board to make an informed decision. Furthermore, to provide additional security and to further strengthen the legality of the decision, communities are advised to require a description of the "outer limits" or the most severe impacts of the proposed CSD, specifically on abutting properties and the community.

Option Two: Preliminary Plan

In the second procedural model, the special permit is approved on the basis of a Preliminary Plan, consisting of a Preliminary Plan as defined in the Planning Board's Subdivision Rules and Regulations and a Yield Plan (see Section VII). Applicants are required to submit all of the construction specifications and engineering detail required for a preliminary subdivision plan before the special permit vote is taken.
Where this level of detail is required up front, applicants may choose to apply for the special permit and for definitive subdivision plan review at the same time. The Planning Board may hold the required public hearings concurrently in such cases. Only when the special permit and definitive subdivision plans have been coordinated and finalized are the hearings terminated.

Again, there are advantages and disadvantages to this approach. Developers typically complain about Option Two because the costs associated with the preparation of the Preliminary Plan are more than the cost of a Concept Plan. This makes the special permit more of a speculative venture. However, a Planning Board sensitive to this concern can signal the applicant that the CSD will be approved if the details can be worked out; mixed messages are both costly and grating for the developer. A community that has predetermined CSD as favorable to conventional development should not create a bylaw that provides disincentives for the use of CSD. The advantage of procedural Option Two is that the likelihood of any substantial variation between the Preliminary Plan, approved as a condition of the special permit, and the Definitive Subdivision Plan is unlikely due to the level of detailed engineering that is provided.

1. Application.

An application for a special permit for a CSD shall be submitted on the form(s) provided by the Planning Board in accordance with the rules and regulations of the Board. Applicants for CSD shall also file with the Planning Board ____ copies of the following: ***[Choose either Option One or Two]***

OPTION ONE: Concept Plan

The Concept Plan shall include a Sketch Plan and a Yield Plan (see Section VII). The applicant shall submit both the Site Context Map and Existing Conditions/Site Analysis Map prepared according to Section IV.2 above. Additional information reasonably necessary to make the determinations and assessments cited herein shall be provided, including existing site contour maps and existing current soil maps.

A. Sketch Plan.
The Sketch Plan shall be prepared by a certified Landscape Architect, or by a multi-disciplinary team of which one member must be a certified Landscape Architect, and shall address the general features of the land, and give approximate configurations of the lots, open space, and roadways. The Sketch Plan shall incorporate the Four-Step Design Process, according to Section V above, and the Design Standards according to Section X below, when determining a proposed design for the development.

(1) Quality Standards.
This Model does not define the quality and quantity of materials to be submitted to satisfy this filing. Communities should examine their existing bylaws for quality standards such as scale, number of copies, and sheet size and incorporate them within this section.

(2) Required Content.
The Sketch Plan shall include the following:

a. The subdivision name, boundaries, north point, date, legend, title "Concept Plan," and scale.

b. The names of the record owner and the applicant, and the name of the Landscape Architect that prepared the plan.

c. The names, approximate location, and widths of adjacent streets.

d. The proposed topography of the land shown at a contour interval no greater than ___ (__) feet. Elevations shall be referred to mean sea level.

e. The location of existing landscape features including forests, farm fields, meadows, wetlands, riverfront areas, waterbodies, archeological and historic structures or points of interest, rock outcrops, boulder fields, stone walls, cliffs, high points, major long views, forest glades, major tree groupings, noteworthy tree specimens, and habitats of endangered or threatened wildlife, as identified as primary and secondary resources according to Section V.1. Proposals for all site features to be preserved, demolished, or moved shall be noted on the Sketch Plan.

