



Peterborough Zoning Ordinance

Diagnostic Analysis

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Introduction

In recent years, a series of key amendments have been made to Peterborough's Zoning Ordinance. As a prologue to considering further amendments to the Ordinance, the Planning Board initiated a "diagnostic analysis" with the goal of not only objectively determining the document's strengths and weaknesses, but also reviewing the Ordinance's connectivity with the adopted 2003 Master Plan. As a part of this effort, the Project Team participated in numerous public meetings and discussions, which included a public hearing attended by representatives of each of Peterborough's land use boards and commissions. In addition, discussions were held with groups such as the EDA, Chamber of Commerce, Business Support and Heritage Commission. Input received from these discussions afforded the Project Team with valuable guidance in developing an understanding of how the current zoning ordinance is viewed and perceived locally.

Without question, the citizens of Peterborough care passionately for their community, strongly voicing opinions and concerns regarding the current zoning ordinance as well as their vision for the future. The Town of Peterborough is the center of commerce in the eastern section of the Monadnock Region. It is a vibrant community with a deep sense of history, a very engaged and caring population, boasting a downtown that is full of life. Unfortunately, it appears a number of articles and sub-sections of the current zoning ordinance may serve to undermine many of these fine community attributes. The existing Peterborough Zoning Ordinance, although frequently amended, remains fashioned around a 1970's framework. This "quilted" approach has resulted in an ordinance that is in many ways disjointed, confusing and ripe for legal challenge. As an example, the Zoning Map, a key part of any zoning ordinance is currently "unofficial". We understand the lack of a definitive zoning map has too often resulted in perplexing attempts to determine actual zoning district boundaries based on the often vague and uncertain language used to define zoning district boundaries in years past. Further, in many cases, the ordinance identifies permitted uses in various districts which do not coincide with those land uses that actually exist, resulting in an unusually large number of nonconforming parcels and land uses.

Recently, substantial progress has been made to address many of the noted concerns. A multi-year effort resulted in the adoption of a new Master Plan, which lays out a clear course of action for the community. Specific Goals and Regulatory Action items are identified in the Master Plan, which serve to address legitimate concerns raised during the Master Plan process. These recommendations have resulted in specific amendments to the Ordinance including: the establishment of the Village Commercial District; the West Peterborough District; and the Monadnock Community Health Care District. In addition, those sub-sections of the Ordinance which regulate the Business Districts were amended to address a series of long standing concerns.

In the text which follows, the Project Team has identified a series of recommendations, suggestions and comments, which if implemented, should go a long way in addressing identified deficiencies that now hinder the ability of the Peterborough Zoning Ordinance to be consistent with the vision outlined in the Master Plan.

Chapter 1 - Ordinance Comments and Recommendations

Article I – General Provisions

1) To assure statutory compliance, we recommended adding the following sub-section concerning Interpretation of the Ordinance be inserted into the Ordinance after current Sub-Section 245-2:

Interpretation - Each provision of this Ordinance shall be held as the minimum requirement adopted for the promotion of the public health, safety and general welfare of the Town of Peterborough. Whenever any provision of this Ordinance is deemed to be in conflict with any other provision of the Ordinance, or the requirements of any other adopted Ordinance, Regulation, Rule or Law, the most restrictive, or that imposing the highest standard, shall control pursuant to the provisions of RSA 676:14.

2) 245-4 Definitions

In the case of any zoning ordinance, clear and concise language is imperative if that ordinance is to be properly administered and stand as legally defensible document. This reality was recently underscored by the recent Court decision in CN Brown Company v. Town of Peterborough and Town of Peterborough Zoning Board of Adjustment. In that case, the Court found that the common meaning and usage of the term *convenience store*, when attached to a gas station, fits with the Zoning Ordinance's definition of *Fast-food Service*. We recommend the term *convenience store*, with and without a gas station component, be defined and the definition of *Fast-food service* be amended to reflect the ambiguities noted by the Court.

In order to clarify issues such as this, the Town should consider incorporation the American Planning Association (APA) Land-Based Classification Standards (LBCS) to provide a consistent model for classifying land uses based on their characteristics. The community may wish to use this system for all of its land uses or only select those that are particularly ambiguous and are in need of further definition refinement. Appendix One contains an outline of APA's LBCS model.

We recommend the term *Light Industry* be amended to remove the prohibition against outside storage of equipment or materials. This type of activity is typical in the operation of light industries and if aesthetics are an issue, landscaping and fencing can be required to shield or mitigate the same.

We recommend each of the words and terms presently defined in Sub-Section 245-4 be rechecked to insure each definition is consistent with the current statutory definition of the same word or term if there be one.

Article II – District Regulations

The following specific comments and recommendations are offered in regard to the content of Article II entitled District Regulations:

General Comments

1) **Special Exception Uses:** At this time the Ordinance identifies many uses permitted by Special Exception only in various zoning districts. Traditionally, zoning ordinances identify a particular use as “a special exception use” only when or where a particular use is considered appropriate at some, but not all locations within a district. Correspondingly, the number of special exception uses typically identified in most zoning ordinances, which rely on this technique, is far more limited than is the case with the current Peterborough Zoning Ordinance. For the Project Team, the existence of the unusually lengthy list of Special Exception Uses is a matter of concern given the time and resources required for an applicant to advance a proper application for a special exception; the amount of time and resources required for the municipality to consider and properly act upon such requests; and the redundancy often created between the overlapping purviews of the Zoning Board of Adjustment (ZBA) and Planning Board in the case of land use proposals requiring both a special exception from the ZBA and non-residential site plan approval from the Planning Board. Correspondingly, we offer several recommendations:

- We recommend that a detailed review of all Special Exception Uses be initiated for the purposes of evaluating whether or not each use currently permitted by special exception would more appropriately either be permitted by right; not be permitted at all; or properly remain as a Special Exception Use, if in fact it is believed those uses are in fact appropriate at some but at not all locations within a district. In short, we recommend evaluating the Ordinance in an attempt to reduce the number of uses permitted only by special exception.
- For those uses which remain to be permitted by Special Exception, we recommend modifying the criteria necessary for approval of each Special Exception request to eliminate redundancy with the non-residential site plan review process. In many cases, Special Exceptions approved by the Zoning Board of Adjustment (ZBA) also require site plan approval from the Planning Board. In most cases, the Special Exception criteria contained in the current Ordinance include considerations which are duplicative in scope to those topics considered by the Planning Board during the site plan review process (drainage, sewerage, water supply and aesthetic considerations, etc.). In addition to eliminating redundancy, it is believed implementation of this recommendation would serve to divide the scope of review of any given land use proposal in a manner more consistent with the statutory authority for consideration of special exception requests granted to the Zoning Board of Adjustment under RSA 674:33 and to the Planning Board for site plan review under RSA 674:43.
- In order to further reduce duplicative regulatory review of a single land use proposal, we recommend modifying the Ordinance to permit each of those “Special Exception Uses”, which are ultimately subject to Site Plan Review by

the Planning Board, to instead be permitted by a Conditional Use Permit (CUP) granted by the Planning Board. Although the criteria necessary for issuance of a Conditional Use Permit would likely remain identical to the criteria required for issuance of a Special Exception, it is believed the Planning Board may be better suited to administer this aspect of the Ordinance given the scope of review and consideration implicit to the site plan review process, which in most cases would run concurrent with their consideration of an application for a Conditional Use Permit. Additional discussion and recommendations involving the Conditional Use Permit process is provided under Article VIII.

2) Table of Permitted Uses & Table of Dimensional Requirements: The Ordinance currently lacks both a Table of Permitted Uses and a Table of Dimensional Requirements. We recommend the addition of these tables to increase the “user friendliness” of the Ordinance, allowing for quick reference to specific district requirements. It is our understanding that these tables have been developed and since they are just a restatement of existing zoning requirements outlined in a tabular format, could be easily inserted into the Zoning Ordinance without ballot approval.

3) Comments Offered in Regard to Sections 245-5 through 245-11-1

245-5 Districts Established

245-5.A: Under the listing for Business Districts, a “Commercial/Industrial” district is noted that does not exist in the Zoning Ordinance. This may be a typographical error, as there is a Business/Industrial District. We suggest this be corrected.

245-5.B: This Sub-Section states that “drive-through windows at restaurants”, an undefined term, is prohibited in all districts. It is uncommon to note prohibited uses under that section of a zoning ordinance whose intent is to simply provide for a recitation of those zoning districts present within a municipality. Correspondingly, we suggest the term “drive-through windows at restaurants” be defined under Section 245-4; and the prohibition of the same be inserted into the text of those Sub-Sections of Article II which identify restaurants as a permitted use in one or more districts.

245-5.C: Agricultural Uses. This Sub-Section prohibits commercial agricultural uses within all districts except the Rural District. This prohibition is in conflict with RSA 674:32-c, which states “the tilling of soil and the growing and harvesting of crops and horticultural commodities as a primary or accessory use may not be prohibited in any zoning district”. Agriculture enjoys special protection under New Hampshire Law.¹ Correspondingly, we recommend this Sub-Section be deleted in order to be consistent with State regulations.

245-6 Family District

Sub-Section 245-6.A(3) lists “Gardens” as a specific permitted use. Given the proceeding comment acknowledging the provisions of RSA 674-32-c, this is unnecessary. Correspondingly, we recommend this item be deleted from the Ordinance

¹ Laughlin, NH Practice, Land Use Planning and Zoning, Third Edition.

Sub-Section 245-6.B(3) specifies a requirement for “Frontage on the **nearest ROW**”. The term “nearest ROW” is not defined in the Ordinance. Correspondingly, we recommend the statutory definition of the word “Frontage” (See RSA 674:24) be inserted into Sub-Section 245-4 and the text of Sub-Section 245-6.B(3), as well as all other similar Sub-Sections of the Ordinance under which some minimum measure of lot “Frontage” is required, be edited to simply identify the minimum “Frontage” requirement for that District. We also recommend the text of Sub-Section 245-6.B be revised to indicate the lot area, yard dimensions and frontage values specified under Sub-Paragraphs (1) through (4) are minimum dimensional requirements for the District.

245-7 General Residence District

Sub-Section 245-7.A(2) notes “Multifamily residences” are a permitted use in the District. The term “Multifamily residences” is not defined in the Ordinance. Again, we recommend a definition of this term be inserted into Sub-Section 245-4.

Sub-Section 245-7.B appears to add requirements necessary for the issuance of a Special Exception beyond those requirements stated in Sub-Section 245-41. Specifically, Sub-Section 245-7.B states: “... providing that the building conforms in general value to other structures in the neighborhood and the uses do not radically reduce the value of existing property in the neighborhood”. If these two statements are intended to create Special Exception criteria beyond those specified in Sub-Section 245-41, we recommend this be stated. In addition, these two statements contain vague language such as “general value” and “radically reduce the value”. These are undefined terms. If an applicant’s home is estimated to be valued at \$100,000 less than a neighbor’s home would that result in the denial of a Special Exception even if it can be properly demonstrated that no surrounding property values would be diminished? If so, this provision would appear ripe for legal challenge. In any case, we recommend the intent and applicability of this Sub-Section be clarified.

Under Sub-Section 245-7.B, a number of uses are permitted in the General Residence District by Special Exception; however, separate minimum lot area, frontage and yard requirements for these uses are not specified. Given this open parameter, a hospital, a church, or any of the other uses listed could be located on a 20,000 square foot lot. Although the Special Exception criteria outlined in Sub-Section 245-41.D could be used to deny an application that attempted to overdevelop a site, we suggest consideration be given to increasing the minimum dimensional requirements for some of these non-residential uses.

A review of existing lot dimensions in the General Residential District indicates many are presently nonconforming in regard to both minimum lot area and frontage. This District surrounds downtown and epitomizes the “classic” New England Village, which the citizens of Peterborough passionately admire. In many of our meetings, the phrase “we want to create and protect what we have” was heard. Today, the same village setting that is admired could not be recreated in the General Residence District given the minimum dimensional requirements of Section 245-7.C. Correspondingly, we recommend the minimum dimensional requirements for the General Residence District be amended to be consistent with the existing village form. A number of regulatory options are available to

further this recommendation, including Traditional Neighborhood Design (TND) and Form Based Zoning which are discussed in detail below and in the Appendix.

Sub-Section 245-7.C(5) includes a requirement that: “development with a net density in excess of two (2) dwelling units per **net acre**, after deducting driveways and access roads, shall be served by town sewer”. The term “net acre” is not defined in the Ordinance and the reference to “deducting driveways and access roads” is confusing. We recommend these current deficiencies be corrected.

Sub-Section 245-7.C(6) states “any alterations to existing property shall provide for off-street parking ...”. The word “alterations” is undefined. Typically, this type of requirement is triggered only when there is a change or expansion of use. We recommend the language of the Ordinance be reworded for clarity. In addition, this type of language may be more properly situated in the Town’s Parking Regulations rather than the Zoning Ordinance so that it may be applied generally throughout all districts.

Sub-Section 245-7.C(9) states: “these requirements shall not apply to any project previously approved by the Planning Board”. This statement appears to create a grandfathering clause for only those projects that were permitted by the Planning Board at one time or another. New Hampshire Law clearly dictates all legitimate pre-existing, non-conforming conditions are exempt from subsequent zoning amendments, regardless of whether they were initially approved by a Planning Board or not. We recommend that this provision be deleted or modified to be consistent with applicable Law.

245-8 Rural District

Sub-Section 245-8.A(2) notes that general farming is allowed in the Rural District, except for one specific lot located on Hunt Road, where chickens and pigs are prohibited. Imposition of a restriction on only one parcel in a district represents “spot zoning”, which remains unfounded under applicable New Hampshire Law. We recommend that this exception be deleted.

Sub-Section 245-8.B lists several uses permitted by Special Exception. This Sub-Section also includes what appear to be criteria that must be met in order for a Special Exception to be granted. Sub-Section 245-41 spells out specific criteria that must be met in order for any Special Exception to be granted. Are the criteria outlined in Sub-Section 245-8.B supplemental to those identified in Sub-Section 245-41? If so, we recommend the text of the Ordinance be revised to specifically indicate the same.

Sub-Section 245-8.B(2) states: “the removal of fill, gravel, sand or loam for commercial purposes” requires a Special Exception from the Zoning Board of Adjustment. Sub-Section 245-8.C states: “the removal of two-thousand (2,000) cubic yards of fill, gravel, sand, or loam for commercial purposes” requires both a “Special Permit” and “Site Plan Review approval” be obtained from the Planning Board. These two Sub-Sections appear to create a conflicting jurisdictional purview between the Planning Board and the Board of Adjustment. In addition, there are no Special Permit criteria listed in the Zoning Ordinance for the Planning Board to follow. We suggest that this matter be clarified.