Note that as part of Section XI, Decision of the Planning Board, the special permit decision will include several conditions. Resource areas and their buffer zone boundaries will be shown on the Sketch Plan (as well as later in Option Two), however a condition of the special permit will be the approval of the delineation by an Order of Conditions/Request for Determination of Applicability by the local Conservation Commission. It is recommended that at the pre-application conference, the developer is strongly encouraged to seek this official determination during the Concept stage rather than accepting the risk of a triggering a "substantial variation" later on, after they have invested significant time and money.

f. All on-site local, state, and federal regulatory resource boundaries and buffer

zones shall be clearly identified and all wetland flag locations shall be numbered and placed upon the Sketch Plan.

g. Lines showing proposed private residential lots, as located during Step-Four, Section V.4, with approximate areas and frontage dimensions.

h. All existing and proposed features and amenities including trails, recreation areas, pedestrian and bicycle paths, communities buildings, off-street parking areas, [list any others] shall be shown on the plan and described in a brief narrative explanation where appropriate.

i. The existing and proposed lines of streets, ways, common driveways, easements and any parcel of land intended to be dedicated for public use or to be reserved by deed covenant for use of all property owners in the subdivision, or parcels of land or lots to be used for any purpose other than private residential shall be so designated within the subdivision in a general manner.

j. Proposed roadway grades.

k. Official soil percolation tests for the purpose of siting wastewater treatment options are not required for the Concept Plan. However, a narrative explanation shall be prepared by a certified Professional Engineer detailing the proposed wastewater systems that will be utilized by the development and its likely impacts on-site and to any abutting parcels of land. For example, the narrative will specify whether individual on-site or off-site systems, shared systems, alternative to Title V systems, or any combination of these or other methods will be utilized.

l. A narrative explanation prepared by a certified Professional Engineer proposing systems for stormwater drainage and its likely impacts on-site and to any abutting parcels of land. For example, the narrative will specify whether soft or hard engineering methods will be used and the number of any detention/retention basins or infiltrating catch basins, it is not intended to include specific pipe sizes. Any information needed to justify this proposal should be included in the narrative. The approximate location of any stormwater management detention/retention basins shall be shown on the plan and accompanied by a conceptual landscaping plan.

m. A narrative explanation prepared by a certified Professional Engineer, detailing the proposed drinking water supply system.

n. A narrative explanation of the proposed quality, quantity, use and ownership of the open space. Open space parcels shall be clearly shown on the plan.

o. All proposed landscaped and buffer areas shall be noted on the plan and generally explained in a narrative.

p. A list of all legal documents necessary for implementation of the proposed development, including any Conservation Restrictions, land transfers, and Master Deeds, with an accompanying narrative explaining their general purpose.

q. A narrative indicating all requested waivers, reductions, and/or modifications as permitted within the requirements of this bylaw.

B. Yield Plan.
Applicant shall submit a narrative explanation detailing the results of the determination of any proposed allocation of yield determined according to Section VII, Basic Maximum Number (of lots/units/bedrooms).

C. Relationship between Concept Plan and Definitive Subdivision Plan.
Changes may occur between the Concept Plan and the Definitive Plan due to site-specific engineering. Each community must determine the types of changes that it considers substantial enough to warrant a re-opening of the special permit hearing. The following items 1 – 6 are the most common items that result in a substantial variation. Communities can administer changes to these items in one of three ways:

1. *Provide specific thresholds to define each substantial variation.*
2. *Provide a list of minor variations to be exempt, and then leave the determination of all other changes to the discretion of the Planning Board.*
3. *Provide a list of substantial variations (without defined thresholds) and leave the determination to the discretion of the Planning Board.*

The Concept Plan special permit shall be reconsidered if there is substantial variation between the Definitive Subdivision Plan and the Concept Plan. If the Planning Board finds that a substantial variation exists, it shall hold a public hearing on the modifications to the Concept Plan. A substantial variation shall be any of the following:

(1) an increase in the number of building lots;
(2) a significant decrease in the open space acreage;
(3) a significant change in the lot layout;
(4) a significant change in the general development pattern which adversely affects natural landscape features and open space preservation;
(5) significant changes to the stormwater management facilities; and/or
(6) significant changes in the wastewater management systems.