5) 245-11-1 Office District

Sub-Sections 245-11-1.C(1) and (2) both contain language that appears to outline Special Exception criteria. As noted previously, if this is the intent, then the paragraphs should clearly state that these criteria are supplemental to those general criteria contained in Sub-Section 245-41 of the Ordinance.

Sub-Section 245-11.1.D lists a series of prohibited uses. This is the only district for which the Ordinance includes a recitation of specific prohibited uses. Customary zoning ordinance interpretation dictates that if a specific activity is not cited as a permitted use, then it is not permitted. Correspondingly, we recommend this recitation of prohibited uses be deleted; and specific language be added as a general provision to the Zoning Ordinance indicating any particular use shall be considered a prohibited unless identified as a permitted use under the terms and conditions of the Ordinance.

Article III Overlay Zones and Districts

245-12 Shoreland Conservation Zone

Given the similar statement of purpose provided in Sub-Sections 245-12 and 245-15, (Wetland Protection District), we recommend consideration be given to consolidating these two Sub-Sections. All Ordinances relating to water bodies and wetlands would then be located in one place, simplifying administration and consolidating like requirements.

Sub-Section 245-12.A provides for a reduction of the Shoreland buffer from 100 feet to 50 feet for properties within the Downtown Commercial District. This is a logical provision given the urban nature of this village setting. However, given the fact that much of this area is so heavily developed consideration should be given to eliminate this Buffer are all together or reduce it further. In addition, we recommend that consideration be given to provide a buffer reduction for properties located within the General Residential District, which are situated adjacent to the Downtown Commercial District. This area is characterized by small developed lots that mirror many of the same development patterns found in the Downtown Commercial District.

Along this same vein, thought should also be given to the Shoreline Exemption procedure that is provided for in RSA 483-B:12 of the Comprehensive Shoreline Protection Act. Section I of this provision states, “The governing body of a municipality may, in its discretion, request the commissioner to exempt all or a portion of the protected Shoreland within its boundaries from the provisions of this chapter if the governing body finds that special local urbanization conditions exist in the protected Shoreland for which an exemption is sought.” Urban land use patterns similar to those found in Peterborough’s Downtown Commercial District would meet the exemption qualifiers outline in the Act. Allowing for the natural growth of the Peterborough’s center is consistent with the community’s stated goal to encourage growth near the downtown. Moderating these shoreline buffers in the urban core will further encourage expansion of this area.

Sub-Section 245-12.D stipulates a Special Exception is required in order to properly permit the construction of streets, roads and access in the Shoreland Conservation Zone. Pursuant to the authority offered under RSA 674:21, we recommend the current Special Exception requirement be replaced with a similar requirement for a Condition Use Permit. The rationale for this recommendation is detailed under comments offered relative to Article VIII which follow.

245-15 Wetlands Protection District

Sub-Section 245-15.E(2) includes Special Exception criteria for the construction of access ways or utility construction within the District. Sub-Section 245-15.F(5) outlines provisions under which the 50-foot buffer or setback between jurisdictional wetlands and a built environment may be reduced by Special Exception, for redevelopment of existing commercial properties along the western side of Route 202. Again, we recommend such reductions be permitted by Conditional Use Permit instead of by Special Exception. Again, the rationale behind this recommendation is discussed under comments offered in regard to Article VIII, which follow.

245-15.1 Bulk Fuel Storage District

The requirements outlined in this Sub-Section apply to only one property in Peterborough. When faced with unique use issues such as this, especially when applied to only one parcel, we recommend the Planning Board consider returning this single property to an appropriate base zoning district; and in turn, develop language by which the unique needs for the use of this singular property can be controlled and administered through the Conditional Use Permit process. Our concern is that by having a specific district for the use of just one parcel drifts towards the question of spot zoning, which is generally not supported by applicable Law and potentially sets a bad precedent, which proponents of other unique land uses could choose to pursue by petitioned zoning amendment.

Article IV – Supplemental Provisions

245-17 Certain Manufactured Housing

Sub-Section 245-17.A prohibits manufactured homes having less than 320 square feet from being located on any property more than 30 days. Sub-Section 245-17.B details Special Exception criteria which provides for the ability to permit a manufactured home to be located on a property up to one full year. Requests for this type of use often stem from the need to house a family dislocated from their home because of a fire or natural disaster. The requirement to obtain a special exception from the Zoning Board of Adjustment during a time of family crisis appears to be burdensome. Correspondingly, we recommend consideration be given to amending the Ordinance to permit a homeowner to place and occupy a temporary manufactured home on their property if it is determined by the Building Inspector that an existing residence, previously occupied by that individual or family, may not be occupied due to fire or similar disaster for up to one year during the time of reconstruction. Many of criteria outlined in Sub-Section 245-

17.B could remain as written to insure public health and safety concerns are addressed. Addressing this matter will also bring this Section into conformance with RSA 674:32 II which prohibits a zoning ordinance from limiting a property owner from occupying a mobile home on a property while the residence is being rebuilt as the result of a fire or natural disaster.

245-18 Signs

A sign ordinance is always a challenging proposition. We understand many issues have occurred within the community in regard to signage and variance requests before the Zoning Board of Adjustment have been frequent. Because of the complexity, controversy and time commitment that typically surrounds amending a sign ordinance, we typically refrain from comment. If significant issues do exist with the Sign Ordinance, we recommend that a subcommittee be formed of members of the business community, the Planning Board, the Zoning Board and Peterborough citizens to review and potentially offer recommendations as to the possibility of pursuing amendments to the current Sign Ordinance. Given the limited funds associated with this review effort, the Planning Department Staff felt the Project Team's time would be best spent on other Sub-Sections of the Zoning Ordinance.

245-19 District boundaries

Sub-Section 245-19.A states that the written descriptions provided in Article X shall prevail if and when a discrepancy exists between those descriptions and the District Map. We strongly recommend that an Official Zoning Map for the Town of Peterborough be adopted and the Official Zoning Map graphically depicts district boundaries consistent with those indicated in the written descriptions. With the sophisticated mapping capabilities that exist in the community today, creation of a reliable zoning map could easily be achieved. We believe it is important for both property owners and those administering the Ordinance to have the ability to readily determine in which zoning district or districts a parcel may be situated. Relying solely on written descriptions can and has led to confusion in interpretations, legal questions and conflicts. In addition, the exiting Peterborough Zoning District Map outlines a number of "gaps" of illogically zoned areas that were created as the result of unclear district descriptions. Based on interviews with the Staff, it appears that the main reason behind the lack of an official zoning map in the community are disagreements in regard to the true location of district boundaries based on historical description. It is imperative that the Planning Board resolve these conflicts by setting out a procedure to resolve them. This procedure, which should be a public process, could entail the following:

- Pinpoint areas of concern or dispute;
- Through research of historical records, minutes, etc. gather all available data relative to the zoning district boundary in question;
- Based on the record, make the most defensible determination as to where the zoning district boundary should be. Such determinations should reflect the historical intent of the warrant article or articles affecting the decision, as determined through examination of the public record. If a consensus can not be reached in regard to a particular area or areas, the Planning Board will then

- make the determination as to the location of the zoning district boundary(s) based on the quality of evidence available;
- The resulting Zoning District Map should then be advanced to Town Meeting for adoption. If adopted by Town Meeting, said map would from that point forward have status as the Official Zoning District Map of the Town of Peterborough; and
 - Any subsequent amendments to the Official Zoning District Map should both be described in words and be graphically depicted on future versions of the Official Zoning District Map.

245-24 Home Business, Professional Uses and Customary Home Occupations and Home Industries

Sub-Sections 245-24.D, entitled “Professional Uses and Customary Home Occupations”, and 245-24.E, entitled “Home Industries”, indicate a Special Exception is required for each of these uses and goes on to cite specific criteria, which must be met in order for a Special Exception to be granted. Again, are these criteria supplemental to those cited in Sub-Section 245-41 or are these the only criteria that must be met? We recommend the text of this Sub-Section be clarified to address this point.

245-24.1 Accessory dwellings

The same recommendation as above is offered in regard to those apparent Special Exception criteria noted in the text of Sub-Section 245-24.1.B

246-26 Open Space Residential Development

Sub-Section 246-26.D, Sub-Paragraph (2), entitled Permitted Uses does not specify which types of residential dwellings are permitted (duplexes, townhouses, garden style type buildings) in an Open Space Residential Development. We recommend this point be clarified.

Sub-Section 246-26.D, Sub-Paragraphs 5 and 6 specify minimum lot area, yard and frontage requirements. It appears that this Sub-Section does not provide for a condominium form of development where there are typically no lot lines around individual dwellings. To promote flexibility in design, we recommend the Planning Board consider allowing for a “zero lot line” condominium form of ownership while maintaining all other applicable requirements of the Ordinance as written.

Sub-Section 246-26.D, Sub-Paragraph 7, entitled Landscape Buffer, requires a 75-foot landscape buffer around the perimeter of the tract. We question the need for a substantial buffer of this dimension, given the compatibility of homes situated in an Open Space Residential Development with other homes. A substantial buffer may be appropriate in cases where an Open Space Residential Development abuts a non-residential use. Since land within the required landscape buffer is typically designated as open space; and is thereby eligible to be used to satisfy the minimum open space requirements of the Ordinance, it is believed the intent of the Ordinance to preserve and protect open space may be better served by promoting contiguity of open space.

Article VI – Nonconforming Uses

Sub-Section 245-30.A states that a Special Exception is required to replace any nonconforming use, provided two criteria are met. As previously questioned in regard to other sub-sections of the Ordinance, are these criteria supplemental to those contained in Sub-Section 245-41? If so, we recommend the Ordinance be clarified accordingly.

Sub-Section 245-30.1.A states that non-conforming buildings may be enlarged, provided that they do not exceed the height of the existing building or structure. We question the logic of this provision. If a building can be enlarged to a greater height and still meet the District's height requirements, why shouldn't that construction be permitted?

Article VII – Additional Requirements

Sub-Section 245-32. Off-street parking:

We recommend this Sub-Section 245-32 be deleted from the Zoning Ordinance and inserted into Chapter 233, Site Plan Review Regulations. Parking is not a land use or activity that requires oversight through the Zoning Ordinance. Although this Sub-Section does provide the Planning Board with some flexibility in reducing the number of parking spaces required, potential cases could be presented that would require Board of Adjustment action. Parking relates, in most cases, specifically to projects subject to Site Plan Review by the Planning Board; and therefore should be made a part of the Site Plan Review Regulations.

Sub-Section 245-33. Pollution and disturbance:

Sub-Section 245-33.B(5) states that a Special Exception may be granted provided certain conditions are met. As noted previously, are these Special Exception criteria supplemental to those contained in Sub-Section 245-41? If so, this Sub-Section should indicate the same.

Sub-Section 245-33.C limits noise levels emanating from a property to 10 to 15 decibels above the "ambient level". Since the term "ambient level" effectively represents the "background" level of sound, which forms a baseline for subsequent measurement and enforcement, we recommend the Ordinance be expanded to specify an objective methodology by which the "ambient level" of sound is to be measured and determined for the purposes of administering the Ordinance. Further, we recommend the Ordinance be expanded to differentiate between periodic and impulsive sources of sound; and establish varying levels of protection for daytime and nighttime uses. In general, our concern with the lack of specificity of the current noise ordinance is the reality of unintended consequences if in fact it were to ever be enforced as currently written. As written, literal enforcement would necessitate the issuance of a zoning violation each time a homeowner operated a lawnmower or snow blower on most residential properties. Correspondingly, we recommend Sub-Section 245-33.C be deleted as written and be replaced with an ordinance that is not only reasonable, but also is constructed in a manner that makes administration of the same possible.

Sub-Section 245-33.D, Sub-Paragraph (7) specifies that light shall not trespass onto adjacent properties and public ways in excess of 0.1 foot-candles. We question the true need for such an absolute requirement. The lighting of an intersection of a commercial site driveway and a public street is just one example to consider. This type of lighting is not only desirable, but often required of applicants advancing a site plan through the non-residential site plan review process. Under the current Ordinance, proper lighting of an intersection or driveway could effectively create a zoning violation. Correspondingly, we recommend the text of Sub-Paragraph (7) be amended to account for instances where lighting beyond a property line may be appropriate.

Sub-Section 245-33.F states a Special Exception may be granted if criteria outlined in Sub-Section 245-33.H are met. This appears to be a typographical error as Sub-Section 245-33.I provides for specific Special Exception criteria, while Sub-Section 245-33.H discusses electrical disturbance. Again, as previously noted, are the Special Exception criteria contained in Sub-Section 245-33.I intended to be supplemental to those contained in Sub-Section 245-41?

Article VIII – Board of Adjustment

In this report we have documented the numerous cases in which a special exception is required, either for a specific use or associated with wetland or shoreline activity. Under the current Ordinance, as many as thirty-seven (37) separate and distinct activities or uses require approval of a Special Exception. We have recommended Article II be revisited to determine if a number of the Special Exception uses identified can be eliminated either by designating some uses as permitted by right, or by prohibiting some uses in some districts, or in the case of land development proposals subject to site plan review by the Planning Board, by replacing the requirement for a Special Exception with a requirement for a Conditional Use Permit. We have noted that in many cases the Ordinance is not clear in regard to the true extent of criteria needed for issuance of a Special Exception.

A review of recent Zoning Board of Adjustment (ZBA) applications indicates that a significant number of applications received by the ZBA involve proposed activities in either the Shoreland Conservation Zone or the Wetlands Protection District. The minutes of public hearings held by the ZBA in response to many of these requests suggest the ZBA has frequently focused on matters related to: vehicular access and circulation; design of driveways and roadways; driveway and roadway grades; a variety of specialized engineering studies and reports; emergency vehicle access; stormwater management considerations; and erosion and sediment provisions

Any Zoning Board of Adjustment is a “constitutional safety valve”, authorized by applicable Statute to provide the necessary flexibility to ensure that a zoning ordinance is applied equitably to all property.² The term “special exception” has been in place since the State of New Hampshire’s Zoning Enabling Act was adopted in 1925. This procedure has allowed communities to grant relief from a zoning ordinance provided specific criteria are met. With the adoption by the New Hampshire Legislature of RSA

² The Board of Adjustment Handbook, February 2007, OEP.

674:21, entitled Innovative Land Use Controls, a new and more appropriate avenue was created for zoning relief. Conditional Use or Special Use Permits enable a Planning Board to consider applications that require an additional level of review than would typically be necessary. The Town of Peterborough is currently using the Conditional Use Permit (CUP) process to provide for the modification of standards in the Downtown & Commercial District and the Business/Industrial District.

As discussed under our comments relative to Article II, we recommend that Special Exceptions for wetland and shoreline activities be replaced with the requirement for a Conditional Use Permit administered by the Planning Board. The current system, whereby an applicant applies to the ZBA, may be referred to the Planning Board for input, and then return to the ZBA for consideration of approval; only then to return to the Planning Board for consideration of an application for Site Plan Review and/or Subdivision Approval, is to say the least a circuitous process. Given the detailed purview the Planning Board enjoys in reviewing proposed land development projects in the community, from conceptual layouts to final designs, it is more appropriate for the Planning Board to consider access points, design alternatives, grading impacts, and other key development matters. The Planning Board reviews proposed projects in a macro approach, analyzing the entire development site and is not focused on one particular issue. In determining proper access, it is imperative that all development factors be taken into consideration. Conditional Use Permit criteria can be worded to insure proper sensitivities are included as are required today in the Special Exception procedures. Specific criteria can be developed that will ensure proper safeguards are in place to address specific land use matters. Input from the Conservation Commission should continue to be incorporated into the decision making process in order to assist the Planning Board in reviewing such matters.

245-41 Conditions for appeals and special exceptions

Sub-Section 245-41.D, Sub-Paragraph (1)(b), states: “damage to valuable trees” should not occur. We did not find a definition of the term “valuable tree” in the definition portion of the Ordinance; and this specific criterion appears arbitrary. We recommend that this provision be deleted or clarified.

Sub-Section 245-41.D, Sub-Paragraph (1)(d), states: “If economically viable alternatives exist, the use should not preempt land having special qualities suiting it for other uses, such as agriculture on prime agricultural soils.” It is our opinion that this statement is very open ended which could lead to the denial of an application based upon the potential for some future theoretical land use. If it is the community’s intent to preserve farmland or some other key land resource, then specific ordinances and regulations should be drafted to address this matter. We recommend that this criterion be deleted.

245-42 Duration of approval

At this time, all variances and special exceptions granted by the Board of Adjustment are only valid for two years if, during that time period substantial compliance (with decision) or substantial completion has occurred. Neither of the terms “substantial compliance” or “substantial completion” are presently defined in the text of the Ordinance, although the

term “substantial improvement” is. We recommend that these two critical terms be specifically defined in the Ordinance.

In addition, the specified two year time frame appears too short given the time consuming permitting process which often follows receipt of a special exception or variance. Consideration should be given to either extending the time frame, or alternately removing the time frame requirement altogether for those projects requiring subsequent Planning Board action prior to issuance of a building permit.

245-43 Special exception for elderly housing

Sub-Section 245-43.B(1) indicates elderly housing uses are permitted by Special Exception in all locations except the Business/Industrial and Office districts. Under the provisions of Article II, District Regulations, elderly housing is not identified as a special exception use. The Monadnock Community Health Care District identifies “elderly housing” as a Permitted Use. In addition, residential uses are permitted in the Downtown District. Although the term elderly housing is not specifically used, elderly housing is obviously a primary use in the Retirement Community District. In order to add clarity to the Ordinance as a whole, we recommend Article II be amended to identify whether or not Elderly Housing is permitted in each district; and if so, further indicate whether it is permitted by right of by Special Exception.

245-44 Special exception for low and moderate-income housing

Sub-Section 245-44.C(1) states that affordable housing uses are allowed in the General Residence, Rural and Commercial Districts. Under the provisions of Article II, District Regulations, affordable housing is not identified as being permitted by right or by Special Exception. In order to add clarity to the Ordinance, we recommend Article II be amended to specifically indicate whether or not Affordable Housing is permitted by right or by Special Exception in certain districts.

Sub-Section 245-44.C(3) appears to indicate that Affordable Housing can only be provided to those who rent and is not intended to provide individual home ownership. Since affordable home ownership is a goal in the community, we recommend that this Sub-Section be amended to clearly state that home ownership is permitted under this Sub-Section.

Chapter 2 Nonconforming Lots and Uses

Zoning districts, generally, should reflect like land uses with use and dimensional requirements consistent with what exists in the neighborhood today. It is not uncommon in older, established communities to have pockets of non-conforming lots and uses. If large areas with non-conformities (area or use) exist in a neighborhood, questions arise as to the appropriateness of an area's designated zoning. As noted in the Court's decision in the matter of Simplex Technologies, Inc. v. Town of Newington, "*municipalities must coordinate their zoning ordinances to reflect the current character of their neighborhoods*". When a significant number of non-conformities exist, a concerted effort should be made to address these matters through changes to the district requirements, the creation of a new zoning district, or the addition of specific language to the nonconforming lots and uses section(s) of a zoning ordinance to accommodate the problem.

Through the Town's GIS system, a detailed assessment of land use patterns and lot area conformities was possible. Working with Staff, a limited review of nonconforming parcels was undertaken in the Family and General Residence zone. An analysis of these two districts together concluded:

Total Family & G. R. parcels	1,198	
Developed Parcels	1,079	90%
Undeveloped parcels:	119	
Undeveloped non-conforming parcels	42	35%
Developed non-conforming parcels	290	26%

Thirty-five percent of the undeveloped parcels in the Family and General Residence Districts are non-conforming. Twenty-six percent of the developed parcels are non-conforming. Although specific data was not broken out for each district individually, the Staff did indicate that a majority of the non-conforming parcels exist in the Family District. With a third of undeveloped parcels non-conforming, along with a quarter of developed parcels, a large enough portion of properties do not conform to the district area requirements that further investigation is warranted. We suggest that the Planning Staff undertake a more detailed analysis of both the Family and General Residence Districts, separately, to further fine tune the reported findings. If this analysis results in a finding that a larger portion of a district contains non-conforming properties, then specific changes to the Ordinance may be in order.

In speaking with Staff and through anecdotal evidence, it appears there are numerous non-conforming uses in the community. To fully understand the extent, a detailed land use map should be produced by the Planning Department outlining specific land use types overlaid with district zoning. Staff has indicated that this map is on the Department's "to do list" and will be started in the near future. The findings of this analysis will provide the Planning Board with an overview of how well the existing zoning districting matches existing land use patterns. As outlined above, if significant areas of non-conformities are discovered, specific ordinance changes may be warranted. Again, these amendments could include zoning district changes dealing with uses or district boundaries, or addressing the matter by amending those sub-sections of the Ordinance which address non-conforming lots and uses.

Chapter 3 - Zoning Districts

We have reviewed the arrangement of Peterborough's zoning districts and find both a rational hierarchical arrangement along with meandering and scattered patchworks. Recently, following recommendations found in the Master Plan, Peterborough has taken positive steps to address long standing issues that have beset their zoning district arrangement. Recent changes have included the creation of the West Peterborough District and the Monadnock Community Health Care District; and a comprehensive rewrite of the Downtown Commercial District, the Commercial District, the Business/Industrial Districts, and the Village Commercial District. It is the community's hope that these newly crafted districts will lead to positive economic growth and a stronger sense of community. We applaud the community's efforts in these regards.

The shape and location of a number of zoning districts in the community, when applied against traditional zoning principles, raises questions that should be discussed. We offer the following comments to some of these Districts and their current boundaries:

Family District: This one acre, predominately single family district lies near the center of the community. One of the curious aspects of this district is the many "frontage" areas that are a part of the Family District, resembling more of a strip commercial zone than a residential district. In addition, a portion of the District extends well into the Rural District. These oddities occur along: Sand Hill Road; Route 101; High Street; Route 202 South; and Old Dublin Road. In addition, non-contiguous pockets of this District are found on: Windy Row; Powers Bridge Road; and Evans Road. We suggest that the Planning Board undertake a review of these non-contiguous areas to evaluate the appropriateness of these areas remaining in the Family District.

Office District: This District involves only a handful of properties: a single lot fronting on Wilton Road (NH Route 101); and a few properties (most of which are in public ownership) at the intersection of NH Routes 202 and 136. Creating a zone for such a small area, in one case a single lot, does not appear necessary. Consideration should be made to rezoning the Route 202 and Route 136 properties to either Business/Industrial or Commercial; and placing the Wilton Road property in the General Residence District.

Retirement Community District: This District encompasses two properties, one being occupied by the River Mead retirement community; and the other vacant. Creating zoning districts for single uses should be avoided. A more appropriate approach for such a use is to allow retirement communities through the conditional use permit process, which could incorporate many of the criteria outlined in Section 245-11.2 of the Zoning Ordinance.

Zoning Districts – General Comments:

District holes - A review of the Zoning District Map provides a clear view of the mosaic pattern of Peterborough's zoning districts. The Map outlines a number of "holes" that exist, which predominately result in Rural District lands being surrounded by other higher density districts. These holes occur in an area to the east of High Street; along

Hunt Road; west of Concord Street just north of Main Street; and east of Webb Road. We suggest these areas be studied to determine if rezoning to one of the adjacent higher density zones would be appropriate.

Family & General Residence Districts - During our work sessions, the availability of vacant lands within the Family and General Residence Districts was acknowledged on a number of occasions. It was explained that many of these areas were “built-out” and that additional lands should be added to these districts with the goal of directing growth towards the center of the community and taking the pressure off the more rural areas of Town. Although this specific initiative was not raised in the Master Plan, the Master Plan did touch on the need to encourage infill development and allow for urban densities at select locations. In concert with the recommendation outlined above suggesting the need to undertake an in depth review of lot dimensions and non-conformities, a modest expansion of these two residential districts to areas adjoining their present locations should be considered. As appropriate, necessary community water and sewer systems should be extended into any rezoned areas. These utility extensions are typically funded by the applicant proposing any development.

Split Zoned Properties – There are numerous split zone properties in the community, a majority of which are located in residential districts. We strongly recommend that split zoned properties be avoided whenever possible in order to avoid the numerous legal complexities that can arise for property owners. The Zoning Ordinance only addresses split zoned lots in Section 245-19; which provides for a 50 foot extension into an adjoining district. Zoning district boundaries should follow property lot lines whenever possible. Where deep lots exist, the zoning district should be extended further into the site to avoid diminutive areas of split zoned property. Short of rezoning properties to match their lot lines, we suggest the adoption of a zoning amendment that would provide for the extension of a zoning district onto a property if more than fifty percent of a site is situated in a particular district.

Chapter 4 - The Zoning Ordinance & Master Plan

During our group discussions the relationship between the Zoning Ordinance and the Master Plan was discussed. The general sentiment in the community appears to be that there is currently a “disconnect” between the Master Plan and the Zoning Ordinance; and that these two documents speak in different languages. This disconnect is not uncommon and in fact, is often the norm during the period soon after adoption of an updated master plan. A master plan will often map out a path for a planning board to take, providing guidance on regulatory changes involving zoning ordinances, site plan review and subdivision regulations. These changes could be significant and may take years to implement. With this being the case, these two documents can, at times, often seem out of sync.

As previously discussed, the Town of Peterborough has recently taken steps to implement several of the recommendations outlined in the Master Plan. Many of the new district ordinances include purpose statements which quote language from the Master Plan, thereby providing guideposts for any new development that may be proposed within those districts. An Implementation Strategies matrix has been developed to track implementation progress; detailing time lines and progress towards completing the Plan’s many stated goals. This is an excellent strategy which keeps the Master Plan in the forefront of community discussion.

Although progress has been made in implementing many of the Master Plan’s specific recommendations, to fully infuse the vision of the Master Plan into the Zoning Ordinance, the document should be fully rewritten as one task. A piecemeal approach will only continue to create a disjointed document, with a potential for creating additional inconsistencies and blurred visions. This will be a significant undertaking, involving considerable time and effort on the part of the Planning Board and Office of Community Development. However, it is our opinion that this approach is the only way to insure that the Zoning Ordinance is as consistent as possible with the full vision and stated goals of the Master Plan.

Chapter 5 - Key Issues:

To address reoccurring challenges in the community that were either raised in our open discussions or discovered through our analysis, we offer the following recitation of potential ideas for your consideration. This list of recommendations is not meant to be exhaustive. Rather, these recommendations are intended to stimulate meaningful discussion amongst the Planning Board and the community.

Controlling Sprawl - As is the case in many Southern New Hampshire communities, the concern of losing “rural character” is always at the forefront of resident’s minds. Peterborough’s Zoning Ordinance, under Open Space Residential Development, does provide an avenue to encourage proper rural residential design. However, this Ordinance is an option available to developers and is not required. We suggest the Planning Board consider an ordinance that would mandate all residential development in the Rural District be advanced under the Open Space Residential Development option. A provision could be provided to exempt small developments (five lots or less) from this requirement.

Since 1993 the Town of Hollis has mandated that all residential development in excess of five lots be developed following the Hollis Open Space Planned Development Ordinance. This provision has allowed the Town of Hollis to protect its scenic qualities in a manner consistent with its rural character. Recently, Hollis has added further controls with the adoption of the Rural Character Preservation Ordinance, which incorporates requirements for tree clearing, grading, home placement and landscaping. The Town of Amherst requires a 100-foot setback for all structures along certain identified streets, including all designated Scenic Roads. Their ordinance protects scenic areas of the community, while preserving reasonable development opportunities.

Form-Based Codes - A method of regulating development to achieve a specific urban form, form-based codes create a predictable public realm by controlling physical form primarily, with a lesser focus on land use, through zoning regulations.³

Form-based codes address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks. The regulations and standards in form-based codes, presented in both diagrams and words, are keyed to a *regulating plan* that designates the appropriate form and scale (and therefore, character) of development rather than only distinctions in land-use types. This is in contrast to conventional zoning’s focus on the segregation of land-use types, permissible property uses, and the control of development intensity through simple numerical parameters (e.g., FAR, dwellings per acre, height limits, setbacks, parking ratios). Not to be confused with design guidelines or general statements of policy, form-based codes are regulatory, not advisory.

Form-based codes are drafted to achieve a community vision based on time-tested forms of urbanism. Ultimately, a form-based code is a tool; the quality of development outcomes is dependent on the quality and objectives of the community plan that a code

³ Form-Based Code Institute

implements.

Form-based codes commonly include the following elements:

- *Regulating Plan.* A plan or map of the regulated area designating the locations where different building form standards apply based on clear community intentions regarding the physical character of the area being coded.
- *Building Form Standards.* Regulations controlling the configuration, features, and functions of buildings that define and shape the public realm.
- *Public Space/Street Standards.* Specifications for the elements within the public realm (e.g., sidewalks, travel lanes, street trees, street furniture, etc.).
- *Administration.* A clearly defined application and project review process.
- *Definitions.* A glossary to ensure the precise use of technical terms.

Form-based codes also sometimes include:

- *Architectural Standards.* Regulations controlling external architectural materials and quality.
- *Annotation.* Text and illustrations explaining the intentions of specific code provisions.

With the expectation that residential and commercial growth will continue, Form-Based Zoning codes can be applied to encourage and direct that growth, in a compact, high-density, mixed-use, and more pedestrian friendly town/village center district, where municipal fiscal impact is significantly reduced. This form of "smart growth" satisfies the private development community's needs to undertake profitable building projects, and tends to attract young "pre-family" professionals and the 50+ "empty-nesters" demographic to the new "walkable" town/village center residential district. This form of regulation is consistent with Peterborough's Master Plan. Neighborhood applications for this type of zoning would be the many urban village areas that presently surround the Downtown Commercial District. The calls from the community to "build developments similar to what we have already" can be accomplished through the use of Form-Based Zoning codes. Additional information on this zoning method can be found at the Form-Based Code Institute's website www.formbasedcodes.org. In addition, Appendix contains excerpts from the Zoning and Land Use By-Laws for NAS South Weymouth, adopted in May of 2005.