----OR----

OPTION TWO: Preliminary Plan

Preliminary Plans shall include a Preliminary Plan and a Yield Plan (see Section G) and any additional information reasonably necessary to make the determinations and assessments cited herein. The applicant shall submit both the Site Context Map and Existing Conditions/Site Analysis Map prepared according to Section IV.2. Additional information reasonably necessary to make the determinations and assessments cited herein shall be provided, including existing site contour maps and existing current soil maps.

A. Preliminary Plan.
Preliminary Plans shall use the Four-Step Design Process (see Section V) to demonstrate how the parcel was designed and shall comply with the Design Standards according to Section X below. The Preliminary Plan shall contain the following information:

(1) A Preliminary Plan conforming to the requirements for a preliminary plan as set forth in the Subdivision Rules and Regulations of the Planning Board.

(2) All on-site local, state, and federal regulatory resource boundaries and buffer zones shall be clearly identified and all wetland flag locations shall be numbered and placed upon the Sketch Plan.

(3) Data on proposed wastewater disposal, which shall be referred to the Planning Board's consulting engineer for review and recommendation.

B. Yield Plan.
Applicant shall submit a narrative explanation detailing the results of the determination of any proposed allocation of yield determined according to Section VII, Basic Maximum Number (of lots/units/bedrooms).

[The remaining provisions 2,3, and 4, of Section VI, apply to either Option One or Two]

2. Procedures.
Whenever an application for a CSD special permit is filed with the Planning Board, the applicant shall also file, within five (5) working days of the filing of the completed application, copies of the application, accompanying development plan, and other documentation, to the Board of Health, Conservation Commission, Building Inspector, Department of Public Works, Police Chief, Fire Chief, Town Engineer and _____ for their consideration, review, and report. The applicant shall furnish the copies necessary to fulfill this requirement. Reports from other boards and officials shall be submitted to the Planning Board within thirty-five (35) days of receipt of the reviewing party of all of the required materials; failure of these reviewing parties to make recommendations after having received copies of all such required materials shall be deemed a lack of opposition thereto. In the event that the public hearing by the Planning Board is held prior to the expiration of the 35 day period, the Planning Board shall continue the public hearing to permit the formal submission of reports and recommendations within that 35 day period. The Decision/Findings of the Planning Board shall contain, in writing, an explanation for any departures from the recommendations of any reviewing party.

3. Site Visit.
Whether or not conducted during the pre-application stage, the Planning Board shall conduct a site visit during the public hearing. At the site visit, the Planning Board and/or its agents shall be accompanied by the applicant and/or its agents.

4. Other Information.
   The submittals and permits of this section shall be in addition to any other requirements of the Subdivision Control Law or any other provisions of this Zoning Bylaw. To the extent permitted by law, the Planning Board shall coordinate the public hearing required for any application for a special permit for a CSD with the public hearing required for approval of a definitive subdivision plan.

VII. BASIC MAXIMUM NUMBER (OF LOTS/UNITS/BEDROOMS)

The CSD should prescribe a limit on the number of lots, dwelling units, or bedrooms that may be constructed therein. Generally, this number is derived after calculating the density available on the tract under an orthodox development proposal.

The CSD Bylaw may use either lots, dwelling units or bedrooms as the standard for the Basic Maximum Number. Where the CSD Bylaw limits development exclusively to single-family homes, lots or dwelling units are an acceptable standard. Where the CSD Bylaw contemplates multifamily structures, bedrooms may be a better choice. It is particularly important to focus on the standard where the CSD is proposed in an area without sewer service. If the area falls within a Zone II Wellhead Protection District, a close count on the number of bedrooms becomes crucial. The number of bedrooms is used to calculate the appropriate size of an on-site wastewater system. The Massachusetts Department of Environmental Protection assigns a baseline wastewater generation of 110 gallons per day (gpd) per bedroom. Industry standards also assume that the average single family house contains four bedrooms, resulting in wastewater generation of 440 gpd per single family house.