Traditional Neighborhood Development (TND) (also called "New Urbanism" and "Neo-Traditional Neighborhood Design") is a planning principle that has gained acceptance in recent years as being one solution to a variety of problems in suburban communities throughout the country. Traditional neighborhoods are more compact communities designed to encourage bicycling and walking for short trips by providing destinations close to home and work. Under new urbanism, there is often no minimum building setback. Lot widths are typically multiples of 16 feet, and are 100 feet deep. There are a variety of residential buildings-apartment buildings, row houses, and detached houses-usually mixed with businesses. Finally, there are alleys lined by garages and secondary buildings, such as carriage houses and studios.

Affordable Housing: This topic has been at the forefront of many community discussions in recent years, especially in Southern New Hampshire, which has seen dramatic increases in home and land prices over the last 5 to 10 years. Affordable housing was noted as a key issue in the Master Plan, with concerns expressed to address the need for both work force housing and creating opportunities for young people to remain in the community. Sub-Section 245-44 provides criteria in which low and moderate income housing can be constructed through the Special Exception process. Our comments relative to this Sub-Section are noted above. It is our understanding that this provision has been infrequently used, which is a clear sign that the ordinance as written may be ineffective.

Affordable housing is a community wide issue and to properly address this matter, a community wide discussion must take place. What problem exists? Is it workforce housing (teachers, police officers, factory and office workers)? Is it young people just out of college? Is it first time homebuyers? Is it those who have only limited means? These questions must be answered in order to effectively craft meaningful solutions. The New Hampshire Housing Finance Authority is an excellent source of information and expertise on this matter. Their assets should be fully drawn upon to assist the community with this issue.

Regulatory solutions to address demands for affordable housing are numerous and with careful crafting, can fulfill many identified needs. Inclusionary zoning, Cottage Housing Development, planned urban developments (PUD's) and incentive based zoning are just a few of the tools available to communities to encourage the production of affordable housing. Since 1989 the Town of Amherst has been actively engaged in trying to address this matter. By Conditional Use Permit, affordable housing developments are permitted with Planning Board approval. Minimum standards are in place, including a provision that requires all units not to exceed 1,300 square feet in area, thereby limiting construction costs. Affordable housing is defined as a family or household whose gross annual wage is 100% or less than the areas median income. The full text of the Amherst Zoning Ordinance and Subdivision Regulations may be found in Appendix. The City of Nashua's recently adopted Land Use Code provides for incentives to create affordable housing through an Inclusionary Zoning provision.

Another emerging national trend that is being seen to address affordable housing is cottage housing developments (CHD). Cottage houses are single-family detached units, usually less than 1,000 square feet in size, that incorporate many of the amenities associated with conventional single-family detached housing. Because of the style and size of cottage houses, developers can cluster cottage housing onto smaller parcels of land without sacrificing the feel and character of detached housing. A CHD ordinance facilitates development of these units by designating specific zones in the community where housing may be constructed within a specified range of footprints. Within such zones, community officials may work with developers to establish applicable densities and design amenities.

Performance Zoning: Along Peterborough's NH Route 202 corridors lies a mixture of commercial, residential, and industrial land uses regulated by six different zoning

districts. During our community visits, the quality of development that could occur in these areas was raised. Issues centered on design, massing, impacts and potential expansion. Performance zoning may be an appropriate consideration for this corridor. Performance zoning standards regulate land uses based on their actual physical characteristics and functions - their 'performance' - measured against predetermined criteria and standards. Performance standards can include traffic generation, noise, lighting levels, stormwater runoff, loss of wildlife or vegetation, and even architectural style. The Town of Peterborough has already adopted performance standards as part of the Village Commercial District and the three other Business Districts. Local successful examples of this zoning technique can be found in Bedford, which has been regulating development along the U.S. Route 3 corridor with this zoning technique since 1994. In addition, the Town of Hooksett recently adopted performance based zoning along its U.S. Route 3 corridor.

Green Buildings & Design

The "green movement" has been gaining momentum in recent years, obtaining wider general public acceptance as energy issues have reemerged in to the public's consciousness. What started out as a charismatic environmental crusade has matured into an established sector of the U.S. construction industry.⁴ Given this trend and the hard reality of rising energy costs, it is doubtful that this movement will ebb any time soon. Locally communities are beginning to become more proactive in regard to the green movement, requiring concrete actions be taken as new or redevelopment activities occur. Peterborough's Energy Advisory Group has published a brochure highlighting numerous resources that are available to both residents and the business community. In addition, the town will soon become home to the Nubanusit Neighborhood and Farm, the state's first condominium co-housing community. Homes within the Nubanusit Neighborhood will be energy-efficient, making use of triple-pane windows, long-lasting cedar siding, south-facing roofs and other "green" features. Also, homes will be heated and hot water generated by a centrally located pellet boiler using locally produced biomass fuel. The site also is wired internally for future onsite wind and water power. In addition, the newly renovated Union Mill recently opened in western Peterborough under the direction of "green entrepreneur" Luc Monzies. Built by John Steele in 1824, the 25,000-square-foot mill building has been environmentally retrofitted and renovated and is now a successful example of sustainability. It currently houses 10 apartments, a café, organic market and numerous businesses.⁵

The Town of Epping has emerged as the center of the green movement in New Hampshire by adopting an amendment to the Energy Efficiency Sustainable Design Ordinance this past March. It is the intent of the ordinance to enhance and supplement existing federal and state incentives for tax treatment and other benefits related to alternative energy production, energy efficiency and sustainable design. The Epping Ordinance deals specifically with nonresidential development. There is a point score system which is based off of the square footage of a building. The larger the square footage, the more points the building will need. Points are given based on a variety of energy efficiencies. Some examples include HVAC efficiencies, building orientation,

⁴ Green Buildings and the Bottom Line.

⁵ New Hampshire Business Review Daily article, July 20, 2007 by Tracie Stone.

and reduction in water usage, source of building materials, daylighting and production of onsite electricity. To date, two development projects have been approved under the ordinance and both predict significant energy savings. Additional resources and websites related to the green movement are contained in the Appendix.

APPENDIX

LAND-BASED CLASSIFICATION STANDARDS⁶

Land-Based Classification Standards provide a consistent model for classifying land uses based on their characteristics. The standards are based on a multi-dimensional land-use classification model.

LBCS updates the 1965 *Standard Land Use Coding Manual* (SLUCM), a standard which was widely adopted for land-use classifications. Because many current applications and land-based data depend on SLUCM and its derivatives, this update includes tools and methods to migrate such data.

Executive Summary

LBCS provides a consistent model for classifying land uses based on their characteristics. The model extends the notion of classifying land uses by refining traditional categories into multiple dimensions, such as activities, functions, building types, site development character, and ownership constraints. Each dimension has its own set of categories and subcategories. These multiple dimensions allow users to have precise control over land-use classifications.

Classifying land uses across multiple dimensions, in database terms, means adding new fields to the land-use database. The total number of land-use fields in the database should equal the number of dimensions, that is, every record in the database is classified in not just one land-use field, but several one for each dimension. The number of dimensions, in turn, will depend on the purpose of the data. When the purpose of the data changes, dimensions may be added or dropped as needed. For local planning purposes, LBCS calls for classifying land uses in the following dimensions: Activity, Function, Structure Type, Site Development Character, and Ownership.

Activity refers to the actual use of land based on its observable characteristics. It describes what actually takes place in physical or observable terms (e.g., farming, shopping, manufacturing, vehicular movement, etc.). An office activity, for example, refers only to the physical activity on the premises, which could apply equally to a law firm, a nonprofit institution, a court house, a corporate office, or any other office use. Similarly, residential uses in single-family dwellings, multi-family structures, manufactured houses, or any other type of building, would all be classified as residential activity. [View the classification for activity types.](#)

Function refers to the economic function or type of establishment using the land. Every land use can be characterized by the type of establishment it serves. Land-use terms, such as agricultural, commercial, industrial, relate to enterprises. The type of economic function served by the land use gets classified in this dimension; it is independent of actual activity on the land. Establishments can have a variety of activities on their premises, yet serve a single function. For example, two parcels are said to be in the same functional category if they belong to the same establishment, even if one is an office building and the other is a factory. [View the classification for economic function types.](#)

Structure refers to the type of structure or building on the land. Land-use terms embody a structural or building characteristic, which suggests the utility of the space (in a building)

⁶ American Planning Association

or land (when there is no building). Land-use terms, such as single-family house, office building, warehouse, hospital building, or highway, also describe structural characteristic. Although many activities and functions are closely associated with certain structures, it is not always so. Many buildings are often adapted for uses other than its original use. For instance, a single-family residential structure may be used as an office. [View the classification for structure types.](#)

Site development character refers to the overall physical development character of the land. It describes "what is on the land" in general physical terms. For most land uses, it is simply expressed in terms of whether the site is developed or not. But not all sites without observable development can be treated as undeveloped. Land uses, such as parks and open spaces, which often have a complex mix of activities, functions, and structures on them, need categories independent of other dimensions. This dimension uses categories that describe the overall site development characteristics. [View the classification for types of site development character.](#)

Ownership refers to the relationship between the use and its land rights. Since the function of most land uses is either public or private and not both, distinguishing ownership characteristics seems obvious. However, relying solely on the functional character may obscure such uses as private parks, public theaters, private stadiums, private prisons, and mixed public and private ownership. Moreover, easements and similar legal devices also limit or constrain land-use activities and functions. This dimension allows classifying such ownership characteristics more accurately. [View the classification for types of ownership.](#)

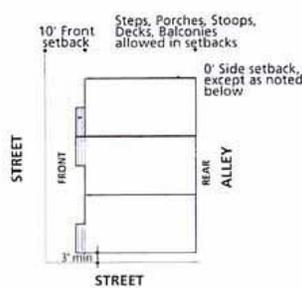
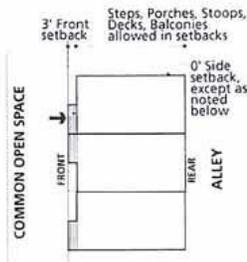
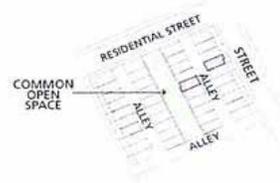
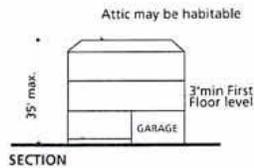
The underlying principle of the LBCS model is its flexibility. It addresses flexibility in adapting the model to a variety of planning applications, data collection methods, data-sharing and data-integrating methods, and color coding and mapping. The flexibility also makes it possible to assign new categories for new land uses, to accommodate new methods and technologies for analysis, and to customize the model for local needs without losing the ability to share data. Each of these aspects of LBCS calls for applying a variety of standards or conventions to maintain consistency in land-use classifications.

Define LBCS

- **It is a consistent model**
- **Classifies land-use characteristics**
- **Extends the idea of multiple dimensions**
- **Each dimension has a coding scheme**
- **Each coding scheme has categories**
- **Every category has multiple levels**
- **Each level is a distinct land-use characteristic**

Zoning and Land Use By-Laws NAS South Weymouth South Shore Tri-Town Development Corporation Form-Based Zoning Regulations Example

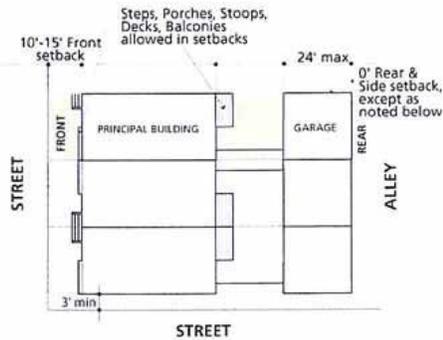
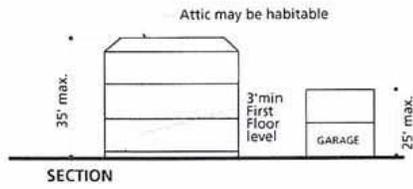
TOWNHOUSE -1 (TH1)



PLAN 1 (when facing a Common Open Space) PLAN 2 (when facing a Residential Street) (* Photos are illustrative only)

LOT OCCUPATION	Lot Area (by Unit)	800 sq.ft minimum - 1,499 sq.ft. maximum
	Lot Coverage	92.5% maximum
BUILDING SETBACKS	Front	3 feet minimum -10 feet maximum when fronting the Common Open Space. 10 feet minimum/ maximum for lots fronting the Street
	Side	No required setback except 3 feet minimum setback for lots with side lot line on residential street
	Rear	No required setback
FRONTAGE		18 feet minimum
BUILDING HEIGHT	Principal Building	35 feet maximum height
	Out Building	N/A
PARKING	Spaces	maximum 2/unit - minimum 1/unit
	Area	20 feet x 24 feet maximum
	Access	Rear access from alley
USES		Residential. First Floor of units could include Retail or Live-work. See Main Street Overlay District for special First Floor requirement.
DISTRICTS		Village Center District, Mixed-Use Village District, Residential District

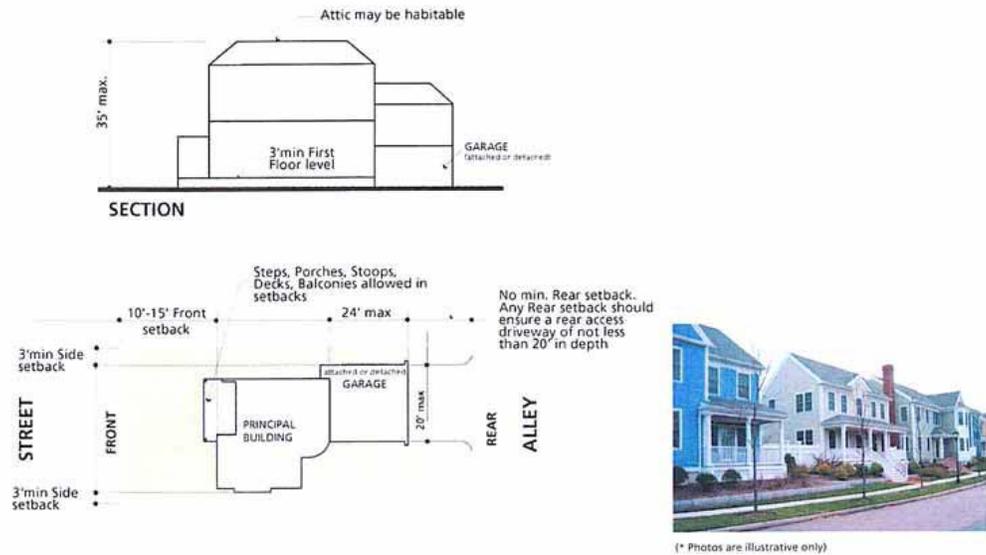
TOWNHOUSE - 2 (TH2)



(* Photos are illustrative only)

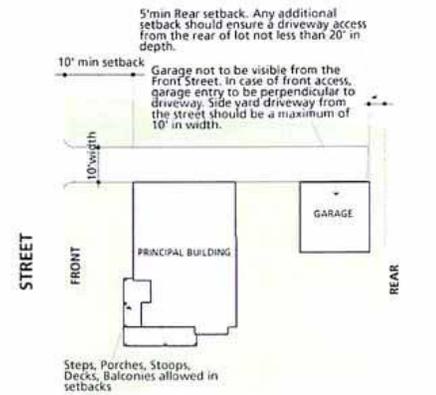
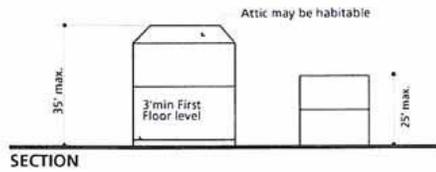
LOT OCCUPATION	Lot Area (by Unit)	1,500 sq.ft. minimum - 2,500 sq.ft. maximum
	Lot Coverage	70% maximum
BUILDING SETBACKS	Front	10 feet minimum -15 feet maximum
	Side	No required setback except 3 feet minimum setback for lots with side lot line on residential street
	Rear	0 feet minimum -5 feet maximum
FRONTAGE		18 feet minimum
BUILDING HEIGHT	Principal Building	35 feet maximum height
	Out Building	25 feet maximum height
PARKING	Spaces	maximum 2/unit - minimum 1/unit
	Area	20 feet x 24 feet maximum
	Access	Rear access from alley
USES		Residential. First Floor of Principal Building could include Retail or Live-work. Second Floor of Out Building could include Live-work. See Main Street Overlay District for special First Floor requirement.
DISTRICTS		Village Center District, Mixed-Use Village District, Residential District

SINGLE FAMILY HOUSE - up to 5,000 sq.ft. LOT (SF<5)



LOT OCCUPATION	Lot Area	2,501 sq.ft. minimum- 5,000 sq.ft. maximum
	Lot Coverage	60% maximum
BUILDING SETBACKS	Front	10 feet minimum -15 feet maximum
	Side	3 feet minimum
	Rear	No required setback
FRONTAGE		20 feet minimum
BUILDING HEIGHT	Principal Building	35 feet maximum
	Out Building	25 feet maximum in case of detached Garage
PARKING	Spaces	maximum 2/unit - minimum 1/unit
	Area	20 feet x 24 feet maximum
	Access	Entered from front or rear. On corner lots, side yard access is permitted.
USES		Residential
DISTRICTS		Mixed-Use Village District, Residential District

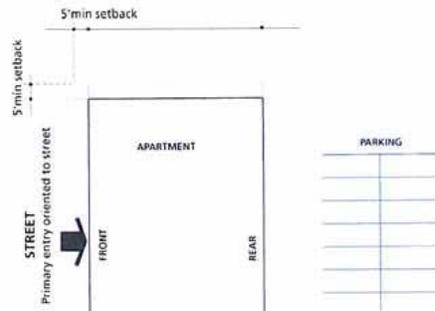
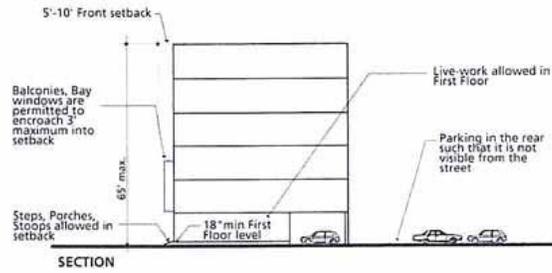
SINGLE FAMILY HOUSE - 5,000 to 10,000 sq.ft. LOT (SF>5)



(* Photos are illustrative only)

LOT OCCUPATION	Lot Area	5,001 sq.ft. minimum - 10,000 sq.ft. maximum
	Lot Coverage	40% maximum
BUILDING SETBACKS	Front	10 feet minimum
	Side	10 feet minimum
	Rear	5 feet minimum
FRONTAGE		20 feet minimum
BUILDING HEIGHT	Principal Building	35 feet maximum
	Out Building	25 feet maximum
PARKING	Spaces	maximum 3/unit - minimum 1/unit
	Area	30 feet x 24 feet maximum
	Access	Entered from front or rear. On corner lots, side yard access is permitted.
USES		Residential
DISTRICTS		Residential District

APARTMENTS (A)



(* Photos are illustrative only)

LOT OCCUPATION	Lot Area	2.5 acres maximum
	Lot Coverage	90% maximum
BUILDING SETBACKS	Front	5 feet minimum -10 feet maximum
	Side	5 feet if lot line is on a street. 3 feet minimum - 10 feet maximum if adjacent to another lot line.
	Rear	3 feet minimum
FRONTAGE		N/A
BUILDING HEIGHT	Principal Building	65 feet maximum
	Out Building	N/A
PARKING	Spaces	maximum 2/unit - minimum 1/ unit
	Area	N/A
	Access	Entry from side, rear or front. In case of front access, width of access not to exceed 20 feet.
USES		Residential. First Floor could include Live-work. In case of Main Street Overlay District refer to "Apartments with Commercial".
DISTRICTS		Village Center District, Mixed-Use Village District, Residential District

Section 8-5 Affordable Housing 3-14-89
ALLOWED BY CONDITIONAL USE PERMIT (3.6.04)

Innovative Land Use Control for Affordable Housing

PURPOSE The Town recognizes the importance and benefit to the community and its citizens in the establishment and encouragement of suitable opportunities for affordable housing. The Town also recognizes that frequently, property that may be suitable as a location for affordable housing fails to meet some of the objective criteria that govern land use, and that strict adherence to all Zoning and Subdivision requirements may render the project economically unfeasible. The Town also recognizes that there are some situations in which normal Zoning or Subdivision requirements can be waived without necessarily sacrificing public health, safety and welfare so long as proper safeguards are maintained. Accordingly, it has been deemed advisable to adopt an innovative land use control in accordance with RSA 674:21 which would permit the Planning Board to identify a project that is a suitable candidate for the waiver of requirements, and when so identified, that project would be required to meet less stringent standards, provided certain criteria were met.

IDENTIFICATION OF SUITABLE PROJECT The Planning Board may review an application to construct affordable housing and identify the same as a suitable project if the applicant demonstrates to the Planning Board that the project meets the following criteria:

1. The project shall be constructed in a manner that is harmonious with neighboring developments, housing, and natural surroundings.
2. The project shall not detract from either the ecological or visual qualities of the environment.
3. The housing proposal shall be affordable within the meaning of the Ordinance.
4. The project shall comply with all site plan and/or subdivision regulations that apply, other than those waived hereunder.
5. Where there is no existing dwelling, the net tract area (total parcel minus wetlands) shall be at least four (4) acres and not more than fifteen (15) acres, except in the Northern Rural Zone, the net tract area shall be at least ten (10) acres but not more than twenty (20) acres. 3-12-91, 3-9-99
6. Where there is an existing dwelling, the net tract area (total parcel minus wetlands) shall be at least sufficient to provide a conforming conventional sized lot for the existing dwelling and the maximum net tract area shall be as listed above. 3-12-91
7. If an existing dwelling is located on the site and sufficient evidence is presented to the Planning Board to show that the existing dwelling is affordable within the meaning of this ordinance, than No. 6 shall not apply to that existing dwelling. (3-10-98)

ZONING STANDARDS Once the Planning Board has designated a proposed project as affordable and indicated that the same is satisfactory and compliant with the above standards, that project may be located on any suitable property irrespective of the zoning district classification. Maximum number of units approved in a calendar year shall not exceed one percent (1%) of the number of dwelling units existing in Town in the preceding calendar year. This figure shall be determined each January.

LOT SIZE, DENSITY, SETBACKS, AND OPEN SPACE The traditional lot size, density, setback, and open space requirements applicable in other districts shall not apply and the Planning Board shall establish the lot size, density, setbacks, and open space requirements for each project as they determine to be necessary in the best interest of the Town and to facilitate the project, provided however, that the following limitations shall apply:

1. Lot size and density shall be not less than three quarters (3/4) of an acre for a detached single family unit and not more than two units per acre for multi-family housing, except in the Northern Rural Zone where the minimum lot size for a detached single family unit would be two (2) acres and no more than one unit per acre for multi-family housing.
2. Open space shall be sufficient to accommodate the needs of the proposed occupants of the project.
3. Setbacks shall be sufficient to buffer and protect adjacent properties and the street from encroachment. At a minimum there shall be a fifty (50) foot setback from the property line around the perimeter of the property. (3.8.05)
4. No structure shall be constructed to a height greater than thirty five (35) feet, exclusive of chimneys or cupolas, measured from the lowest adjacent exterior elevation.
5. The maximum unit size shall not exceed 1,300 square feet of heated living space, excluding basement areas. This provision shall remain with the development for a period of ten years from the date of the first certificate of occupancy. 3-12-02

RULES AND REGULATIONS The Planning Board may adopt appropriate rules and regulations to implement the review process contemplated hereunder. Such rules shall at a minimum provide for the developer to restrict the sale or lease of the units through appropriate recorded covenants to those who qualify pursuant to the definition of affordable housing contained in this Ordinance.

DEFINITION Affordable Housing shall be a residential dwelling unit available for sale or lease at a cost not to exceed the amount a household or family, whose gross annual income is one hundred percent (100%) or less of the median income. Median income is the amount defined by the U.S. Census for the Nashua Primary Metropolitan Statistical Area as updated yearly. Median income figures, adjusted for number of occupants, shall be determined annually by the Planning Board. 3-14-89 (3-10-98)

Amherst - Non Residential Site Plan Review Regulations

AFFORDABLE HOUSING PROJECT SUITABILITY PROCEDURE REGULATIONS

PURPOSE

The purpose of the within regulations is to provide the implementation procedure for the Affordable Housing Zoning Ordinance passed by the Town Amherst at the annual Town Meeting on March 14, 1989. Said Ordinance provides certain treatment for projects that meet the criteria set forth with respect to affordable housing and requires the Planning Board to review proposed projects as a preliminary matter to determine whether or not they are 'suitable' within the meaning of said Ordinance. Said Ordinance also provides that the Planning Board may adopt regulations governing the process whereby the Affordable Housing Ordinance is implemented and these regulations are intended to accomplish that. In that regard, these regulations are intended to provide for a preliminary review process wherein the Planning Board will determine the suitability of a particular project. Said Ordinance also establishes a maximum number of units that may be approved in any calendar year and, accordingly, the Planning Board, in order to implement said Ordinance, must establish by regulation an appropriate procedural vehicle for the acceptance, review and approval of suitable projects having in mind the limitation imposed by the Ordinance. Said regulations are also intended to provide for certain requirements to ensure that any project approved and implemented will continue to qualify as a suitable project after it is constructed.

APPLICATION PROCEDURE

1. Time for Application: Applicants seeking to have the Planning Board make a determination that its application is suitable within the meaning of Section 8-5 of the Town of Amherst Zoning Ordinance, may apply to the Planning Board for a review of its project pursuant to the conditions set forth herein. Said application shall be received from July 1 to December 31 in any given calendar year with the exception of calendar year 1989. During calendar year 1989, said applications shall be received during the period from May 1 to June 1, 1989. The discrepancy in filing dates for the calendar year 1989 arises from the fact that the Ordinance permitting this type of application was adopted on March 14, 1989 and an earlier filing date than the typical filing date is required in order to accommodate applications already received or contemplated. It is understood that applications will be received throughout the filing period and will not be reviewed until the filing date had expired. The reason for this aspect of the regulation is to enable the Planning Board to have all of the proposed applications in hand for review before a suitability determination is made with respect to any project.

2. Form of Application: An applicant desiring to apply for a suitability determination pursuant to these regulations shall make application on a form designated by the Town of Amherst Planning Board and shall contain all of the information required to enable the Planning Board to assess said proposal project with reference to the criteria set forth in section 8-5 of the Town of Amherst Zoning Ordinance. It is understood that the application process for a suitability determination under Section 8-5 is a preliminary

matter and is separate and distinct from the subdivision application process and these regulations are not intended as a form of subdivision regulation. In the event that a project is found suitable, the applicant will be required to complete all formal requirements of subdivision unless such requirements are waived by the Board pursuant to Section 8-5.

3. Required Information: The applicant must present sufficient information to enable the Planning Board to identify the project as suitable within the meaning of Section 8-5. Such information may include, but is not necessarily limited to, a preliminary site plan, architectural renderings, topographical maps, landscape plans showing existing and/or proposed vegetation and other information that is necessary, in the judgment of the Planning Board, to enable the Planning Board to make as judgment as to whether or not said proposal meets the criteria set forth in Section 8-5. The Planning Board and its administrative staff shall endeavor to advise applicants, when possible, during the period in which applications are received for filing of any additional specific requirements that the Planning Board feels are necessary in order to make a proper determination as to the suitability of a particular project. Failure of an applicant to provide requested information by the time of review of such application shall result in a denial of the application.

4. Hearing Process: It is understood that the submission of an application under these regulations for a suitability determination, constitutes a preliminary filing, but the Planning Board will not make a determination as to the suitability of a particular project unless the same is done at a public hearing with notification to abutters of the proposed project in order that it may ensure proper input from abutting property owners and other persons who may be effected by the proposed project or who have any information that would be germane to the application. No hearing on any application shall be scheduled until after the filing period deadline has occurred. Once the filing deadline has occurred and the time period for application filing has expired, the Planning Board shall schedule the applications for a hearing assuming all required information has been provided to the Board. Said hearing shall be scheduled within 120 days of the close of the filing period and the Board shall make a determination with respect to the suitability of the proposed project no later than 150 days from the close of the filing period.

MAXIMUM NUMBER OF UNITS

The Planning Board is required pursuant to the terms of Section 8-5 to make a determination in January of any calendar year of the maximum number of units that it may approve pursuant to said Ordinance. For the calendar year 1989, this number shall be determined as twenty-nine (29) and the determination required by Section 8-5 shall hereafter be made in January as indicated in the Ordinance. In the event that the number of applications for dwelling units that are approved as suitable in accordance with the foregoing procedure is equal to or less than the number permitted pursuant to said limitation then, and in that event, all of proposed applicants who meet the requirements of the Ordinance and are determined to have a suitable project shall be permitted to proceed to subdivision application process. In event that the number of units that are determined to be suitable in accordance with the foregoing procedure is greater than the number that

are permitted to be approved in any calendar year then, and in that event, the Planning Board may divide the yearly total among the successful applicants and allow the balance of the units identified to be suitable for the following year. In the event that the number of applications received for units pursuant to Section 8-5 is less than the permitted limit in any given year, the Planning Board may re-open the filing period, if they so choose, to permit further applications in the event that it appears to be advisable. In the event that the Planning Board, pursuant to this section, makes a determination to divide the number of available permits among the successful applicants, the Planning Board may divide said permits in a manner which, in the judgment of the Planning Board, most clearly advances the purpose for which the Affordable Housing Ordinance was promulgated.