There are two methods of generating the Yield Plan to calculate the Basic Maximum Number: formula or picture. Each are discussed, in turn, below.

[Choose either Option One or Two]

Determination of Yield, OPTION ONE: Formula

The Basic Maximum Number shall be derived after the preparation of a Yield Plan. The Yield Plan shall be the following calculation to determine the total number of lots (or dwelling units):

$$\text{Total Number of Lots} = \frac{TA - (0.5 \times WA) - (0.1 \times TA)}{\text{district minimum lot area}}$$

TA = Total Area of Parcel
WA = Wetlands and Riverfront Areas of Parcel

In this simple example, half of the wetlands and any riverfront area are subtracted from the total area of the parcel. Additionally, one tenth of the total area is subtracted and assumed to be consumed by infrastructure. The remaining area is then divided by the minimum square-footage for a lot in the underlying zoning district. This will yield the Total Number of Lots or Basic Maximum Number of lots or

units.

Any formula used should account for all other regulatory requirements in the zoning bylaw, such as the deduction of other sensitive land - in flood plains, steep slopes (more than 25%), land under high-tension power lines, etc. - from the total tract area.

A formula option has advantages and disadvantages. The results are predictable, and there is seldom an argument once the computation is done. However, the formula may not result in neutral density (density equal with conventional zoning). Each site is different, and ledge, wetlands, steep slope, and other factors can skew the formula. Towns are advised to take several conventional subdivisions in the files and apply any formula to check results before adopting this approach.

----- OR -----

Determination of Yield, OPTION TWO: Sketch Plan

Since the CSD is subject to special permit approval, the determination of a Basic Maximum Number is just one aspect of a negotiated resolution. It is better to require less detail in the Yield Plan than to make the process too costly for the average developer. Accordingly, this definition of a Sketch Plan of the conventional subdivision requires only a modicum of engineering details to demonstrate the maximum number of lots (or units) that could reasonably be achieved through a conventional layout. If the proponent is determined to argue the point, the burden of proof places the obligation to provide more details on the applicant. A Sketch Plan may require more details where marginal lands are involved, such as the location of wetlands, floodplains, and steep slopes.

The Basic Maximum Number shall be derived from a Yield Plan. The Yield Plan shall show the maximum number of lots (or dwelling units) that could be placed upon the site under a conventional subdivision. The Yield Plan shall contain the information required for a *[choose either* Sketch Plan *or* Preliminary Plan *accordingly]*, as set forth above in Section VI. The proponent shall have the burden of proof with regard to the Basic Maximum Number of lots (or dwelling units) resulting from the design and engineering specifications shown on the Yield Plan.

VIII. REDUCTION OF DIMENSIONAL REQUIREMENTS

In order to make the concept work, the CSD Bylaw must allow for reduced lot size, particularly with regard to area, width, and frontage. While it is typical for zoning to require lots with reduced area and frontage not to be located on existing public ways where the new development patterns will be out of place, it is critical to remember that CSD is intended to achieve certain conservation values and should not be driven solely by aesthetics or what has been commonly accepted to date.

This model provides two options. The first, and preferred, option recommends a flexible ("zero lot line") approach, leaving the lot size to be governed by Title 5 (State Sanitary Code) and the marketplace. Title 5 has been revamped to allow alternative wastewater systems; as a result, large lots need no longer be tied to wastewater disposal. The second option establishes a sliding scale for minimum lot area, depending on the amount of open space required in the tract (See Section IX): more open space equals a smaller minimum lot size.

OPTION ONE: Flexible (Zero-Lot Line)

The Planning Board encourages applicants to modify lot size, shape, and other dimensional requirements for lots within a CSD, subject to the following limitations:

1. Lots having reduced area or frontage shall not have frontage on a street other than a street created by the CSD; provided, however, that the Planning Board may waive this requirement where it is determined that such reduced lot(s) will further the goals of this bylaw.

2. At least 50% of the required setbacks for the district shall be maintained in the CSD unless a reduction is otherwise authorized by the Planning Board.

---- OR ----

OPTION TWO: Sliding Scale

The Planning Board may authorize modification of lot size, shape, and other bulk requirements for lots within a CSD, subject to the following limitations:

1. Lots having reduced area or frontage shall not have frontage on a street other than a street created by a subdivision involved, provided, however, that the Planning Board may waive this requirement where it is determined that such reduced lot(s) are consistent with existing development patterns in the neighborhood.

2. Lot frontage shall not be less than 50 feet. The Planning Board may waive this requirement where it is determined that such reduced frontage will further the goals of this bylaw.

3. Each lot shall have at least 50% of the required setbacks for the district unless a reduction is otherwise authorized by the Planning Board.

4. Lots may be reduced in area according to the following schedule[3]:

Minimum Open Space (%)	District Minimum Lot Area (sq. ft.)	CSD Minimum Lot Area (sq. ft.)
50	*80,000*	*20,000*
50	*60,000*	*15,000*
50	*40,000*	*10,000*
50	*30,000*	*7,500*

[3] *It should be noted that this table is for conceptual purposes only. Lot areas subject to 50% open space requirements were reduced by three-quarters; areas subject to 70% open space requirements were reduced by seven-eighths.*

Minimum Open Space (%)	District Minimum Lot Area (sq. ft.)	CSD Minimum Lot Area (sq. ft.)
50	*20,000*	*5,000*
50	*10,000*	*5,000*
70	*80,000*	*10,000*
70	*60,000*	*7,500*
70	*40,000*	*5,000*
70	*30,000*	*5,000*
70	*20,000*	*5,000*
70	*10,000*	*5,000*

IX. OPEN SPACE REQUIREMENTS

The most important decision in adopting a CSD Bylaw will be the minimum amount of required open space to qualify for consideration by the Planning Board. In existing open space and cluster bylaws some set the required open space figure quite low - 10% is the entry level - to attract as many developers as possible. Others set the required open space high - up to 70% - to make sure that the project yields appropriate benefits to the town. This model chooses 50% as the minimum requirement.

The open space on the site should be valuable. It may also be usable. It should not be just the "fingers" of land between houses, nor land that was unsuitable for development anyway. The open space should not be disproportionately wet; not more than the overall percentage of wetlands on the tract should be wet in the required open space.

Permissible uses (if any) on the open space should also be set forth. If a zero lot line approach is used, the open space will probably be essential for on-site wastewater and stormwater attenuation. The open space might also provide an area for recreational opportunities, including swimming pools, basketball and tennis courts, and community facility buildings. However, the Planning Board may require, in some or all instances, that the open space is dedicated exclusively to conservation or passive uses. There is no requirement that the open space is used for recreation or other active uses. Uses permitted should reflect the value of the open space as determined by the Four-Step Design Process. For example, the primary and secondary resources identified may have delineated sensitive wildlife habitat with intrinsic conservation value and therefore should be "used" for conservation only, not even for passive recreation.

Finally, the ownership of the open space should be regulated in conformance with G.L. c. 40A, s. 9, which authorizes the Town, a nonprofit land trust, or a homeowners' association to manage the open space.

1. Open Space. A minimum of fifty percent (50%) of the tract shown on the development plan shall be open space. Any proposed open space, unless conveyed to the Town or its Conservation Commission, shall be subject to a recorded restriction enforceable by the Town,

providing that such land shall be perpetually kept in an open state, that it shall be preserved exclusively for the purposes set forth herein, and that it shall be maintained in a manner which will ensure its suitability for its intended purposes.

A. The percentage of the open space that is wetlands shall not normally exceed the percentage of the tract which is wetlands; provided, however, that the applicant may include a greater percentage of wetlands in such open space upon a demonstration that such inclusion promotes the purposes of this bylaw.