CONDITIONS OF APPROVAL

In order to ensure that the purpose of the Affordable Housing Ordinance is met, the applicant shall be required as a condition of the finding of suitability to provide to the Planning Board a document in the form of a Declaration of Covenants or some other type of instrument satisfactory to Counsel and the Board, in form suitable for recordation in the Hillsborough County Registry of Deeds which document will encumber the property which is the subject of the application with appropriate conditions and requirements to ensure that the sale or lease of the dwelling units proposed in said application will be restricted to those persons qualified pursuant to the definition of affordable housing contained in Section 8-5 of the Ordinance. The applicant will be required to submit a proposed form of this document in the course of the application for suitability determination and no permits for the construction of any dwelling unit approved hereunder shall be granted until such time as said document has been received by the Planning Board, reviewed and approved by Counsel and the Board and is recorded in the Hillsborough County Registry of Deeds so as to restrict the property accordingly. In the event the Planning Board determines a project not to be suitable, the Board shall make written findings of its reasons for the same and in the event that the Planning Board divides the available permits among successful applicants in a way that favors any particular application, the Planning Board shall also make findings in the record of the proceedings indicating the justification for its apportionment. 4-26-89

Cottage Housing Development Code⁷

What is the Cottage Housing Development Code Provision?

The City of Langley, WA adopted the Cottage Housing Development (CHD) code provision in 1995. This provision was the first of its kind to be implemented in the Pacific Northwest and perhaps the US. The innovative nature of the provision is that it recognizes that a 1 or 2 bedroom home with less than 975 square feet (SF) of living area should not be treated the same as the typical 2,000 to 3,000 SF home. The cities of Shoreline and Redmond, Washington, followed next with a similar codes.

The code provision permits 4 to 12 small, detached cottages on a site that would normally be developed with half that number of large homes. The code provision permits this type of innovative change as a conditional use in all single-family zones. Half the cottages can be no more than 800 SF, and the other half 700 SF, on the first floor and no more than 975 square feet including a second floor. Each cottage must be adjacent to a common area. Parking at a minimum 1.25 space per cottage must be screened from the street.

The first CHD project, Third Street Cottages, completed January 1998 by the Cottage Company successfully demonstrated that 8 small cottages would fit into an existing single family neighborhood as well as 4 larger homes.



Responding to a Shift in Demographics and Growth

The CHD code provision responds to a major shift in demographics—about 40% of US households are one-person households, and 58% are one or two person households. Yet almost all new detached housing is built for larger households. There is great demand for quality, detached housing in single family neighborhoods. The Third Street Cottages is occupied by 6 single women, and two couples.

Adopting the CHD Code Provision

In working to meet the State of Washington Growth Management Act's urban growth and housing goals, the City of Langley Growth Management Committee and the Planning Advisory Board in 1994 set these criteria for any changes to the city's zoning code:

⁷ The Cottage Company.

- Any land use code provision must retain and enhance Langley's village character and foster strong neighborhoods
- Expand the range of options for detached housing
- Enhance affordability

The result was adoption of the innovative CHD provision in the zoning code. Quality housing is assured since all CHD's require a conditional use permit, which includes a public hearing and approval by the Design Review Board.

The Third Street Cottages and Greenwood Avenue Cottages

The concept behind the code changes was first put into practice with the development of the Third Street Cottages and later with the Greenwood Avenue Cottages in Shoreline, Washington. In each project, developer Jim Soules and architect Ross Chapin have built a traditionally styled, beautifully detailed "pocket neighborhood" of cottages around a courtyard garden. They have carefully designed the site, the cottages and the common elements to foster community, enhance safety and provide privacy.

- The common garden, mailbox kiosk and sidewalks are natural places for informal meetings among neighbors.
- Covered porches and kitchens overlook the commons - the "eyes on the street" concept of community policing; Neighbors look after one another; Residents feel safe
- Careful positioning of windows ensures privacy
- Parking is close-by yet located inconspicuously to the side of the cottage cluster

Implementing the Code

The original Third Street Cottages could not have happened without both public and private initiative and, close cooperation between the City and the project developers. Within a year of adoption, Soules and Chapin began exploring the cottage-housing concept. They had several meetings with the City to review development concepts and clarify the provisions of the code. Throughout the public review process, including public hearings, Soules and Chapin were willing to take the extra steps necessary to ensure a quality development that blended with its neighbors. Construction on the 4-lot (.7 acre) site began in June 1997 and the first cottages were occupied in January 1998.

This innovative project has demonstrated that clusters of smaller homes can be successfully integrated as infill in single-family areas. Planners, architects, community activists and developers from around the country have taken note of the project and its unique code provision. There has been widespread local praise for the project. As a result of these pioneering projects, cities around the region & country are actively considering adoption of some form of CHD code provision.

Energy Efficient Development

Related Tools: Minimum Impact Development, Dark Skies, Conservation Subdivision

Background and Purpose

Familiarity with energy efficient design and project planning has been steadily increasing in recent years. Site design techniques that take advantage of sun exposure, differences in microclimate, and landscaping reduce a development's demand for fossil fuel derived energy sources and overall reduce energy consumption. These planning techniques can be used in designing housing and non-residential developments, deciding on density levels, integrating different land uses, and designing transportation and circulation systems. Energy efficient planning principles can be implemented and upheld through subdivision and site plan review regulations, zoning ordinance, and building codes.

Current building codes represent the minimum legal energy efficiency for structures.

These standards are not uniformly enforced, and baseline studies in Massachusetts and other states with similar codes indicate many structures are not built to code. Furthermore, these standards focus on the building envelope and mechanical systems and disregard natural and renewable means of reducing a building's environmental impacts. By applying passive solar design in conjunction with building codes, energy utility bills can be decreased by 30 percent. Add to that "well insulated and tightly constructed building shells" and the savings can reach 75 percent. (Urban Land Institute, 119)

As with most provisions that may be initially opposed by developers or builders, providing a set of incentives may draw interest that would not otherwise exist. While the return on the initial, more costly investment of energy efficient systems is usually seen in less than ten years, and as fast as only a few years, incentives can help lessen the initial cost burden. Incentives may essentially offer a subsidy to the development through possible tax deferments, deductions, credits, or abatements. Other incentives may include awarding developments a special certification status or the provision of technical and design assistance from the town. Traditional incentives such as density bonuses or reduced standards found in other ordinances may also be used. Additionally, there is the prospect of net metering or receiving a refund for excess power generated on site and pumped back into "the grid."

Appropriate Circumstances and Context for Use

For energy efficient development to be realized, it needs to first be outlined as a critical element in a community's Master Plan, similar to all other innovative land use controls adopted into local ordinances. The master plan should identify energy efficient development as a need and a priority in the community.

Voluntary energy efficient development regulations will be most effectively implemented in communities, regions or states that have a system of incentives in place encouraging

the private sector to move from traditional development systems to high performance models. This could include property tax credits or density bonuses.

Legal Basis and Considerations for New Hampshire

There are several ways communities can incorporate energy efficiency into their municipal ordinances. If a community has adopted zoning and declared energy efficiency a priority in its master plan, then simple provisions related to the construction orientation and building siting can be incorporated into site plan and subdivision regulations as part of the design standards. If the municipality has a building inspector, additional building codes may be adopted that are more stringent than state codes and will produce greater energy savings. Lastly, if the community has a building inspector and feels confident they have ample code enforcement support staff, a comprehensive zoning ordinance may be adopted.

Energy efficient development ordinances are permitted in New Hampshire as a means of carrying forth the purposes of zoning ordinances established in NH RSA 674:17. Section I (j) of that statute encourages the uses of solar, wind, or other renewable energy systems. The law also gives zoning ordinances the power to establish buffer zones or other zoning districts that overlap any existing districts. When these zoning provisions, promoting renewable energy and efficiency, are combined with enabling legislation for performance standards under RSA 674:21 I (h), communities can develop a comprehensive zoning article that provides incentives to developers in exchange for meeting a number of energy efficiency performance standards.

Communities can implement energy efficiency standards into their subdivision regulations through power granted in RSA 674:36 II (k), which establishes the groundwork for the protection of energy sources through the establishment of lot standards, street orientation, and other requirements. These provisions are similar in their intent as is provided for Zoning Ordinances, under RSA 674:17 I (j), as described above. When supported by the master plan communities may also include energy efficiency language in their site plan review regulations as allowed as an innovative land use control per RSA 674:44 II (i).

RSA155-D requires that all new construction comply with State energy efficiency codes and receive a permit certifying compliance. While the Public Utilities Commission (PUC) is charged with administering the code, it is the responsibility of the local building code official to “review plans and specifications to determine if all pertinent data and features of the structure and the equipment systems conform with the provisions of the code.” In communities with a part time building official, the PUC may provide support through application review and compliance certification. Additionally, if there is no local building code, the contractor or owner-builder is responsible for submitting plans and specifications to the PUC for review.

RSA 155-A:2 VI allows municipalities to adopt more stringent building codes than the state codes. This chapter presents some examples of more stringent standards a community may adopt to achieve desired energy savings.

RSA 72:61-72 allows municipalities to adopt property tax exemptions for property owners that have installed solar, wind-powered, or central wood heating energy systems on their property. Only 56 New Hampshire communities offered exemptions as of 2003. The southernmost three counties in the State contained the most communities offering tax exemptions. Hillsborough County had the most communities with 10, while Cheshire and Rockingham Counties each had eight.

Another incentive offered by the State is backward or net metering allowed through PUC Rule 900. Net metering focuses on how much energy a household produces and consumes through the use of a solar, wind, or water-powered generators. Whenever the household is generating more electricity than it is consuming, the meter runs backward, and the homeowner is billed only for the net meter reading. Additionally, under RSA 477:49-51 a landowner can guarantee solar access for an abutter's solar installation through a solar skyspace easement.

Amendments to RSA 198:15-b, effective July 22, 2005, increase support to school districts building high performance schools. Additional state financial support is available to districts building high performance schools. The School Building Aid formula can be augmented by up to three percent, or \$100,000 per year, for districts that design and construct a facility consistent with the high performance school standards published by the State Department of Education. The revised statute also requires districts building to these standards to apply to their utility companies (electric and gas, when available) for the appropriate rebate payments offered on high performance energy equipment.

Examples where Energy Efficient Development Ordinances have been Applied

There are currently no energy efficient development ordinances in New Hampshire. To date, the only efforts regarding energy efficient development are a result of the Cities for Climate Protection programs in Keene and Nashua. Many communities have examples of developers voluntarily undertaking energy efficient measures in their individual endeavors.

Peterborough, New Hampshire's Union Mill project is a prime example of voluntary energy efficient development. The project uses a combination of geoexchange heat pumps and solar thermal panels for heating and cooling; and a wood-pellet backup furnace will assist in heating when necessary. The building will use Energy Star windows and R-49 insulation. In addition, natural building materials will be used in place of more conventional ones. Cotton insulation, soy based urethane foam insulation, formaldehyde free plywood, and natural paints and recycled materials are a few examples of the materials specified for the building.

Elsewhere in New England, Burlington, Vermont's "Guidelines for Energy Efficient Construction" is a series of amendments to the International Energy Conservation Code 2000, which is the same code utilized by the State of New Hampshire. The amendments customize the code to Burlington's climactic conditions and other local needs. These requirements are more oriented toward building codes than zoning ordinance provisions.

The Ordinance covers administration and enforcement, as well as defining terminology. It goes into depth on design conditions, including details on residential building design. The Ordinance also touches upon lot standards.

Model Language, Illustrations, and Guidance for Implementation

To successfully implement regulations to promote energy efficiency there are three ordinance components a community may adopt, dependent on the availability of building inspection and code enforcement personnel and support staff. The more comprehensive the regulatory approach, the greater the level of staff capability is required. The most effective way for a community to generate change and see positive results from their energy efficiency regulations is to adopt a combination of all three regulatory approaches.

For communities just beginning, the easiest and least burdensome on municipal staff is to simply adopt language into development regulations such as **subdivision or site plan review regulations** that requires site development to occur in a fashion that optimizes the passive solar heating and cooling opportunities. A second level is to adopt additional **building codes** that exceed the state energy codes for residential and non-residential construction. This however requires an established building inspector and code enforcement system. The third and most comprehensive method is to adopt a performance **zoning ordinance** encouraging the voluntary implementation of energy efficient practices for new construction in exchange for a set of incentives or bonuses. This however, requires the most staff time of any of the three options. When all three alternatives are used in combination the greatest energy savings results will be achieved.

Alternatively, rather than implementing a set of energy efficient development regulations as are proposed here, communities may choose to require all new development and renovations meet the requirements of the various US Green Building Council Leadership in Energy and Environmental Design (LEED) programs including:

- LEED-NC: New commercial construction and major renovation projects
- LEED-EB: Existing building operations
- LEED-CI: Commercial interiors projects
- LEED-CS: Core and shell projects
- LEED-H: Homes
- LEED-ND: Neighborhood development

Another alternative is for communities to adopt the Energy Star standards for all new construction and renovations.

Development Regulations (Subdivision and Site Plan Review Regulations)

The following should be incorporated as a new subsection within the local development regulations' design standards section.

Energy Efficiency

- I. All buildings are to be sited and developed in such a way as to maximize the benefits of the site for solar heating and passive cooling through the following:

Margin Note: This is not a fixed list of requirements, but instead a list of the fundamentals. Planning Boards can and should review this list prior to implementation. This list can be expanded upon, but should not be reduced.

- A. Buildings are to be oriented on the site to optimize passive solar heating and cooling opportunities.
- B. Buildings are to be oriented so as to minimize wind loads on the structure.
- C. Windows are to be placed, and appropriately shaded, to maximize solar penetration during the winter months and minimize solar penetration during the summer months.
- D. Landscaping is to be designed to provide shading and cooling during the summer months while minimizing reduction of solar heat penetration during the winter months.
- E. Landscaping is to be environmentally sensitive and should include native drought resistant plants and designs; and a reduced need for chemical fertilizers and pest control.
- F. Building design features are to discourage pest infestation, such as sloped roofs to minimize pigeons roosting.

Margin Note: Before putting energy efficiency provisions into development regulations, Planning Boards should review some of the references identified at the end of this chapter to better understand how an applicant can meet these standards.