B. The open space shall be contiguous. Contiguous shall be defined as being connected. Open Space will still be considered connected if it is separated by a roadway or an accessory amenity. The Planning Board may waive this requirement for all or part of the required open space where it is determined that allowing non-contiguous open space will promote the goals of this bylaw and/or protect identified primary and secondary conservation areas.

C. The open space shall be used for wildlife habitat and conservation.

If other uses of the open space are desirable, choose the following subsection C. In an attempt to legitimize this bylaw and remain true to the original purpose of CSD and the 4 step design process, particularly the conservation of primary and secondary resources, communities are strongly cautioned to permit a low percentage of impervious surfaces within the required open space (insert % below). While other uses may be allowed, and will likely be desirable, these should not and need not occur at the expense of basic principles of CSD.

C. The open space shall be used for wildlife habitat and conservation and the following additional purposes [choose]: historic preservation, education, outdoor education, recreation, park purposes, agriculture, horticulture, forestry, a combination of these uses, and shall be served by suitable access for such purposes. The Planning Board may permit up to ____ % of the open space to be paved or built upon for structures accessory to the dedicated use or uses of such open space (i.e., pedestrian walks and bike paths).

The minimum open space requirement of 50% means that wastewater systems and other utilities will likely require location on the open space.

D. Wastewater and stormwater management systems serving the CSD may be located within the open space. Surface systems, such as retention and detention ponds, shall not qualify towards the minimum open space required.

2. Ownership of the Open Space. The open space shall, at the Planning Board's election, be conveyed to:

(a) the Town or its Conservation Commission;

(b) a nonprofit organization, the principal purpose of which is the conservation of open space and any of the purposes for such open space set forth above;

(c) a corporation or trust owned jointly or in common by the owners of lots within the CSD. If such corporation or trust is utilized, ownership thereof shall pass with conveyance of the lots in perpetuity. Maintenance of such open space and facilities shall be permanently guaranteed by such corporation or trust which shall provide for mandatory assessments for maintenance expenses to each lot. Each such trust or corporation shall be deemed to have assented to allow the Town to perform maintenance of such open space and facilities, if the trust or corporation fails to provide adequate maintenance, and shall grant the town an easement for this purpose. In such event, the town shall first provide fourteen (14) days written notice to the trust or corporation as to the inadequate maintenance, and, if the trust or corporation fails to complete such maintenance, the town may perform it. Each individual deed, and the deed or trust or articles of incorporation, shall include provisions designed to effect these provisions. Documents creating such trust or corporation shall be submitted to the Planning Board for approval, and shall thereafter be recorded.

X. DESIGN STANDARDS

Design guidelines are intended to establish the aesthetics and design principles of a CSD. The design standards address all of the remaining issues, from the types of permissible buildings to landscaping. The standards provided below are divided into Generic and Site Specific and represent a checklist of issues for consideration to adopt as part of a zoning bylaw.

Communities that have Residential Design Manuals may already regulate several of these design issues, and including them in this bylaw would be redundant. In that case applicants should be directed to any such existing manual or bylaw provision by reference in this bylaw.

The following Generic and Site Specific Design Standards shall apply to all CSD's and shall govern the development and design process:

1. Generic Design Standards

(a) The landscape shall be preserved in it natural state, insofar as practicable, by minimizing tree and soil removal. Any grade changes shall be in keeping with the general appearance of the neighboring developed areas. The orientation of individual building sites shall be such as to maintain maximum natural topography and cover. Topography, tree cover, and natural drainage ways shall be treated as fixed determinants of road and lot configuration rather than as malleable elements that can be changed to follow a preferred development scheme.

(b) Streets shall be designed and located in such a manner as to maintain and preserve natural topography, significant landmarks, and trees; to minimize cut and fill; and to preserve and enhance views and vistas on or off the subject parcel.

(c) Mixed-use development shall be related harmoniously to the terrain and the use, scale, and architecture of existing buildings in the vicinity that have functional or visual

relationship to the proposed buildings. Proposed buildings shall be related to their surroundings.

(d) All open space (landscaped and usable) shall be designed to add to the visual amenities of the area by maximizing its visibility for persons passing the site or overlooking it from nearby properties.

(e) The removal or disruption of historic, traditional or significant uses, structures, or architectural elements shall be minimized insofar as practicable, whether these exist on the site or on adjacent properties.

2. Site Specific Design Standards

(a) Mix of Housing Types. The CSD may consist of any combination of single-family, two-family and multifamily residential structures. A multifamily structure shall not contain more than _____ dwelling units. Residential structures shall be oriented toward the street serving the premises and not the required parking area.

If a community does not want to enable "any combination" of housing as suggested above, the following may be used:

(a) Maximum Percentage of Housing Type. The CSD shall consist of ___ % single family, ___ % two family and ___% multifamily structures.

The bylaw may also provide specific guidelines regarding what percent of single family units may be attached and detached. The bylaw may also provide guidelines for the size, scale, massing, and maximum number of units within each multifamily structure.

(b) Parking. Each dwelling unit shall be served by two (2) off-street parking spaces. Parking spaces in front of garages may count in this computation. All parking areas with greater than ____ spaces shall be screened from view.

(c) Buffer Areas. A buffer area of ____ feet may be provided at the following locations: *[choose from:]* (a) perimeter of the property where it abuts residentially zoned and occupied properties; (b) certain resource areas on or adjacent to the tract like ponds, wetlands, streams and riverfront areas, rock outcrops, ledge, agricultural or recreational fields, and land held for conservation purposes; and (c) existing public ways. Driveways necessary for access and egress to and from the tract may cross such buffer areas. No vegetation in this buffer area will be disturbed, destroyed or removed, except for normal maintenance of structures and landscapes approved as part of the project. The Planning Board may waive the buffer requirement in these locations when it determines that a smaller buffer (or no buffer) will suffice to accomplish the objectives set forth herein.

(d) Drainage. The Planning Board shall encourage the use of "soft" (non-structural) stormwater management techniques (such as swales) and other drainage techniques that reduce impervious surface and enable infiltration where appropriate.

(e) Common/Shared Driveways. A common or shared driveway may serve a maximum number of ____ single family units.

(f) Screening and Landscaping. All structural surface stormwater management facilities shall be accompanied by a conceptual landscape plan.

(g) On-site Pedestrian and Bicycle Circulation. Walkways and bicycle paths shall be provided to link residences with parking areas, recreation facilities (including parkland and open space) and adjacent land uses where appropriate.

(h) Disturbed Areas. Not more than ___% of the total tract shall be disturbed areas. A disturbed area is any land not left in its natural vegetated state.

XI. DECISION OF THE PLANNING BOARD

The Planning Board may grant a special permit for a CSD if it determines that the proposed CSD has less detrimental impact on the tract than a conventional development proposed for the tract, after considering the following factors:

1. whether the CSD achieves greater flexibility and creativity in the design of residential developments than a conventional plan;

2. whether the CSD promotes permanent preservation of open space, agricultural land forestry land, other natural resources including waterbodies and wetlands, and historical and archeological resources;

3. whether the CSD promotes a less sprawling and more efficient form of development that consumes less open land and conforms to existing topography and natural features better than a conventional subdivision;

4. whether the CSD reduces the total amount of disturbance on the site;

5. whether the CSD furthers the goals and policies of the [choose] open space/ master/ comprehensive plan(s);

6. whether the CSD facilitates the construction and maintenance of streets, utilities, and public service in a more economical and efficient manner.

7. whether the Concept Plan and its supporting narrative documentation complies with all sections of this zoning bylaw.