Building Codes

The following provisions may be adopted in addition to, or used to revise, the Statewide Energy Codes including the International Energy Conservation Code 2000 for residential construction and ASHRAE 99 for commercial and industrial development. They may be utilized in their entirety, or in part, as desired. The provisions should be reviewed by the community's building inspector, code enforcement officer, planning board and/or staff, and municipal legal counsel prior to adoption

Alternatively, communities may directly reference and require that construction meet the standards of Energy Star for Homes or the U.S. Green Building Council's LEED program. Additionally, communities may wish to review the ASHRAE Advanced Energy Design Guide for Small Office Buildings (2004) to guide the establishment of energy efficient building codes for non-residential construction.

While it may not be practical or feasible to require that permit applicants provide an on-site renewable energy source, it is something that can be recommended or encouraged during the review process.

The building codes presented here have predominantly relied on research derived from the New Hampshire Public Utilities Commission, the Environmental Protection Agency's Energy Star Fact Sheets, LEED-NC and LEED-H standards, and Guidelines for Energy Efficient Construction for the City of Burlington, Vermont.

Energy Efficiency

I. Applicability

Wherever the following standards conflict with other building code requirements, those that are more restrictive, and with the greater energy efficiency savings, shall prevail.

II. General Construction Standards

For all new construction and substantial improvements, buildings must comply with the following:

Margin Note: Each community will need to define substantial improvement in their regulations. A standard definition is: "Substantial Improvement" means any combination of repairs, reconstruction, alteration, or improvements to a structure in which the cumulative cost equals or exceeds fifty percent of the market value of the structure. The market value of the structure should equal either the appraised value prior to the start of the initial repair or improvement, or in the case of damage, the appraised value of the structure prior to the damage occurring.

- A. A minimum of fifty (50) percent of all non-hazardous construction or demolition debris materials must be either recycled or salvaged. Calculation of the percent recycled or salvaged can be based on either weight or volume, but the measure used must be consistent for all calculations under this provision.
- B. Seventy-five (75) percent of the existing building structure and envelope, based on surface area and including the structural components of the building's walls, floors, and roof, and the building's exterior skin, shall be maintained in the case of substantial improvements to existing buildings. The following building components are exempted from the calculation of maintained materials: hazardous materials remedied or removed, window assemblies, and non-structural roofing materials.
- C. Re-use existing interior non-structural components or other recycled building materials such as the interior walls, doors, floor coverings, and ceilings in at least fifty (50) percent of the completed building, as calculated by area, in substantial improvements to existing buildings.
- D. A minimum of five (5) percent of the total project material costs must be for salvaged, refurbished, or reused materials. Additionally, another five (5) percent of the total material costs must be for products with post-consumer recycled content.

- E. The project must use building materials that provide long-term durability and decreased maintenance costs; are extracted, processed and manufactured within 500 miles of the project site; and are made from renewable resources or materials wherever possible.
- F. The project must provide adequate storage and collection of recyclables both during and post construction. Post construction recyclable areas must be easily accessible to all building occupants/users and be sufficiently sized for storage and collection of non-hazardous materials including at a minimum paper, corrugated cardboard, glass, plastics, and metals.
- G. The project must reduce the building's heat load by either using roofing materials with a minimum Solar Reflectance Index (SRI) of 78 for roof slopes less than or equal to 2:12 or a minimum SRI of 29 for slopes greater than 2:12; or install a vegetated roof for at least 50 percent of the roof area.
- H. Air ventilation rates, calculated by the Breathing Zone Outdoor Airflow Ventilation Rate Procedure, must be exceed the *State/Local* Building Codes' minimum standards for all mechanically ventilated spaces by at least 30 percent.
- I. Within all naturally ventilated spaces the permit applicant must demonstrate that the room-by-room air flows will effectively ventilate at least 90 percent of the occupied area based on the minimum ventilation rates established in the *State/Local* Building Codes.

Margin Note: Since energy efficiency is highly dependent on restricting air leakage from conditioned to unconditioned spaces, careful attention needs to be given to the supply of fresh air and to monitoring the indoor air quality.

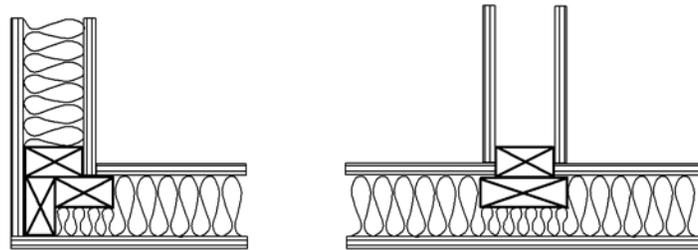
III. Residential Construction Standards

For all residential new construction and substantial improvements, buildings must comply with the following:

- A. Covered and secure bicycle storage facilities must be provided on site allowing sufficient capacity for a minimum of one bicycle per dwelling unit. This may be provided as a separate storage facility or as individual carports or garages if part of the proposed design.
- B. Wood framed construction must use "Value-Engineered Framing" to improve the building envelope's energy efficiency.
 - 1. All exterior wall framing to be 2x6 stud framing, 24 inches on center.
 - 2. Align window openings with stud spacing to minimize narrow openings between studs that are difficult to insulate.

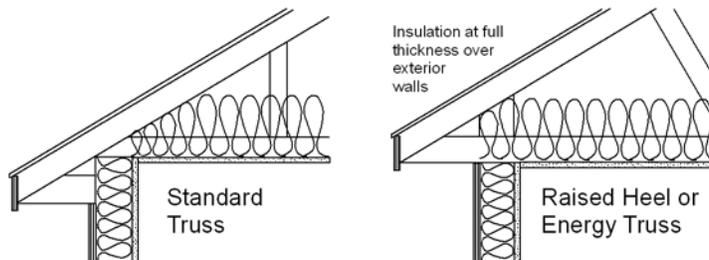
3. Utilize plywood box beam or insulated headers with a minimum R-10 value.
4. Arrange wall studs in corners to minimize uninsulated or difficult to insulate small pockets. Examples of ideal corner stud configurations:

Value-Engineered Corner Framing



- C. Either provide insulation for flat ceilings at an R-Value of 49 for standard truss construction or an R-Value of 38 with a minimum six inch raised heel or energy truss.

Roof Truss Insulation



- D. Windows must meet or exceed ENERGY STAR criteria for Windows by 10 percent or more.
- E. Window air leakage shall not exceed 0.2 cubic feet per minute of air leakage per linear foot of window pane (CFM/FT).
- F. Air leakage tested to less than or equal to 0.25 air changes per hour (ACH).
- G. Duct leakage is tested to less than or equal to 3.0 CFM25 per 100 square feet to the outdoors.
- H. All ductwork must be insulated to a minimum of R-6 if located in an unconditioned space, including attics, basements, and exterior walls. Exceptions include insulation for exhaust air ducts or ducts within HVAC equipment. In addition, instances where the design temperature difference

between the air in the duct and surrounding air is 15 degrees or less at the most extreme temperature differential are exempt from this provision.

- I. HVAC piping in unconditioned spaces conveying fluids at temperatures above 120 degrees or chilled fluids at less than 55 degrees must be insulated to a minimum of R-5.
- J. Circulating hot water systems flowing through unconditioned areas must be insulated to a minimum of R-4.
- K. All heating and cooling distribution systems must be designed to minimize their total run or length of ductwork, be as compact as possible, and minimize direction and size changes.
- L. Heating and cooling systems, including boilers, furnaces, heat pumps, programmable thermostats, and air conditioners, must meet or exceed ENERGY STAR labeled product standards.
- M. Range hoods must be provided and vented to the outdoors.
- N. Mechanical rooms must be enclosed and insulated to a minimum of R-11.
- O. Ventilation must at a minimum be provided through a bath fan rated for continuous use and set on an independent timer.
- P. Insulation values throughout new construction must meet the following minimum standards based on the planned glazing percentage.

- 1. The Planned Glazing Percentage equals:
 $100 \times \frac{\text{The Glazing Area (square feet)}}{\text{Gross Wall Area}}$

Performance Standards	Planned Glazing Percentage				
	10%	13%	15%	18%	25%
Window U-Value	.35	.33	.31	.30	.27
Ceiling R-Value	38	38	38	38	38
Above Grade Wall R-Value	19	19	21	21	21
Floor R-Value	30	30	30	30	30
Door U-Value	.35	.35	.35	.35	.35
% AFUE Efficiency	85	84	86	90	87
Basement Wall R-Value	13	19	19	19	19
Slab R-Value	10	10	10	10	13
Standard Roof Assembly R-Value	49	49	49	49	49
Raised Truss Roof	38	38	38	38	38
Cathedral Ceiling – up to 500 S.F.	30	30	30	30	30

IV. Non-Residential Construction Standards

For all non-residential new construction and substantial improvements, buildings must comply with the following:

- A. Whenever possible the building must incorporate high-efficiency mechanical equipment that meets or exceeds ENERGY STAR ratings, for those products rated by the US EPA Energy Star Program. Products that are not reviewed by the US EPA should be selected from the most energy efficient available.
- B. All insulation R-values must exceed *State/Local* Building Code standards by at least 15 percent.
- C. All new buildings must demonstrate a 20 percent improvement of the proposed building performance rating over the baseline building performance rating per State Building Codes/ASHRAE 99 by a whole building project simulation using Appendix G, Building Performance Rating Method, of ASRAE/IESNA Standard 90.1-2004. Existing building renovations must demonstrate a minimum 15 percent improvement of the overall building performance rating.
- D. Cargo doors and loading docks must have weather seals to minimize air infiltration when vehicles are parked in the doorway.
- E. Vestibules must be provided as a buffer between the interior conditioned air and the outdoors. Interior and exterior doors must be a minimum of seven feet apart when both sets of doors are closed.
- F. Recessed lighting fixtures must be Type IC rated and sealed, prohibiting air infiltration between conditioned and unconditioned air spaces. OR Type IC or non-IC rated fixtures must be installed inside a sealed box constructed with ½ inch gypsum wall board, or other air tight assembly, with a minimum ½ inch clearance from combustible materials and a minimum 3 inch clearance from insulation material.
- G. All windows must have a U-Value of .35 or lower.
- H. The applicant must demonstrate (through either computer simulation or other manual computation of indoor light measurements that the proposed building provides a minimum daylight illumination level of 25 horizontal footcandles in 75 percent of the occupied areas. Measurements shall be based on clear sky conditions, at noon, on the equinox, 30 inches above the finished floor. Measurements must be taken on a 10-foot grid and documented on the building floor plans. Exception: This provision may be waived if the applicant can demonstrate that the indoor area use would be hindered or impeded by the introduction of daylight.
- I. The building's lighting design must provide individual lighting controls for ninety (90) percent of the building occupants/users (either as individuals or

groups) to make adjustments to suit their individual (or group) needs and preferences.

- J. The building's thermal comfort design must provide controls so that 50 percent of the building's occupants/users (either as individuals or groups) may make adjustments to suit their individual (or group) needs and preferences.
- K. Design all HVAC systems to meet the requirements of ASHRAE's Thermal Comfort Conditions for Human Occupancy.
- L. Building HVAC ductwork must be placed in insulated or conditioned spaces or must be insulated to exceed the R-values specified in the *State/Local* Building Code standards by at least 15 percent. Exception: Dust insulation is not required on ducts located within equipment or when the design temperature difference between the interior and exterior of the duct or plenum does not exceed 15 degrees.
- M. There shall be no use of CFC-based refrigerants in new building construction for heating, ventilation, air conditioning, and refrigeration systems or CFCs as found in fire suppression systems. For conversions or renovations to existing building, there must be a complete CFC phase out prior to building completion.
- N. All non-residential new construction or major renovations must provide bicycle racks for five percent of the building's occupants or users within 200 yards of the building entrance and separate shower facilities for men and women.
- O. Window air leakage shall not exceed 0.2 cubic feet per minute of air leakage per linear foot of window pane (CFM/FT)
- P. Air leakage tested to less than or equal to 0.25 air changes per hour (ACH).
- Q. Duct leakage is tested to less than or equal to 3.0 CFM25 per 100 square feet to the outdoors.

Zoning Ordinance Article

I. Purpose

The purpose of this *Article* is to encourage and provide for energy efficient development within Community for both new and substantially improved buildings. It is intended to reduce energy consumption and promote the use of alternative fuel sources. This *Article* was established in order to meet the goals related to energy efficiency set forth in the Community Master Plan.

II. Authority

The provisions of this *Article* are adopted pursuant to RSA 674:17 I (j) and are for the purpose of promoting the use of solar, wind, or other renewable energy systems and to protect access to energy sources by the regulation of orientation of streets, lots, and

buildings, establishment of maximum building height, minimum set back requirements, and limitations on type, height, and placement of vegetation.

III. Applicability

The provisions of this *Article* are permitted as a conditional use within *all zoning districts* defined in this Ordinance. Any building constructed to meet the energy efficiency standards of this *Article* shall be certified by the Community Zoning Department / Planning Department / Building Inspector as an Energy Efficient Building.

IV. Definitions

Demand – the rate at which energy is delivered to loads and scheduling points by generation, transmission or distribution facilities. It is the produce of voltage and the in phase component of alternating current measured in units of watts or standard multipliers thereof, e.g., 1,000 W=1kW.

Energy Efficient Building – any building that is proven to exceed the minimum legal efficiency standards provided by the Statewide Energy Codes, including the International Energy Conservation Code 2000 for residential construction and ASHRAE 99, or any subsequent revisions adopted by the State, for commercial and industrial development.

Load Profiling – the process of graphing a customer’s demand for energy over a period of time, typically a day, season or year.

Renewable Energy Generation – is energy generation from renewable resources including, but not necessarily limited to, biomass, solar thermal, photovoltaic, wind, geothermal, small hydropower of 30 megawatts or less, digester gas, landfill gas and municipal solid waste generation technologies.

Substantial Improvement – any combination of repairs, reconstruction, alteration, or improvements to a structure in which the cumulative cost equals or exceeds fifty percent of the market value of the structure. The market value of the structure should equal either the appraised value prior to the start of the initial repair or improvement.

Utility Distribution Companies – the entities which will continue to provide regulated services for the distribution of electricity to customers and serve customers who do not choose direct access.

V. Conformance and Incentives

Applications under this *Article* are eligible for status as an Energy Efficient Building and density bonuses based on their energy efficiency performance as demonstrated by completion of the checklists provided in section VI of this *Article*; and computation of their energy efficiency score as provided below.

Margin Note: Communities can modify the minimum score provision provided in section V.B to earn a bonus. The density bonus proposed in section V.C is also malleable and should be reviewed to ensure the bonus is sufficient within the local market. Alternatively, density bonuses could instead be based on how much an application exceeds the State Energy Codes’ baseline building performance rating

standards. The standards provided in section VI could then serve as an educational piece to help applicants achieve efficiency levels beyond existing code requirements.

- A. An applicant's score is calculated as follows:

For residential applications: Add the score earned in section VI.A to the score earned in VI.B, divide by a maximum possible score of [*insert the total number of checklist items in sections VI.A and VI.B*] and multiply by 100.

For non-residential applications: Add the score earned in section VI.A to the score earned in VI.C, divide by a maximum possible score of [*insert the total number of checklist items in sections VI.A and VI.C*] and multiply by 100.

- B. To earn the status of an Energy Efficient Building, an application under this *Article* must earn a minimum score of 50 out of a maximum 100.
- C. All applications that earn the status of an Energy Efficient Building under this *Article* are eligible for a density bonus of fifteen percent (15%).

Margin Note: Communities should also inform applicants of other incentives to creating an energy efficient building, such as the State's local option property tax exemption program, the Energy Policy Act of 2005 tax credits, net metering, and others that may become available in New Hampshire.

VI. Energy Efficiency Standards

The following standards should serve as a check list for applicants. All applicants under this *Article* shall complete section VI.A and then either section VI.B for residential applications or section VI.C for non-residential applications.

- A. All applicants under this *Article*, both residential and non-residential applicants for new construction and substantial improvements to existing structures, should consider the following methods to achieve energy efficiency. Applicants should check off all energy efficient principles on this list that are utilized in the proposal. All subdivision and site plan review applications must document that these check points have been included in the design, and be certified by a registered architect or engineer or other qualified third party testing entity.

Check all those that have been incorporated in this application:

- The proposal represents an optimized resource efficient design and minimizes the building materials to be consumed
- Buildings have been oriented on the site to maximize passive solar heating and cooling opportunities and to minimize wind loads on the structure
- Windows have been placed, and appropriately shaded, to maximize solar penetration during the winter months and minimize solar impacts during the summer months

- Utilize additional passive cooling and heating systems
- All insulation R-values exceed code standards by at least 5 percent
- Building HVAC duct work is placed in insulated spaces
- Building materials will be reused by recycling demolition materials and seeking used materials for new construction or rehabilitation
- The project uses building materials that provide long-term durability or decreased maintenance costs
- The project provides for adequate storage and collection of recyclables both during and post construction
- Landscaping is designed to provide shading and cooling during the summer months while minimizing reduction of solar heat penetration during the winter months
- Environmentally sensitive landscaping, which should include native drought resistant plants and designs and a reduced need for chemical pest control
- Building design features have been employed to discourage pest infestation, such as sloped roofs to minimize pigeons roosting
- Includes onsite renewable energy generation
Type: _____

____ Score: the total number of checkmarks out of a possible [*insert the total number of checklist items in sections VI.A*]

- B. All residential construction applicants for new construction and substantial improvements to existing structures should consider the following additional methods to achieve energy efficiency. Applicants should check off all energy efficient principles on this list that are utilized in the proposal. All Subdivision Plan and Site Plan applications must document that these check points have been included in the design, and be certified by a registered architect or engineer or other qualified third party testing entity.

Check all those that have been incorporated in this application:

- Meets ENERGY STAR criteria for Homes or LEED-R
- Wood framed construction utilizes “Value-Engineered Framing” to improve the building envelope’s energy efficiency
- Air leakage tested to less than or equal to 0.25 ACH
- Windows exceed ENERGY STAR criteria for Windows by at least 5 percent
- Duct leakage is tested to less than or equal to 3.0 CFM25/100 square feet to the outdoors
- Heating and cooling systems meet or exceed ENERGY STAR standards for HVAC systems
- All appliances are certified ENERGY STAR appliances
- All installed lighting fixtures use energy efficient fixtures and controls

- The house perimeter and gross area are smaller than the local averages as determined by the _____ Community Building Inspector/Code Enforcement Officer

_____Score: the total number of checkmarks out of a possible [*insert the total number of checklist items in sections VI.B*]

- C. All non-residential construction applicants for new construction and substantial improvements to existing structures should consider the following additional methods to achieve energy efficiency. Applicants should check off all energy efficient principles on this list that are utilized in the proposal. All Subdivision Plan and Site Plan applications must document that these check points have been included in the design, and be certified by a registered architect or engineer or other qualified third party testing entity.

Check all those that have been incorporated in this application:

- Incorporate day lighting as much as possible based on the structure typology to reduce demand for electric lighting fixtures
- Utilize appropriate window glazings with Low-E coatings and high R-value or low U-factor ratings
- Optimizes the electrical lighting design to minimize the need for artificial lighting
- Utilize full cutoff lighting fixtures outdoors to eliminate light pollution
- Lighting fixtures are energy efficient
- Incorporate high-efficiency mechanical equipment
- Optimize HVAC systems
- Utilize energy efficient appliances and office equipment that meet or exceed ENERGY STAR ratings whenever possible
- Provide bicycle racks for five percent of the building's occupants or users within 200 yards of the building entrance and separate shower facilities for men and women.

_____Score: the total number of checkmarks out of a possible [*insert the total number of checklist items in sections VI.C*]

Margin Note: The lists of performance standards in section VI are not fixed lists, but instead suggestions of ideal content, and can be modified by the Planning Board after careful review. Once a fixed list is established, the total number of items on each list needs to be inserted into the score calculation text in this section and in section V.

VII. Certification of Compliance

- A. Written confirmation of energy efficient system performance shall be provided by the applicant from an independent licensed engineer or architect, or other agency certified to perform energy efficiency audits. Additional independent third party testing of the projects energy efficiency shall be

conducted upon completion of construction and submitted to the Community Building Inspector/Code Enforcement Officer. The *building inspector/code enforcement officer* shall verify that each of the energy saving systems is installed and functions properly.

- B. No certificate of occupancy shall be issued for an Energy Efficient Building without written confirmation of the building's energy efficiency performance as required in section 7.1 above.

Margin Note: Municipalities may also elect to require a performance guarantee, similar to a road bond, based on the percent of the total building value to ensure compliance. The guarantee may be structured to designate a specified number of years to bring the efficiency performance up to the permitted level or the town will utilize the funds to carry it out.

VII. Monitoring and Enforcement

- A. This article shall be administered by the *Planning Board/Local Planning Department/Building Inspector/Code Enforcement Officer*. Applications for the provisions provided under this *Article* shall be made to the Planning Board and shall be part of the submission of an application for Site Plan or Subdivision Plan approval.
- B. The applicant or building owner is required to monitor the energy saving systems and document their performance over time, through tracking and documenting the number of energy units from either their electrical, oil, natural gas monthly bills or in the case of on site power generation the units of energy produced by those sources, to certify that they are in fact achieving the energy savings that approval of the project was based on. This documentation should be provided to the Community Building Inspector/Code Enforcement Officer semi-annually following issuance of a certificate of occupancy.

References

The following documents and websites provide a good general understanding of energy efficient development. Many of these explain the overall how-to's, demonstrate ways to create a successful energy efficient design, and provide a general background on energy efficient development.

AIA Vermont. 2005. *Benefits of High Performance: Building Owner's Guide*. Vermont: Author.

City of Burlington Planning and Zoning. 2005. "Design Review Guide: Energy Efficient Construction." <http://www.ci.burlington.vt.us/planning/dguide/energy_efficiency.pdf > October 24, 2005.

Energy Star. 2006. "Features of ENERGY STAR Qualified New Homes." (See also associated fact sheets by clicking on the links)

<http://energystar.gov/index.cfm?c=new_homes_features.hm_es_label> February 1, 2006.

Howard, Bion D. 2005. "Greener Building Basics: Special Report" <energybuilder.com/greenhome-basics.htm> October 24, 2005.

Lober, Joe, Lowell Ungar, David Weitz, and Harry Misuriello. 2005. *Building on Success: Policies to Reduce Energy Waste in Buildings*. Washington, DC: Alliance to Save Energy. <<http://www.ase.org/images/lib/buildings/Building%20on%20Success.pdf>> October 24, 2005.

Public Technology, Inc. 1996. *Sustainable Building Technical Manual*. Washington, DC: US Department of Energy. <<http://www.sustainable.doe.gov/pdf/sbt.pdf>> October 24, 2005.

Urban Land Institute. 2000. *The Practice of Sustainable Development*. Washington, DC: Author.

US Green Building Council. 2005. "An Introduction to the US Green Building Council and the LEED Green Building Rating System." <<http://www.usgbc.org/chapters/newyork/docs/ppt/usgbcintroBRANY.ppt>> October 24, 2005.

US Green Building Council. 2006. "LEED: Leadership in Energy and Environmental Design" <<http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>> March 29, 2006.

Rocky Mountain Institute. 2005. "Community Energy Workbook: Excerpts." <www.rmi.org/sitepages/pid307.php> October 24, 2005.

Wolcott, Barbara. 2004. "Sun, Wind, Water, Earth," *Planning*, Vol. 70 No. 11, December 2004, pp 4-7.

The following references are existing energy efficient regulations and standards that go beyond standard energy codes and were developed either by local governing bodies or building related organizations. Also included here are guidelines for creating such regulations.

American Planning Association (APA). 2004. "Policy Guide on Energy." <<http://www.planning.org/policyguides/energy.htm>> October 19, 2005.

Built Green Colorado. "Environmental Benefits." <www.builtgreet.org/government/environment.htm> October 24, 2005.

Burlington Electric Department. 2001. "Guidelines for Energy Efficient Construction for the City of Burlington, Vermont."

<<http://www.burlingtonelectric.com/EnergyEfficiency/constord.htm>> October 24, 2005.

Minnesota Planning Environmental Quality Board. 2000. *From Policy to Reality: Model Ordinances for Sustainable Development*. Minnesota: Author. <<http://www.mnplan.state.mn.us/pdf/2000/eqb/ModelOrdWhole.pdf>> October 24, 2005.

National Association of Home Builders Research Center. 2004. *NAHB Model Green Home Building Guidelines*. Washington, DC: National Association of Home Builders. <http://www.nahbrc.org/greenguidelines/complete_guidelines.pdf> October 24, 2005.

US Green Building Council. 2005. "LEED for Homes Pilot Checklist." <https://www.usgbc.org/FileHandling/show_general_file.asp?DocumentID=851> March 29, 2006.

US Green Building Council. 2005. "LEED-NC: Green Building Rating System for New Construction and Major Renovations, Version 2.2." <https://www.usgbc.org/FileHandling/show_general_file.asp?DocumentID=1095> March 29, 2006.

Vermont Builds Greener. 2005. "Vermont Builds Greener." <<http://www.bsrtvt.org/vermontbuiltgreenprogram.html>> January 27, 2006.

The following are links to many of the existing energy efficiency programs offered by the State of New Hampshire or by the U.S. Government. These programs can serve as valuable incentives to developers and communities. Many provide financial or planning support.

Database of State Incentives for Renewable Energy. <www.dsireusa.org> October 26, 2005.

National Association of Home Builders Research Center. 2002. *Summary of Existing Green Building Programs*. Colorado: National Renewable Energy Laboratory. <http://www.nahbrc.org/Docs/MainNav/GreenBuilding/3643_Summarycomplete.pdf> October 24, 2005.

New Hampshire Office of Energy and Planning. 2005. "Energy Efficiency Programs in New Hampshire." <<http://nh.gov/oep/programs/energy/resources.htm>> October 25, 2005.

New Hampshire Office of Energy and Planning. 2005. "Renewable Energy Incentives and Tax Exemptions in New Hampshire."

<<http://nh.gov/oep/programs/energy/renewableenergy/RenewableEnergyIncentiveandTaxExemptionsinNewHampshire.htm>> October 24, 2005.

New Hampshire Partnership for High Performance Schools. 2005. <www.nhphps.org> October 24, 2005.

State of New Hampshire. 2005. "Chapter 72 Persons and Property Liable to Taxation, Sections 72:61 to 72," *State of New Hampshire Revised Statutes Online*. <<http://www.gencourt.state.nh.us/rsa/html/indexes/V.html>> October 20, 2005.

United States Department of Energy: Energy Efficiency and Renewable Energy. 2005. "EERE State Activities and Partnerships." <www.eere.energy.gov/states/state_specific_information.cfm/state=NH> October 24, 2005.

United States Department of Energy: Energy Efficiency and Renewable Energy. 2005. "Partnerships," *Solar Energy Technologies Program*. <www.millionsolarroofs.org/articles/static/1/1102001401_1023713684.html> October 24, 2005.

United States Department of Energy. 2006. "The Energy Policy Act of 2005." <<http://www.energy.gov/taxbreaks.htm>> February 1, 2006.

For more information on existing regulations and energy planning in New Hampshire, energy consumption and other base data, refer to the following publications.

Building Environmental Science and Technology. 2005. "Good for the Environment -- Good for the Economy!" <energybuilder.com/nrgeffic.htm> October 27, 2005.

New Hampshire Governor's Office of Energy and Community Services. (2002). *New Hampshire Energy Plan*. New Hampshire: Author. <<http://nh.gov/oep/programs/energy/StateEnergyPlan.htm>> October 24, 2005.

New Hampshire Office of Energy and Planning. 2005. "New Hampshire Eighteen Month Price Trend for Petroleum-Based Fuels July 2004-December 2005." <<http://www.nh.gov/oep/programs/energy/documents/NH20MonthPriceTrend1205.pdf>> February 1, 2006.

New Hampshire Public Utilities Commission. 2006. "Energy Codes." <<http://www.puc.state.nh.us/EnergyCodes/energypg.htm>> March 29, 2006.

State of New Hampshire. 2005. *House Bill 185*. <www.gencourt.state.nh.us/legislation/2005/HB0185.html> October 24, 2005.

State of New Hampshire Office of the Governor. 2005. "Governor Signs Executive Order Directing State Agencies to Cut Energy Use by 10 Percent." <www.nh.gov/governor/news/071405SaveEnergy.htm> October 24, 2005.

Public Service of New Hampshire. 2006. "Impact of Energy Prices," *Living with Energy*, January 2006, pp 3.

The following organizations and websites provide a wealth of information on energy efficiency.

Alliance to Save Energy. <www.ase.org>

Building Green, Inc. <www.buildinggreen.com>

Building Science Corporation. <www.buildingscience.com>

Efficiency Vermont. <www.encyvermont.com>

Energy Federation, Inc. <www.efi.org>

Energy Star. <energystar.gov>

Environmental and Energy Study Institute <www.eesi.org>

Green Institute <greenpolicy.us/Main_Page>

Healthy Building Network. <www.healthybuilding.net>

McDonough Braungart Design Chemistry. <www.mbdc.com>

New Hampshire Sustainable Energy Association. <www.nhsea.org>

Northeast Sustainable Energy Association. <www.nesea.org>

Sustainable by Design. <www.susdesign.com>

The Jordan Institute. <www.thejordaninstitute.org>

US Green Building Council. 2006. <www.usgbc.org>