When using either procedural option the Planning Board will need to condition the findings/decision of the special permit. Due to variations between the Concept Plan, approved under zoning, and the Definitive Subdivision Plan, approved under Subdivision Rules and Regulations, there may be a need for

the Planning Board to re-open the special permit hearing. Upon completion of several of these conditions the final design may change, therefore resulting in either minor or substantial variations (for definitions, see Section VI.1.C.).

The following are several boilerplate conditions that will be applicable in all permits and should be part of the Decision by the Board:

1. *The Basic Maximum Number of [lots, units, bedrooms] granted by the special permit is ___, conditioned upon Definitive Subdivision Approval.*

   (Due to the fact that official soil percolation tests are not required during the special permit process the permit indicates a maximum potential number of lots/units/bedrooms that the developer must then substantiate during Definitive Subdivision Approval.)

2. *The design specifications and engineering drawings of the proposed street layouts, wastewater management, water supply systems, stormwater drainage appurtenances, and other site infrastructure of the proposed development will be determined during the forthcoming Definitive Plan approvals.*

3. *The [Sketch Plan or Preliminary Plan] is conditioned upon Conservation Commission approval of resource delineation and an Order of Conditions/Request for Determination of Applicability.*

4. *The [Sketch Plan or Preliminary Plan] is conditioned upon Board of Health approval needed for Title 5, if applicable.*

5. *The [Sketch Plan or Preliminary Plan] is conditioned upon Planning Board approval for Definitive Subdivision Approval.*

6. *All other case-specific conditions deemed necessary by the Planning Board to provide safeguards, including bonding, to secure the objectives of this bylaw, and to protect health, safety, and welfare of the inhabitants of the neighborhood and the Town*

7. *The [Sketch Plan or Preliminary Plan] is conditioned upon compliance with all other required local, state, and federal permits.*

XII. INCREASES IN PERMISSIBLE DENSITY

G.L. c. 40A, s. 9 specifically authorizes an increase in otherwise permissible density ("density bonus") by special permit. The choice to offer a density bonus lies entirely with the town meeting.

An alternative residential bylaw has significant incentives without a density bonus. Reduced lot sizes ought to reduce infrastructure costs associated with shorter and narrower roads, less pipe, and less cut and fill. Groton, for example, has found most developers willing to use its alternative bylaw without density bonuses. Westford, on the other hand, has offered an increase of up to 50% for the provision of certain amenities. Some examples are set forth, below:

The Planning Board may award a density bonus to increase the number of dwelling units beyond

the Basic Maximum Number. The density bonus for the CSD shall not, in the aggregate, exceed fifty percent (50%) of the Basic Maximum Number. Computations shall be rounded to the lowest number. A density bonus may be awarded in the following circumstances:

1. For each additional ten percent (10%) of the site (over and above the required 50%) set aside as open space, a bonus of five percent (5%) of the Basic Maximum Number may be awarded; provided, however, that this density bonus shall not exceed 25% of the Basic Maximum Number.

2. For every two (2) dwelling units restricted to occupancy by persons over the age of fifty-five, one (1) dwelling unit may be added as a density bonus; provided, however, that this density bonus shall not exceed 10% of the Basic Maximum Number.

Where the town has adopted a design manual for alternative residential development, a density bonus may be offered for consistency with the manual.

3. Where the Planning Board determines that the development is in substantial conformance with the document entitled "Town of _____, Residential Design Guidelines," a bonus of up to fifteen (15%) percent of the Basic Maximum Number may be awarded.

The provision of affordable housing can also be tied to a density bonus:

4. For every two (2) dwelling units restricted to occupancy for a period of not less than fifteen (15) years by persons or families who qualify as low or moderate income, as those terms are defined for the area by the Commonwealth's Department of Housing and Community Development, one (1) dwelling unit may be added as a density bonus; provided, however, that this density bonus shall not exceed 10% of the Basic Maximum Number.

Other towns award a density bonus for diversification of housing types, architectural consistency, and resource protection. In order to minimize impacts on the school system, a bylaw may require all dwelling units awarded as a density bonus to be one or two bedroom units.